Laboratory & Diagnosis 6, 26 (Supp . Issue) IQC13 Iranian Association of Clinical Laboratory Doctors 2015

Laboratory & Diagnosis

Official Journal of Iranian Association of Clinical Laboratory Doctors

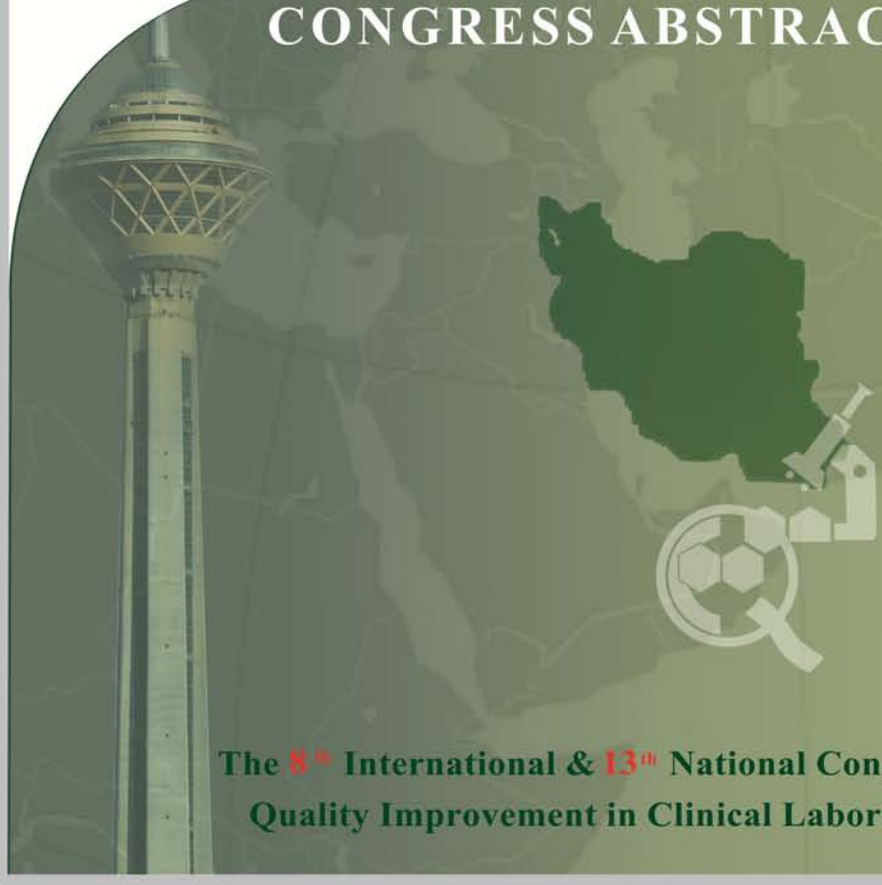
Vol. 6, No. 26, Supplement Issue April 2015

Iranian Association Of Clinical Laboratory Specialists

Iranian Association Of Clinical Laboratory Doctors

National Reference Laboratory

CONGRESS ABSTRACTS



The 8th International & 13th National Congress on Quality Improvement in Clinical Laboratories

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Laboratory & Diagnosis

Official Journal of Iranian Association of Clinical Laboratory Doctors

Supplement issue for IQC13

Layout by: Navid Ghahremani

Circulation:
1000 copies

Address:
No.29, Ardeshir Alley, Hashtbehesht St., Golha Square, Fatemi Ave, Tehran 1414734711 – Iran.
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Message of Congress Chairman

Dr. Behzad Poopak
DCLS, PhD

Dear and venerable scientists, scholars, associates and guests,

In the beginning we would like to give thanks for our colleagues in the Ministry of Health and Medical Education for their efforts in the design and implementation of the health system reform plan that have facilitated the development and delivery of diagnostic and therapeutic services.

At present by the grace of God and efforts of laboratory science pundits, planning to hold one of the most glorious scientific events; "the Eighth International Thirteenth National Congress on Quality Improvement in Clinical Laboratories", is in progress. Hopefully, achievements of the Congress, as always, lead to improvement of the quality of laboratory services in Iran.

During the Congress that will be held on 22-25 April 2015, scientific issues will be discussed within seventeen specialty topics and related workshops.

We hope that with the help of God and by providing an opportunity for the exchange of up to date knowledge, utilization of the results of conducted researches and interdisciplinary interactions of Iranian and foreign scientists, professors, scholars and students in a lively and friendly atmosphere, we can take another important step towards achieving the objectives of the Quality Improvement Congress.

I would like to express my gratitude to the authorities and administrators of the Congress as well as all scientists, scholars, partners and guests who help us with planning and glorious execution of the Congress.

Message of Congress Secretaries

Dr. M. R. Bkhtiari
DCLS, PhD

Dr. A. Sadeghitabar
DCLS

Dr. M. Taghikhani
PhD

Dear Guests, it has been thirteen years that we have been able, by the help of God, to host the great family of laboratory sciences with the Congress of Quality Improvement in Clinical Laboratories. We hope to see your graceful presence again on 22-25 April 2015.

We are proud to announce that the Eighth International and Thirteenth National Congress on Quality Improvement in Clinical Laboratories, by sending a detailed program of the congress, has obtained the scientific and regulatory support of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), the most prestigious international organizations in clinical and laboratory medicine.

The thirteenth congress will have a new look at the latest academic and applied sciences. Twenty scientific topics and related workshops are designed in a way that laboratory and clinical partners have an opportunity in a joyful atmosphere to achieve scientific and practical strategies for providing better quality services.

We hope this congress provides the opportunity for professors, researchers, students and those interested in the field of laboratory sciences to exchange their scientific experiences, ideas and research findings.

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ABSTRACTS

The 8th International & 13th National Congress on Quality Improvement in Clinical Laboratory

Oral Presentations

Iranian Association of Clinical Laboratory Doctors

Cancer and Tumor Immunology; Malignancies Arising from the Immune System Cell O1 - O3

O1

High Placenta-Specific 1/Low Prostate-Specific Antigen Expression Pattern in High-Grade Prostate Adenocarcinoma

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Background: The scarcity of effective therapeutic approaches for prostate cancer (PCa) has encouraged steadily growing interest for the identification of novel antigenic targets. Placenta-specific 1 (PLAC1) is a novel cancer–testis antigen with reported ectopic expression in a variety of tumors and cancer cell lines. The purpose of the present study was to investigate for the first time the differential expression of PLAC1 in PCa tissues. Methods: We investigated the differential expression of PLAC1 in PCa, high-grade prostatic intraepithelial neoplasia (HPIN), benign prostatic hyperplasia (BPH), and nonneoplastic/nonhyperplastic prostate tissues using microarray-based immunohistochemistry (n= 227). The correlation of PLAC1 expression with certain clinicopathological parameters and expression of prostate-specific antigen (PSA), as a prostate epithelial cell differentiation marker, were investigated. Results: Placenta-specific 1 (PLAC1) expression was increased in a stepwise manner from BPH to PCa, which expressed highest levels of this molecule, while in a majority of normal tissues, PLAC1 expression was not detected. Moreover, PLAC1 expression was positively associated with Gleason score ($p \leq 0.001$). Interestingly, there was a negative correlation between PLAC1 and PSA expression in patients with PCa and HPIN ($p \leq 0.01$). Increment of PLAC1 expression increased the odds of PCa and HPIN diagnosis (OR 49.45, 95 % CI for OR 16.17–151.25). Conclusion: Our findings on differential expression of PLAC1 in PCa plus its positive association with Gleason score and negative correlation with PSA expression highlight the potential usefulness of PLAC1 for targeted PC therapy especially for patients with advanced disease.

Keywords: Immunohistochemistry, Gleason, PLAC1, Prostate Cancer, PSA

O2

P4 Medicine in Cancer: Transformation of Healthcare from Reactive to Preventive

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Appearance of a new phenomenon called P4 medicine which is the short form of personalized, predictive, prevention and participatory has revolutionized the prospective in medicine which in turn would transform the current health care system from reactive to preventive in nature. System biology and personalized medicine which come from new science gathered discrete fields of "omics" which led to novel hypotheses that ultimately changed our focus from disease to wellness. Detection and treatment of a disease before appearance of its sign and symptoms still is an ultimate goal of healthcare system. In this path, potential ability of P4 medicine has shown different key benefits including 1) early disease detection long before appearance of symptoms, 2) patient's stratification to specify the best therapy, 3) individualization of drug type and dose to minimize drug side effects, 4) reduction in cost, clinical failure and improvement in therapies, 5) optimization of wellness and avoiding disease. The best example in which the P4 medicine could intervene is cancer. This multi-factorial disease which is the result of many factors i.e. gene make up, environmental factors and life style could be managed the best by personalized, predictive, preventive and participatory so called P4 medicine.

Keywords: P4 medicine, Preventive, Personalized

O3

Laboratory Diagnosis of Malignant Gammopathies

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Immounoglobolines are proteins, produces by plasma-cells, which are stimulated by antigens or mytogens. On electrophoresis, these proteins migrate catodic, the opposite site for albomine. The reason for the name of Gamma-globolines Gamma globulines or immunoglobulines are secreted bye millions of plasma cells, by different specificities, If one or some clones became malignant, a huge volume of immunoglobolines are produced and an abnormal content of the protein appears in the gamma region. This phenomenon is called gammopathy. The gammopathy might contain a complete product of immunogloboline or some chains like: heavy or light chain only. Gammopathy might be seen in urine or serum or in both. Although the gammopathy is almost detected by electrophoresis and immunoelectrophoresis, other methods such as nephelometery, immunoturbidometery, free light chain detection and bence-johns protein assay are used.

O3/1

Counteraction between Cancer and the Immune System: Tumor Immunology Surveillance

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Cancer is a major health problem worldwide and one of the most important causes of morbidity and mortality in children and adults. The concept of immune surveillance of cancer in the field of tumor immunology states that a physiologic function of the immune system is to recognize and destroy clones of transformed cells before they grow into tumors and to kill them as soon as they are sensed by the immune system. Perhaps potential cancer cells arise frequently throughout life, but the immune system usually destroys them as fast as they appear. The immune system mounts an attack against established cancers although it sometimes fails. In a good immune surveillance state, cancer cells must express non-self antigens. Otherwise the immune system would seem to be tolerant to them. It is now generally accepted that visible cancers represent a rare failure of an intact smart and clever immune system that has been eliminating transformed cells throughout life. Neoplasms of the immune cells, including different types of leukocytes of myeloid and lymphoid origins, are an important clinical problem, although they are not the most frequently occurring human malignancies. Moreover, due to the accessibility of white blood cells, these cancers have been utilized to test new diagnostic and therapeutic techniques, leading to improve the general process of oncologic research studies. Today, using leukohematologic malignancies as models, these new methodologies are ranging from deep sequencing of both the genome and epigenome to cell based therapies. Cells with uncontrolled mitosis may acquire somatic mutations that increasingly protect them from the host's immune system through different strategies like: • reduced expression of tumor antigens • reduced expression of class I & II MHC molecules to Th and Tc cells • reduced efficiency of loading antigenic peptides into HLA molecules • secretion of immunosuppressive cytokines • recruitment of immunosuppressive Treg cells. Both innate and adaptive immune systems react against tumors, and exploiting these reactions is an important goal of tumor immunologists. In the session, It will briefly be describe the types of antigens that are expressed by malignant tumors, how the immune system recognizes and responds to these antigens, how tumors evade the host immune system, and the application of immunologic approaches to the diagnosis and treatment of cancer.

Keywords: Tumor Immunolgy, Surveillance, Tumor Evasion, Oncoantigen Recognition

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O3/2

Tumor Markers, Biomarkers, Concepts and Clinical application

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Biologically, tumors can developed under uncontrolled cell proliferation (tumorogenesis) caused by inherited genetic mutations, include activation of growth factors, oncogenes, or inhibition of apoptosis, tumor suppressor genes and cell cycle regulators. As the cancer progresses toward metastasis, additional changes occured such as loss of cell adhesion proteins, β catenin, E- cadherin or activation of angiogenesis genes, VEGF. During these stages, tumor markers, TM produced either by tumors themselves or by their effects on the normal tissues, therefore they are invaluable tools that clinicians can use for a variety of modalities and encompasses as an array of diverse molecules, receptors and enzymes. TM detections applied for screening, prognosis, monitoring of effectiveness of therapy and evaluation of recurrences. Application of detection of enzymes (PSA), serum proteins (β2 M, free light chains), carbohydrate cancer antigens (CA-19-9) CA-15-3, …) their method of detcetion and interpretation of results, recommendation for test ordering discussed for frequently ordered TM.

Iranian Association of Clinical Laboratory Doctors

Challenges of Doing Research in Clinical Laboratory O4 - O9

The importance of research in all fields especially in the fields of life sciences and clinical medicine is not deniable. All developments that are accomplished continually are thanks to the investigatons carried out over the years. Therefore, it is necessary for medical professionals to understand the research and methods of gathering, integrating and statistical interpreting of data in order to achieve the research aims and eventually make publications to present in scientific conferences and meetings.

Provided that research strategies can be explained in this regard, clinical diagnostic laboratories are a valuable source of information that can be analyzed and used to carry out investigations in different clinical fields especially in improving laboratory tests methods.

Just like the extraction of gold from ore impurities is difficult, there are many challenges in the approaches to research based on laboratory sources, that should be scrutinized;

Certainly, these challenges can be overcome in this congress or the next ones, with integration and collaboration of a team consisting of clinicians and specialists in basic science, laboratory, and statistics and software. Moreover, a new perspective can be opened by creating strategies based on laboratory research as well as presenting findings of successful research in this field.

Dr. M. R. Sarookhani, DCLS, PhD

O4

Study of Laboratory Sciences Students 'Attitudes about Researching and its Current Challenges and Comparison it with Other Fields of Studies Students at Paramedical Faculty of Tabriz Medical Sciences University

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Background: The laboratory sciences field is one of the most impotent branches among medical sciences. Unfortunately, researching as an essential component in this field has been faced with obstacles. For solving these problems the obstacles should be recognized, so this research in order to identify The challenges in the laboratory sciences field has been done in Tabriz University of Medical Sciences. Methods: This cross sectional study was conducted in 1393. Total of 321 undergraduate students in two grubs; laboratory Sciences (123) and other fields (anesthesiology 68 and radiology 130) were selected using stratified random samples. Tool collecting has been questionnaire that after the interview with the students presence completed and then by the spss software analyzed. Results: This study showed that 71% laboratory sciences students and, 79% of others fields students did not participate in the research workshops. The number of researcher students in laboratory sciences field was 28% and in other fields was 33%. Identified challenges include limited resources, lack of awareness of the possible improvement by the research, lack of enough academic members cooperation and available risks in some tests like contamination with microorganisms and so on. Conclusion: The priority challenges identified by laboratory science students varied with other fields. The main problem is the lack of sufficient cooperation experienced researchers and academic members in this field [78 (63%).In other fields the identified main challenges were the lack of adequate facilities, risks associated with tests respectively. Given the importance of the clinical laboratory and its role in health promotion and according to our results, careful planning will be need to overcome challenges in the research by authorities.

Keywords: Laboratory, Challenges, Research, Tabriz

O5

Study Challenges and Requirements in Lab Sciences Field from the View of Experts Working in Lab

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Introduction: The present study aimed to evaluate the study barriers and challenges from the view of lab experts working in Medical sciences University hospitals of Tabriz. Method: The study is applied, descriptive-survey. The study population is 50 lab experts. A survey is performed among 11 state hospitals in Tabriz by stratified sampling method. The study measure is researcher-built questionnaire including 36 questions with four-item Likert scale in six fields of strategic, educational, financial, professional, scientific and individual barriers. Three main questions are considered: 1) According to the views of experts, which of six barriers are effective on research activities? 2) Is type of attitude of experts regarding six barriers effective on their research activities? 3) Is there any significant difference between the views of experts based on gender, experience, service location and income level? Results: Based on the results, all barriers in research activities are supported from the view of lab experts. The financial barriers have the highest and professional barriers as lowest mean and the attitude of experts regarding the barriers was effective on their research activities. Educational dimension (inadequacy of education) had the highest effect. Also, there was a significant difference between the views of experts to gender and income. There was no difference regarding experience and service location. The linear combination between the dependent and independent variables and qualitative and quantitative analysis of linear combinations showed that six barriers were effective on research activities via "humanistic attitudes and relations" and "research competence". Discussion: It seems that the highest barriers are based on scientific, humanistic relations and attitudes. Thus, eliminating the barriers of study in University is mostly affected by training and scientific empowerment, norms and modification of attitudes and improvement of human relations in individual level, university and surrounding factors of University.

Keywords: Challeng, Laboratory Sciences

O6

Two Common Errors in Data Analysis

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Two common errors in data analysis 1.Analyzing whole data and not considering subgroups Sometimes there is a relationship between X and Y in the layers of third variable. By analyzing whole data and not considering the subgroups, we conclude that there is not relationship between X and Y. 2. Using paired t-test or correlation instead of Bland-Altman Plot in assessing of agreement of a continues variable which measured by two different methods Researchers in medical sciences are familiar with agreement statistic for dichotomous variable, Kappa. But for agreement of a continues variable which measured by two different methods, they are unfamiliar with Bland-Altman Plot, so they often use paired t-test or correlation instead of it. The aim of this presentation is to provide introduction into these two data analysis errors with hypothetical data.

Keywords: Errors, Data Analysis, Paired T-Test, Bland-Altman Plot

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O7

Researches Based on Laboratory Findings

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The importance of research in all the different areas of knowledge, in particular, biological, medical and clinical sciences, is an unquestionable matter for everyone nowadays, and all the constant advances made in different fields of science owe to the studies that have been conducted for as long as history. Learning about the principles of research and methodology, finding and collecting data in line with the research objectives and making statistical inferences based on them, and ultimately writing and presenting them to the scientific community through papers, posters and seminars is an obligation of all medical professionals. However, clinical diagnostic laboratories contain a wealth of raw data from patients that can be extracted, analyzed and used to conduct various studies in different clinical, basic, and health areas, and particularly to improve laboratory techniques, provided that research strategies are well clarified. Just as it is difficult for pure gold to be extracted from the impurities of the mine, there are also many challenges in adopting a research approach based on laboratory resources that need to be examined: 1- Method of collecting the data and examining the relationship between raw laboratory data and data extracted from the patients. 2- Errors in collecting and receiving data and the importance of knowledge of their causes and of manners of their resolving. 3- The issue of samples taken from the patients and their storage for later use, and the legal and ethical challenges they pose. 4-The issue of IT application in laboratory research and the development of a software that can extract and analyze the data or integrate data from different laboratories at a more macro level. The development of such software leads to the qualitative and quantitative improvement of research in medical sciences through: A) Enabling quick and easy access to patients' records B) Allowing the selection of patients according to the topic of research C) Increasing data rigor and accuracy in patients' records and thereby increasing the rigor of research results D) Allowing the researcher to observe the variety of tests performed on patients E) Reducing the costs of research This software should have at least the following features and capabilities: a) Ability to collect specific data associated with a particular disease b) Ability to display the prevalence and incidence of a particular disease at a certain point in time c) Ability to classify laboratory findings by age, gender, race and biogeographical position or particular diseases d) Transferability of findings from the laboratory management software to a research software or a statistical software such as the SPSS e) Ability to integrate data from multiple laboratory software f) Network access to research software at the macro-level as the main national planning instrument in health and medical education The majority of the software developed in Iran has been designed according to the client's demands and not based on a rational, systematic, holistic approach. They are therefore not compatible with each other, being developed for different clients, and establishing a link between them in a network environment is extremely costly and difficult. Given the increasing need nowadays for sharing clinical, paraclinical and administrative hospital data, adopting international standards seems essential. The aggregation and collaboration of a task force comprised of clinical, basic sciences, laboratory, statistics and software specialists can help overcome these challenges in this or future conventions or seminars and open up new horizons through the development of laboratory-based research strategies and the presentation of successful studies in the field.

Keywords: Researches, Laboratory Tests, Strategies, Challanges, Softwares

O8

Detection of Analytical Step Errors and Improving Related Problems in Clinical Laboratories

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Testing processes in a clinical laboratory are divided into 3 steps; pre-analytical, analytical and post analytical. In clinical laboratories most of the errors occur in the pre or post analytical steps, whereas minor errors occur in the analytical step. Laboratory instruments, improper reagents or analytical procedure inaccuracy are common examples of possible random and systematic errors. Therefore, it is important to have deep knowledge about the kind of errors and ways of the problem solving in clinical laboratories. The basic theory of problem solving, is to start with general problems and then focus on more specific problems. Furthermore, to reduce these errors, conducting practical courses under supervision of the laboratory professionals are recommended.

Keywords: Analytical, Errors, Improving

O9

Good Clinical Laboratory Data in Clinical Trials

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The GCLP standards were developed to bring together multiple guidance and regulatory information, as they apply to clinical research and to fill a void of a single GCLP reference for global clinical research laboratories with regard to laboratories that support clinical trials such as those that perform protocol-mandated safety assays, process blood, and perform immune monitoring assays for candidates on a product licensure pathway. To maintain a GCLP environment for a clinical trial it is critical that all of the key GCLP elements are in place and operational. These elements include organization and personnel, testing facilities, appropriately validated assays, relevant positive and negative controls for the assays, a system for recording, reporting and archiving data, a safety program tailored to personnel working in the laboratory, an information management system that encompasses specimen receipt/acceptance, storage, retrieval and shipping and an overall quality management plan. The most appropriate way to ensure compliance with GCLP guidance is to audit laboratories. Because key decisions regarding the advancement of products are based on laboratory-generated data obtained from specimens collected during the trials, GCLP compliance is critical. Such compliance will assist laboratories in ensuring, accurate, precise, reproducible data are produced that guarantee sponsor confidence, and stand under regulatory agency review.

Keywords: GCLP=Good Clinical Laboratory Practice

Iranian Association of Clinical Laboratory Doctors

Challenges of Thyroid Function Tests O10 - O12

Thyroid function tests are of the most requested tests that are used for screening of thyroid function in various diseases especially thyroid disorders, and also monitoring treatments of thyroid diseases.

Fortunately, in the majority of cases no problem arises in the interpretation of results. It means that responses are consistent with each other and also with the patient's clinical status. However, sometimes challenges and problems are encountered inthyroid function tests interpretation that require a systematic approach to solve the problems.

In the standard approach,clinical issues, patient's history, possible errors in the laboratory and also the consideration of rare cases should be revised respectively, to achieve optimal results.

In this topic, it will be tried to evaluate the challenging itemsin thyroid function testsby inviting distinguished internal and external professors. In addition, systematic and standard approaches to deal with these challenges will be discussed and scrutinized.

Dr. M. R. Bakhtiari, DCLS, PhD

O10

Standardization Challenges in Measuring TSH

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Human Thyroid Stimulating Hormone (hTSH) is a 28-to 30-kDa heterodimeric glycosylated peptide synthesized and secreted from thyrotrophs (basophile cells) of the anterior pituitary gland. Its major role is to regulate the growth and function of thyroid gland.Variations in N-terminal oligosaccharide structures ofboth alpha and beta subunits of TSH generate a mixture of circulating isoforms (glycoforms), characterizing some of the physiological heterogeneities of this hormone, including its half-life in blood. The precise and accurate determination of TSH in clinical laboratories is of great importance for proper diagnosis and management of thyroid dysfunctions.In recent years, one of the main goals of lab experts has been to provide consistency and equivalence in testing of analytes in body fluids, including TSH. Measurement standardization is only achievable when comparable results among different laboratories using dissimilar procedures are based on a calibration system fully traceable to SI units. This requires reference measurement procedures (RMPs) and certified reference materials (CRMs). There are a lot of standardization problems and challenges for some hormones including TSH; these in addition to alternative strategies will be discussed during the lecture.

Keywords: Standardization, TSH, Thyroid

O11

Subclinical Thyroid Dysfunction

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Concepts. Subclinical hypothyroidism (SCHypo) and subclinical hyperthyroidism (SCHyper) are biochemically defined conditions: TSH above the upper normal limit and TSH below the lower normal limit respectively, in the presence of normal FT4 and T3 serum concentrations. But what is normal? The common TSH reference interval is 0.4-4.0 mU/L, but advancing age is associated with a steady rise of TSH. Moreover, there is a wide variation in the setpoint of the hypothalamus-pituitary-thyroid axis between individuals. Large intra- and inter- individual variations of TSH hampers overall application of the common TSH reference interval. Prevalence and incidence of adverse health outcomes associated with SCHypo and SCHyper are calculated taking into account the boundaries of the TSH reference interval. This might be conceptually inappropriate as the risk for a number of these adverse health outcomes continues to values within the TSH (or FT4) reference range. SCHypo and SCHyper should be considered as risk factors for particular health outcomes, and the decision to treat or not to treat should be taken in the context of other risk factors. SCHypo has a prevalence of 5-10% in the general population; it is more common in women than in men, and becomes more frequent with advancing age. Spontaneous normalization of TSH occurs in about 35%, (rarely at TSH >10 mU/L), and progression to overt hypothyroidism is about 2% (mainly at TSH >10 mU/L). Individual participant data analyses from a number of prospective cohort studies have demonstrated associations between SCHypo and risk of coronary heart disese and heart failure; there is a dose-response relationship between TSH and the risk, highest risks being associated with TSH >10 mU/L. The risk of ischemic heart disease was observed in subjects <65 yr, but not in older subjects. SCHypo in the oldest old seems to have survival value. Randomized clinical trials performed so far have shown some benefit of L-T4 treatment in terms of improvement of serum lipids and left ventricular function, but not of cardiovascular morbidity or mortality, quality-of-life and symptoms; their meaningfulness is limited by too small sample size and too short duration. Management of SCHypo: 1. Repeat TSH and FT4 after 3-6 months. 2. TSH ≥10 mU/L: treat with L-T4. 3. TSH <10 mU/L, age ≥70 yr: don't treat. 4. TSH <10 mU/L, age <70 yr, no risk factors: don't treat. 5. TSH <10 mU/L, age <70 yr, risk factors present: consider L-T4. SCHyper has a prevalence of 0.7-3.2% in the general population; it is more common in women than in men, and becomes more frequent with advancing age. Spontaneous normalization of TSH occurs in about 24% (less frequent at TSH <0.1 mU/L), and progression to overt hyperthyroidism in about 3% (mainly at TSH <0.1 mU/L). Individual participant data analyses from a number of prospective studies have demonstrated associations between SCHyper and risk of atrial fibrillation and heart failure, highest risks being associated with TSH <0.1 mU/L. There is no association with stroke and a disputed association with fractures. Management of SCHyper: 1. Repeat TSH and FT4 after 3-6 month. 2. Thyroid disease absent: don't treat. 3. Thyroid disease present, TSH <0.1 mU/L: treat. 4. Thyroid disease present, TSH 0.1-0.39 mU/L, risk factors absent: don't treat. 5. Thyroid disease present, TSH 0.1-0.39 mU/L, risk factors present: consider treatment.

O12

Challenges of Free Thyroid Hormones Assay

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Thyroid disorders are the most common endocrine disorders, so early diagnosis and treatment of these disorders is very important. Early detection of the disease depends on a proper measurement of thyroid stimulating hormone (TSH) and free thyroid hormones are possible. Replacement of free thyroid hormones assay instead of total thyroid hormones determination and estimating the binding proteins has been faced with different challenges. Generally, for the purpose of free hormone assays, direct and indirect methods are used. Indirect methods can only be an estimation of the amount of free thyroid hormone level. The direct methods, with or without physical separation of the thyroid binding proteins, are a better approximation of the amount of free hormones. It is still controversy over whether the values of these methods are properly refluxing of free hormones in serum? Clinicians and para clinicians must be aware about the limitations, validity and normal range of these methods. Recently reference methods have been developed to improve the clinical validity of free thyroid hormone assays. In this presentation, we will cover the latest achievements in this field.

Keywords: Free Thyroxine, Direct Method, Indirect Method, Equilibrium Dialysis, Ultrafiltration, TSH

O12/1

Diagnosis of Hypothyroidism

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Hypothyroidism is a pathological condition in which there is an insufficient production of thyroid hormones. Primary hypothyroidism caused by underactivity of the thyroid gland accounts for perhaps 99%of cases of hypothyroidism. Central hypothyroidism is characterized by low thyroid hormone levels and inappropriately low-normal or slightly elevated serum TSH. It is estimated that less than1%of cases of hypothyroidism are due to TSH deficiency. Overt hypothyroidism is a clinical condition and can be suspected in the presence of specific symptoms of thyroid hormone deficiency. However, the onset of clinical symptoms in hypothyroid patients may be influenced by the severity of the disease, duration, age, and the individual sensitivity to thyroid hormone deficiency. Elderly patients with thyroid hormone deficiency may be minimally or completely asymptomatic. Serum TSH is the first-line diagnostic test for the identification of thyroid hormone deficiency, even in patients with mild thyroid hormone deficiency. Elevated serum TSH and decreased FT4 levels represent the classical combination indicating primary hypothyroidism. Elevated serum TSH and normal FT4 indicates subclinical hypothyroidism. The diagnosis of thyroid hormone deficiency in pregnancy can be difficult. If trimester-specific reference ranges for TSH are not available in the laboratory, the following reference ranges are recommended: 0.1 to 2.5 mU/L in the first trimester, 0.2 to 3.0 mU/L in the second trimester, and 0.3 to 3.0mU/Lin the third trimester.

Keywords: Hypothyroidism, TSH, Diagnosis

Iranian Association of Clinical Laboratory Doctors

Human Resource Management in Medical Labs O13 - O17

The laboratory staff is a critical resource. Orientation and training will improve performance so Assessment and documentation of staff competency is a necessity

Competent employees are essential for achieving accurate and reliable test results.

Revolution of management systems occurs only by human resources not by the machines & equipments so no company can purchase a method to achieve the quality

The cause of insufficiency and poor quality of ultimate process is the system, not the staff

The duty of management is, to correct the system and to achieve the desired results

Remember that the highest potency of an organization is potency of the weakest person of that organization as most strong chain will be thorn in its weakest ring .so promotion of staff's merit & competency is one of the most serious duties of management's domain.

This panel ,describes the Role & responsibility of laboratory management in the following axes

1- Management of Employment interview & selection process

2- Human resource management based on ISO15189 requirments

3- Unit work load management

4- PDP planning, implementation & monitoring in medical labs

5- Implementation of one program in medical labs for revising & comparing of skills of staffs

6- role of lab management in preparing of necessary documents of laboratory staffs in field of training & competency assessments

7- Potential resources of staff's practical problems recognition & management of errors

Dr. M. Vanaki, DCLS

O13

Selection, Evaluation and Discipline of Med Lab Staff

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Selection of staff is on of the most important fact in any professional colaboration. High performance and speciality is the main criteria of employment. The employe must be familiar with the goals of organization. Manager should employ clever staffs. Interview is the main tool in selection of staffs, should perform as individual or by group. The right selection of staffs is very important in scaledown of costs. The managers have to get the history of employe. Mostly all employe know how to complete the history of themselves the other tool for selection of staffs is jobdescription & goals of organization, which the employe should may attention. The knowledge of staff evaluation is one of the most important activity of a judicious manager. He should teache the tools of evaluation to staffs. The employe in first daye of employment should know that from the start of activity in the organization, he is under the evaluation of his activity. Manager have to know the personal & thin needs. Motivation & change of work shifts might be a very important decision of manager. The employees should know for the progress in their jobs have to be very active they have to know the way of progress in their activity in organization. In the panel we have to describe these subjects.

Keywords: Selection, Staff, Motivation

O14

PDP Planning, Installing and Control

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PDP is a useful technique for human resources, students or people as a whole to promote their knowledge, skills or abilities to expand achievable opportunities and effectively deal with external threats. This technique can also help a person to develop a clear idea about what he/she wants to achieve in future in the context of career, education or even personal life, based on being familiarized with his/her strengths and weaknesses. In fact PDP is a continuous process of identifying career, educational or personal improvement objectives and plan for their achievements. To conduct a successful PDP it is required to first identify meaningful goals. Then it's the time to assess the requisites of gaining them and identify probable gaps in the knowledge, skills or capabilities to do so. Now a person is ready to plan for his development and cover the existing gaps. It is noteworthy that evaluating the progress of the plan can widely help the successfulness of the program. Leaving the plan after a short time reduces its effectiveness. In fact, considering PDP as an objective oriented, result based and participatory process is essential to help a person or organization achieve their goals and missions.

Keywords: HRM, Education, Competence, Assessment, Personal

O15

Human Resource Management Based on ISO15189

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ISO: 15189:2012 "Medical laboratories-particular requirements for quality and competence" does not require anything that is not really justified to ascertain constant quality in your laboratory. It helps to remind which items have to be addressed. Concerning quality of equipment, methods and quality control you are accustomed to put the requirements on paper and to record the results. Concerning the persons who work in your laboratory, the same applies. It involves as well you as director of the laboratory. In the management part of ISO15189, chapter 4, you find some general items concerning ethical conduct (confidence of patient results and freedom from undue pressure), the general qualifications of the laboratory director and the quality officer, including their specific responsibilities and obligations, and various demands concerning communication, and the need of users. A specific part handles the consultative function, which stresses that the laboratory is not just producing numbers. In the technical part of ISO15189, you find more specific details in chapter 5.1. Reading the subsections about qualifications, job description, introduction, training, competence assessment, review of performance, continuous education, and records, you will probably have the idea that most aspects are already handled. However, I am not so sure that in your laboratory all these aspects are documented and the results are recorded. For instance is the competence of every person who performs a test recorded, not just the qualifications, but as well the results of the training. This is not just an administrative burden to satisfy the assessors during an accreditation visit. It is important for being sure yourself about having the management system in order. Also your internal auditors have to be qualified. An important factor in your human resource management is to establish a quality culture in the laboratory. Quality involves not just the management and quality officer, it involves all employees. Your clients primarily will be confronted with the persons who do the sampling, and the results are performed by the technicians. They have to take care about reporting critical results, doing the tests within the defined time limits and taking care about the internal quality control. To achieve that they work according the latest Standard Operating Procedures, you must have your communication process in order. For continuous improvement and performing risk analysis you need involved employees. For consequent updating and recording of all aspects in your laboratory you have to convince all employees about the importance to have your quality management system constantly in order. Quality is a lack of variation.

Keywords: Resource

O16

Workload Unit and Laboratory Productivity

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Staffing a laboratory is a common challenge—and frustration—that many managers and supervisors face in today's environment of shrinking resources. Add a rapidly growing outreach business volume to the mix and the task can become daunting. While matching staff to workload appears to be common sense, unfortunately it is not always common practice. The single item that impacts the cost per test the most is the price of labor. Labor costs go beyond the "paycheck" to include the value of benefits, such as vacation pay and insurance, along with the cost of recruiting employees, training them, and expenses associated with termination of employment. Management of labor costs impacts not only institutional finances, but quality of service as well. One means of monitoring labor costs has been measuring laboratory productivity. Productivity is a measure of the amount of work produced within a given time frame, often minutes or hours. Expressed as a calculation, Productivity = total work / time Evaluating productivity allows you to achieve the five "rights" of optimizing labor: the right number of FTEs with the right skills working the right schedule doing the right processes in the right way.

Keywords: Workload Measurement, Unit Values, Medical Laboratories, Productivity

O17

Relationship of CRM in Medical Labs

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Loyal and stable customers (including local and foreign customers) are the most important element of every successful organization; In fact, without customers, there exists no organization. The laboratory management including the reception and result delivery sections as well as supervisor and technical person in charge of the laboratory must direct their beliefs and looks towards the fact that failure to meet the customer orientation requirements is a small or big noncompliance (failure to meet a requirement in the area of customer respect) and they must have a scientific approach according to the volume and intensity of the corresponding error or noncompliance, and finally by making a root cause analysis, and taking corrective action, they must seek the reduction of the following repeated noncompliances so that the employees of this area, through increasing the level of sensitivity and improving their performance, will improve and develop the system. Below are some examples of matters of noncompliance in the area of CRM in clinical laboratories: 1- Improper behavior of the personnel with clientele for tampered-with prescriptions; 2- when the clientele's test result paper is not ready in specified time and according to the test delivery date; 3- When the patient's emergency test results are not ready in the promised time; 4- Initial improper behavior of the personnel with the customers in the reception desk; 5- Prolonged reception process of customers and the patient's dissatisfaction from the waste of time and money; 6- violating the privacy of customers by the laboratory's staff; 7- Failure to present oral explanations to the patients with respect to the preparation conditions; 8- Failure to observe economic considerations for some poor customers; 9- Inappropriate physical atmosphere, installations and welfare facilities for customers; 10- Verbal discussion and arguments of the personnel with the laboratory's customers in the reception desk;

Keywords: Referring and Referral Laboratory

Iranian Association of Clinical Laboratory Doctors

Laboratory and Chronic Kidney Diseases O18 - O20

Chronic Renal Disease (CKD) is a clinical syndrome that occures when there is a gradual decline in renal function over time. This situation can lead to End Stage Renal Disease (ESRD), bone complications, and coronary vascular disease. It is estimated about 10% of population are affected by this syndrome. There is an increasing incidence of CKD due to the increase of diabetes, obesity, and metabolic syndrome. Early detection and treatment of CKD are needed to prevent progression of this syndrome. On the basis of glomerular filtration rate (GFR), chronic renal disease is classified in five stages. GFR determination is primarily on the basis of measuring serum creatinine and determination of creatinine clearance and estimated GFR (eGFR). However, measuring other serum analytes, including cyctatin C can be also useful. Thus, clinical laboratories have critical roles in screening, diagnosis, and monitoring of CKD.

Dr. R. Mohammadi, DCLS, PhD

O18

Comparison of Estimated Glomerular Filtration Rate (eGFR) among Three Formulas

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Introduction: Chronic kidney disease (CKD) is a significant public health problem. There is progressive loss of renal function in CKD. Early identification and management of these patients may delay the progression of renal disease. Measuring glomrular filtration rate (GFR) is widely accepted as the best overall index of kidney function and classification of CKD is on the basis of quantifying GFR. The most common method for assessing GFR is evaluation of creatinine clearance which has limitation. For this, several formulas have been created to estimate GFR from plasma or serum level of creatinine. In this study we compared in Iran results of three common eGFR equations. Material and Methods: This is a retrospective study on a total 559 outpatients attending Masoud laboratory between Jully and September 2012. Creatinine clearance was calculated according to serum creatinine, 24h urine creatinine, weight and height. eGFRs calculated by Cockcroft-Gult (CG), Modification of Diet in Renal Disease (MDRD). And Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) formulas. Results: The mean of creatinine clearance and eGFRs calculated by GC, MDRD, and CKD-EPI were 71.6, 77.4, 64.6, and 66.3 mL/min, respectively. There was significant correlation between creatinine clearance results and CG (r = 0.66), MDRD (r = 0.73), and CKD-EPI (r = 0.72). Conclusion: Using eGFR is recommended for screening of CKD in general populatin. MDRD results had better correlation with cratinine clearance.

Keywords: Chronic Kidney Disease, Creatinine Clearance, Glomerular Filtration Rate, eGFR

O19

Chronic paranchimal kidney Disease (CKD)

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It is clear that the number of patients with CKD increasing annually, especially among old people 70% of over 70 years old. In the last 2 decades, there was no accurate studies about this sickness judge accurately about the expand and risk of this disease. Up to 2003 only %22 of diabetic and %28 peaple with high blood prosser were under investigation for Creatinine serum level in the USA but unfortunately they did not check for CKD disease. The same way, first degree relatives of patients did not pay attention of CKD patients in their family. CKD has 5steps (1-5). Therefore in early diagnosis could decrease the speed of this sickness and prevent heart diseases, early death and heart attack. Early diagnosis of CKD also prevents death by using blood dialysis and kidney transplantation.The number of survival of CKD patients that went kidney transplantation and dialysis was 357 in a million. Also the number of end stage patients are 64 per million (1376). Treatments of these patients are very expensive, for example, the cost of dialysis of one patient in a year is around 65 million Tumans. The reason for this high expenses are cost of new dialysis instrument, new medication like vitamin D and Erythropoietin drugs and etc. the cost of this treatment is $102000 per pation. Regarding to this high and expensive treatment of CKD patients, we have tried to diagnose and treat the patients in early stage.

O20

Comparative Study on Glomerular Filtration Rate Estimated by Employting Cystatin-c and with Serum Creatinine in Patients with Constant Renal Failure AFTER Renal Transplantation in Ahvaz City

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Background: Accurate measurement of Glomerular Filtration Rate (GFR) is critical for the evaluation of new therapies and the care of renal transplant recipients (RTR). In RTR, often GFR estimated using creatinine -based equation that does not accurately. Serum Cystatin C is more sensitive for GFR measurement that seems to be more accurate than creatinine. Regarding the importance of accurate estimation of GFR in kidney transplant recipients, compared Cystatin C-based equations ,creatinine-based formulas and combination of creatinine and cystatin c equations to estimate GFR with GFR obtained using radiolabeled diethylene triamine pentaacetic acid (TC99m-DTPA). Material and Methods: We measured TC 99m –DTPA GFR, cystatin c and creatinine in 65 stable Renal Transplant Recipients. GFR was estimated using 6 creatinine -based equations, 12 Cystatin C-based equations and 10 combination of Creatinine and Cystatin C-based equations and the results were analyzed and the Bias and Precision of each equation were determined. Results: The relationship between serum Cystatin c and Creatinine showed a positive correlation (r=0/77). Cystatin c correlated best with GFR (r=-0/732), wherease serum Creatinine (r=-0/719) lower correlation coefficient .The serum Cystatin c equations (FillerLepage and Le Bricon) had the lowest Bias (-4/74 and -5/36 ml/min per 1.73 m2), imprecision (17/89 and 14/67 ml/min per 1.73 m2) and then combination of creatinine and cystatin C-based equations (Mean CG& FillerLepage and Mean CG &Le Bricon) had the lowest Bias (-5/69 and -5/8ml/min per 1.73 m2), imprecision (15/3 and 14/26ml/min per 1.73 m2), respectively. Conclusions: Cystatin C measurements have reliable analytical performance. The use of serum Cystatin C - equation could improve the accuracy of eGFR algorithms in RTR and these equations alone are more accurate at predicting GFR in RTR than traditional creatinine based equations. To determine whether Cystatin C– based estimates of GFR in combination with creatinine will be sufficiently accurate to monitor long-term allograft function, Further prospective studies with repetitive measurement of Cystatin C are needed.

Keywords: Creatinine, Cystatin C, Renal Transplantation, Glomerular Filtration Rate, Prediction Equations, Tc99m-DTPA Clearance

Iranian Association of Clinical Laboratory Doctors

Laboratory and Diabetes Mellitus O21 - O25

1. GLUCOSE

a. When glucose is used to establish the diagnosis of diabetes, it should be measured in venous plasma.
b. When glucose is used for screening of high-risk individuals, it should be measured in venous plasma.
c. Blood for fasting plasma glucose analysis should be drawn in the morning after the individual has fasted overnight (at least 8 h).
d. To minimize glycolysis, one should place the sample tube immediately in an ice–water slurry, and plasma should be separated from the cells within 30 min. If that cannot be achieved, a tube containing a rapidly effective glycolysis inhibitor, such as citrate buffer, should be used for collecting the sample. Tubes with only enolase inhibitors, such as sodium fluoride, should not be relied on to prevent glycolysis.
e. On the basis of biological variation, glucose measurement should have an analytical imprecision 2.9%, a bias 2.2%, and a total error 6.9%. To avoid misclassification of patients, the goal for glucose analysis should be to minimize total analytical error, and methods should be without measurable bias.

Hb A1c

a. Hb A1c should be measured routinely in all patients with diabetes mellitus to document their degree of glycemic control.
b. Laboratories should use only Hb A1c assay methods that are certified by the National Glycohemoglobin Standardization Program (NGSP) as traceable to the DCCT reference. The manufacturers of Hb A1c assays should also show traceability to the IFCC reference method.
c. Laboratories that measure Hb A1c should participate in a proficiency-testing program, such as the College of American Pathologists (CAP) Hb A1c survey, that uses fresh blood samples with targets set by the NGSP Laboratory Network.
d. Laboratories should be aware of potential interferences, including hemoglobinopathies, that may affect Hb A1c test results, depending on the method used. In selecting assay methods, laboratories should consider the potential for interferences in their particular patient population. In addition, disorders that affect erythrocyte turnover may cause spurious results, regardless of the method used.
e. Desirable specifications for Hb A1c measurement are an intralaboratory CV 2% and an interlaboratory CV 3.5%. At least 2 control materials with different mean values should be analyzed as an independent measure of assay performance.
f. Samples with Hb A1c results below the lower limit of the reference interval or 15% Hb A1c should be verified by repeat testing.
g. Hb A1c values that are inconsistent with the clinical presentation should be investigated further.
i. Hb A1c testing should be performed at least biannually in all patients and quarterly for patients whose therapy has changed or who are not meeting treatment goals.
j. Hb A1c may be used for the diagnosis of diabetes, with values 6.5% being diagnostic. An NGSP certified method should be performed in an accredited laboratory. Analogous to its use in the management of diabetes, factors that interfere with or adversely affect the Hb A1c assay will preclude its use in diagnosis.

Dr. A. Esteghamati, MD

O21

HbA1c Measurment: Comparison of Results of Five Commonly Kits in Iran

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Introduction: Results of HbA1c measuring is used in diagnosis and managing diabetic patients. So agreement between results of different HbA1c measuring methods and kits is critical in medical decision making. Material and Methods: Results of measring HbA1c of 55 patient blood samples with five commonly used kits in Iran, including Pars Azmon, Pishtaz Teb, Biosystem, Roche, and NycoCard, compared with total means. Results: All kit results showed good correlation (r>0.96) with total mean results. In paired t-test analysis, results of Pars Azmon, Biosystem, and NycoCard had no statistically significant difference with total mean results, but results of Pishtaz Teb and Roche kits were significantly lower and higher than total mean results. However, this differences were clinically insignificant. Discussion: With respect to results of external quality assessment program (EQAP) in Iran and results of this study, analytical performance of studied kits are acceptable, except for Roche kit which had a positive bias.

Keywords: HbA1c, HbA1c kit

O22

Effects of Analytical Goals on Evaluating Performance of HbA1c Measuring Method

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Background:HbA1c test plays a critical role in the monitoring and diagnosis of diabetes. So, it is essential that its clinical use be supported by standardized results, i.e., accurate and equivalent among different commercial methods and clinical laboratories using them. It is the responsibility of clinical laboratories to continuously monitor the performance of commercial methods in use, both by the implementation of a proper internal quality control (IQC) and participation in appropriately organized external quality assessment schemes (EQAS). Efficieny of both of IQC and EQA is strongly affected by selected analytical goals. MATERRIAL AND METHODS:During eighteenth and nineteenth runs of external quality assessment program (EQAP), in Jully 2014 and November 2014, twofreshly prepared commutable patient QC samples were sended to 650 and 858 laboratories which used five commonly used HbA1c kits. Target values for total group and also for peergroups were calculated. Performance of each laboratory was determined according to different suggested allowable total errors (ATE), including ±6%, ±7%, and ±10%. Laboratory performance was also evaluated according to standard deviation interval (SDI) and SDI more than 2 was considered as unacceptable result. RESULTS:when we used SDI for evaluating HbA1c method performance, about 11% and 9% of participant laboratories had unacceptable performance during EQAP-18 and EQAP-19. respectively. But when this evalution was performed according to ATEs of ±6%, ±7%, and ±10%, unacceptable results increased significantly to 50%, 49%, and 35% in EQAP-18 and 55%, 48%, and 32% in EQAP-19, respectively. CONCLUSION: Using improper analytical goals leads to misinterpretation of IQC and EQA results. Analytical goals must be defined in a such way that the test could save its clinical usefullness. National Glycohemoglobin Standardization Program (NGSP) and College of American Pathologists (CAP) seggest ATEs of ±6% and ±7% for HbA1c methods.

Keywords: HbA1c, External quality assessment, Total Allowable Error

O23

Immunopathology of Type 1 Diabetes

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Type 1 diabetes (T1D) is an autoimmune disorder of children and young adults characterized by T cell destruction of pancreatic islet beta cells. Almost every immune cell type, including macrophages, B cells, natural killer (NK) cells and (natural killer T) NKT cells has been implicated in the pathogenesis of disease, with final destruction of islets being ascribed to autoimmune recognition of beta cells by CD4+ and CD8+ T cells combined with an unexplained loss to T regulatory (Treg) cell function. We have shown that in children with recent onset T1D, a subset of CD4+ Treg cells secretes increased amounts of the pro-inflammatory cytokine IL-17. These observations suggest that antigen-specific Treg cells which recognize beta cells may convert from a tolerizing phenotype to an inflammatory and destructive phenotype. These findings additionally suggest that inhibition of IL-17 may have beneficial effects for the prevention or therapy of T1D, and we are testing this hypothesis in a clinical trial.

O24

Lipid Disorders in Diabetes Mellitus

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Cardiovascular disease (CVD) is the leading cause of death in both men and women in the United States, claiming almost a million lives annually. Coronary heart disease (CHD) is caused by atherosclerotic narrowing of the coronary arteries. Although the death rate for CVD has declined significantly over the years in Western countries, the rates are increasing in many developing countries.Evidence has shown that lifestyles associated with a western culture, such as a diet rich in saturated fats and high in calories, smoking, and physical inactivity, are some of the modifiable risk factors leading to an increase in the prevalence of CV events. Smoking is responsible for 50% of all avoidable deaths, half of which are due to CVD. Dyslipidemia—in particular, raised low-density lipoprotein (LDL) cholesterol and triglyceride levels, and low high-density lipoprotein (HDL) cholesterol—is associated with increased risk of CHD. The National Cholesterol Education Program Adult Treatment Panel guidelines have established LDL-C treatment goals, and secondary non-high-density lipoprotein (HDL)-C treatment goals for persons with hypertriglyceridemia. The use of lipid-lowering therapies, particularly statins, to achieve these goals has reduced cardiovascular disease (CVD) morbidity and mortality; however, significant residual risk for events remains. This, combined with the rising prevalence of obesity, which has shifted the risk profile of the population toward patients in whom LDL-C is less predictive of CVD events (metabolic syndrome, low HDL-C, elevated triglycerides), has increased interest in the clinical use of inflammatory and lipid biomarker assessments. An expert panel convened by the National Lipid Association has recently evaluated the use of selected biomarkers [C-reactive protein (CRP), lipoprotein-associated phospholipase A(2), apolipoprotein B (apoB), LDL particle concentration, lipoprotein(a), and LDL and HDL subfractions] to improve risk assessment, or to adjust therapy. These panel recommendations will be reviewed. Further emphasis will be given to important biomarkers including apoB and CRP. ApoBhas received considerable attention in recent years as a more superior CHD risk biomarker when compared to LDL-cholesterol. LDL particles are composed primarily of cholesterol and are the most atherogenic lipoproteins in plasma. ApoB measurement makes possible to count directly the number of LDL particles in plasma. Subjects with hypertriglyceridemia (such as diabetics) have higher apoB and smaller/denser LDL particles. In addition, CRP is now widely accepted as an important biomarker of subclinical inflammation. The association between CRP and cardiovascular risk has been consistently observed over a wide array of patient populations. However, there has been some controversy as the casual relationship between CRP and atherosclerosis. CRP may be a marker of inflammatory state in subjects with atherosclerosis and not directly involved in atherogenesis. The typical dyslipidemia of the insulin resistant state and type 2 diabetes (also referred to as 'diabetic dyslipidemia') is characterized by a cluster of quantitative and qualitative lipid and lipoprotein abnormalities. This includes increased plasma concentrations of fasting and postprandial apolipoprotein B (apoB)-containing triglyceride-rich lipoproteins (TRL), including very low-density lipoprotein (VLDL) and chylomicrons (CM). Also evident is reduced high-density lipoprotein (HDL) particle number and cholesterol content, as assessed by plasma apoA-I and HDL-C, respectively, and a predominance of small, dense LDL (sdLDL) particles. Altered metabolism of TRL, both overproduction and impaired clearance, is central to the pathophysiology of atherogenic dyslipidemia. In humans, there are significant correlations between fasting and postprandial TG concentrations, both of which are inversely correlated with HDL-C and apoA-I plasma concentrations, suggesting a close link between TRL and HDL metabolism. In fact, an elevated TG:HDL-C ratio may be the single most characteristic biomarker of the metabolic syndrome, even more predictive than the presence of abdominal obesity. Plasma LDL-C concentrations are similar to, or only modestly higher than, those in insulin sensitive, non-diabetic individuals. In subjects with the metabolic syndrome and/or T2D, the higher concentration of plasma TRL particles (referred to as increased TRL pool size) promotes exchange of neutral lipids, by mass action, between HDL and TRL. This leads to the formation of TG-rich HDL particles, which are more rapidly catabolised, and sdLDL particles, which are catabolised more slowly, than their normal counterparts. sdLDL are also considered more atherogenic. Therefore, abnormalities in TRL metabolism quantitatively and qualitatively affect the metabolism of both HDL and LDL, leading to increased plasma TRL remnants, low HDL and increased sdLDL, all of which are strongly associated with increased CVD risk.

O25

Diabetes and the Kidney: A Laboratory Approach

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Diabetes mellitus (DM) is the major cause of chronic kidney disease (CKD). In the United States of America more than 100,000 people are diagnosed annually with kidney failure, 44 percents of which due to diabetes mellitus. The pathologic impact of DM on the kidneys is called Diabetic Nephropathy (DN) initiating without any clinical symptoms. This means, DN may develop and progress in a diabetic patient for several years while completely undiagnosed.Early diagnosis and management of DN relies on clinical laboratory tests. There are a lot of laboratory tests as markers of chronic kidney disease based on traditional to more advanced methods such as molecular /proteomic ones. According to American Society of Nephrology (ASN), National Kidney Disease Education Program (NKDEP), and American Diabetes Association (ADA), the pivots of screening for CKDs, including DN, are two important tests, i.e. estimated Glomerular Filtration Rate (eGFR), and Urine Albumin.The eGFR should be calculated at least once a year in all people with diabetes from serum creatinine level and the patient age. Kidney disease is present when eGFR is less than 60 milliliters per minute.Annual assessment of urine albumin excretion to assess kidney damage has been recommended in all people with type 2 diabetes and people who have had type 1 diabetes for 5 years or more.Kidney disease is present when urine contains more than 30 milligrams of albumin per gram of creatinine, with or without decreased eGFR.

Keywords: Diabetic Nephropathy, Markers, eGFR, Urine Albumin

Iranian Association of Clinical Laboratory Doctors

Laboratory and Nosocomial Infections O26 - O28

Nosocomial infections are currently one of the most important problems in clinical centers. Considering the presence of 1000 laboratories in hospitals, attention to this matter and addressing the related diagnostic and clinical problems, are of great importance.

Recognition of the following items is of the most important questions in this regard:

Is what we report considered as nosocomial infection?

Are there reliable statistics on nosocomial infections in Iran? How are we compared to other countries?

What types of bacteria are the main causes of these infections and what antibiogram pattern do they obey?

What are the duties of medical center laboratories in the diagnosis of nosocomial infections?

Do the conventional methods of operating room culture, emphasized by Nosocomial Infections Control Committees, have scientific value?

The congress aims to reach a scientific and practical theory, using experienced instructor and colleague comments.

Dr. S. Mahdavi, DCLS

O26

Outbreak Investigation in Hospital Setting

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Each hospital face with multiple outbreaks of nosocomial infections. It's inevitable especially in educational hospital in which even 2 or 3 times incidences of such infections are not amazing. Nosocomial outbreaks may have concerning effect not only in terms of legal issues for physicians and nurses but also for other patients and can affect overall patient safety profile aspect of hospital. Before starting the investigation, it's important to confirm the presence of a true outbreak; To do this we need to check if following items are present ϖ National Healthcare Safety Network capability for definition of NI ϖ Having a predetermined level of NI for all wards as well as usual spectrum of organisms for them ϖ Four situation can be defined as outbreak: 1. Very unusual infection: strep A after surgery 2. Unusual organism causing multiple cases of NI 3. Unusual pattern of sensitivity by a usual organism causing multiple cases of NI 4. Infections in an identical anatomic site (diarrhea) Urgent holding of infection control committee is needed whenever an outbreak occurs. Active surveillance should be started by recording all lab & clinical details and coordination with physicians in charge is necessary for completion of investigation.In brief, following steps are needed: 1. Proposing a theory depending to organism or clinical syndrome 2. Need to consult (lab for homology.., other experts) 3. Need to culturing 4. Observation of behavior for personnel 5. Any change in admission rate or new personnel… 6. Case control study or cohort study might be needed Establishment of corrective measures (need to new plans or surveillance program) should be followed by Providing final report and further surveillance.

O27

The Role of Clinical Microbiology in Diagnosis and Prevention of Nosocomial Infections

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Nosocomial or Health care-associated infections (HAIs) are one of the most common complications of care, wich affecting 5 to 10% of patients admitted to hospitals worldwide. Clinical microbiology laboratory (CML) plays an important role in diagnosis and treatment of nosocomial infections. Some of the major roles carried out by the CML in infection control included contributions to (i) Drug resistance surveillance, (ii) outbreak investigation and management, (iii) antimicrobial stewardship, (iv) An active member of infection control committee, and (v) education. In each of these areas, the CML faces new challenges as it seeks to contribute fully to the urgent task of preventing HAIs. Drug resistance surveillance: Drug resistance surveillance is the major and most important role of the CML which include accurate detection of nosocomial pathogens and performance of antimicrobial susceptibility testing. Data collection including prevalence of nosocomial pathogens and their drug resistance patterns are necessary and voluble data for treatment and infection control. Outbreak detection and management: The CML has important roles to play in any potential outbreak situation, including early recognition of possible clusters and outbreaks, promptly notification and collaboration with infection control team, additional case finding, and provision of molecular typing such as Pulsed-field gel electrophoresis (PFGE), Restriction fragment length polymorphism (RFLP) for determination of relatedness and source of infection, which requires maintenance of an organism bank. The laboratory should also act in a consultative capacity with the infection control team to help determine whether an outbreak is "real" or a potential pseudo-outbreak due to contamination of specimens outside or within the laboratory. Antimicrobial stewardship: Every hospital must have an antimicrobial stewardship program, guidelines. Obtain of antimicrobial susceptibility data from the CML in a timely and efficient manner is one of the essential part of Antimicrobial stewardship. These data then have to be incorporated quickly into antimicrobial management. Infection control committee member: Clinical microbiologist participates on the infection prevention/control committee and acts as a consultant to infection prevention. Clinical microbiologist has experiences for interpretation of culture results, advice about the utility of microbiological approaches to an infection control problem. Clinical microbiologist should describe how changes in the methods used for detection, identification, and susceptibility testing of nosocomial pathogens will impact the infections control programs Education: CMLs also play an important role in the education of future hospital epidemiologists and infection control team. Most hospital epidemiologists are trained in infectious diseases through the clinical microbiologist and infectious disease physicians. Conclusion: The CML is an essential element of the Infection control team in every hospital and playing critical roles in surveillance, outbreak detection and management, antimicrobial stewardship, risk assessment, planning and education. Close collaboration between CML and infection control team is required to ensure optimal HAI prevention, which saves money and lives.

Keywords: Clinical Microbiology, Infection Control

O28

The Latest Situation of National Nosocomial Infections Surveillance System in Iran

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Introduction Since 2007 the national nosocomial infection surveillance program was established in Iran in 100 general hospitals based on National Nosocomial Infection Surveillance (NNIS) system definitions for four main groups of infections including urinary tract , pulmonary, blood stream and surgical site infections and then have been increased to 394 general hospitals. This report is reflected the latest situation of mentioned surveillance system during 2013. Methods From selected 394 hospitals with more than 200 beds, the nosocomial infection data have been reported to nosocomial infection control department in Center for Communicable Disease Control during 2013 and analyzed those using SPSS.16 software. Results During the study period 5705470 patients were hospitalized in 394 hospitals. A total number of 60532 patients got nosocomial infection according to NNIS definitions. The infection rate in 394 hospitals was 1.06%. The infection among males and 15-65 years old age group was more prevalent. Urinary tract infections (UTI) was the most common infection (26.9%) among reported cases, followed by pneumonia (PNEU, 24.5%), surgical site infections (SSI, 15.2%), blood stream infections (BSI, 14.2%) and others 19.2%. In transplant ward UTI, burn ward BSI and intensive care unit ward pneumonia had high rate. The nosocomial infections in transplant ward was more prevalent, followed by burn, intensive care units, hematology and oncology, pulmonary and kidney wards respectively. Among positive cultures the E.coli, Acinetobacter, Klebsiella and pseudomonas were the most important etiologic agents. The overall mortality rate among patients affected by nosocomial infections during 2013 was 8%. Conclusion The nosocomial infection surveillance system in Iran is a new program and the main weak point of the mentioned program is under -reporting which need educational interventions to change attitude of health workers and encourage them to detect, register and report nosocomial infection, thus authorities would be able to make evidence-based decisions.

Keywords: Nosocomial Infections, Nation Surveillance, Iran

Iranian Association of Clinical Laboratory Doctors

Laboratory and the Environment O29 - O31

One of today's most important challenges in managing urban environments is the massive generation of waste products, which has extremely affected the ecological standards and is also threatening the societies health. Laboratories waste materials aren't an exception in the matter and they even have more contamination risks than others. Research in reducing methods of laboratories waste products, amendment and improvement of the waste products in generational space (laboratory), recycling disposable lab facilities and equipments and establishing suitable and applicable to existing standards cases for production, transportation, preservation, filtration, annihilation of laboratory waste products and infected and non-infectious and prejudicial garbage, and also studying the effects of unsanitary paring of the mentioned materials contaminations can help a lot with the strategic management of ecological conditions improvement And prevention of critical terms.

In addition to previous subjects, in laboratory and environment panel the latest researches related to environmental contaminations effects (chemical, infectious, …) on the target groups such as children , pregnant women, cardiovascular and respiratory patients, …. Will be also disgusted.

Considering the direct connection between laboratory and human biological materials and chemicals nuclear and bacterial products which would cause serious and deathly damages if circulated in the environment, accomplishing immunization processes has great importance.

Dr. S. R. Seyed Javadin, DCLS

O29

Survey of Infectious and Biological Waste Management in laboratories of Rafsanjan University of Medical Sciences

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Background & Objective: Laboratories waste, one of the most important enviromental problem in developing countries that can lead to outbreak of diseases and epidemics.Planing of Laboeratory waste management is necessary to prevent waste from adversely affecting human and enviromental health. Present study aimed to survey the condition of management of mentioned waste in Rafsanjan University of medical Sciences. Materials and Methods: Study was conducted in seven laboratories that three of them were in the faculties and four units were in the hospitals of Rafsanjan University of Medical Sciences. In order to collection of required information, special check list was designed including 24 questions that after administrative coordination, visiting and interview the check was completed. Resultes: The obtained results indicate that 40% of Staff members involved in waste collection and transport should apply all personal protection measures and labeling of waste container for type of waste just done in6/28% of studied labs and in 1/57% of labs, there was not a list of chemical material that should not be mixed together during collection and disposal and only in3/14% of cases, the wastes are treated by autoclave. Conclusions: This study indicated that separation procedures of medical wastes were incomplete in Laboratories. In order to reduce these kinds of pollutants, shoulde be taken to deal with the pollutant at their source of generation.The Staff members involved in waste collection and transport should apply all personal protection measures.

Keywords: Infections Waste, Laboratory Waste, Medical Sciences University, Rafsanjan

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O30

Environmental Surveillance of Wild Type and Vaccine Derived Polioviruses, the Important Role of laboratory Surveillance in Post Eradication Strategies

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Introduction: OPV is used globally for more than 40 years with few adverse events. After initiation of polio eradication program in 1988, widespread use of OPV led to a marked decrease in poliomyelitis occurrence. It seems to be final steps in eradication strategy; however, presence of vaccine derived polioviruses has raised a concern regarding accessibility of predefined goals. Herein we reviewed manuscripts published in recent 10 years to define the important role of environmental surveillance in eradication of vaccine derived polioviruses. We also discuss current state of Iran and required infrastructures and programs in this purpose. Results: As of 2014, a lot of vaccine associated poliomyelitis cases and more than 20 community outbreaks of vaccine derived polioviruses have been documented. Only 3 countries: Afghanistan, Pakistan and Nigeria have never interrupted polio-transmission. Not any case of wild poliomyelitis has been reported in Iran since 2001; however, it has the highest number of vaccine-associated paralysis reports in immunodeficient patients. Vaccine derived polioviruses have been isolated from environment in several countries even without current OPV use. Some other studies reported neurovirulent vaccine strains in sewage for long time, but never could identify an individual case of vaccine paralysis or virus shedding; that represent the silent circulation and existence of these strains in the community. Conclusion: vaccine derived polioviruses may circulate in the community and contaminate environment and underground water through sewage or domestic waste water. As we get close to polio eradication in Iran, surveillance of sewage and environment is a critically important tool for identifying any silent circulation and outbreak of vaccine derived viruses in our populations. It is crucial to facilitate infrastructures collaborating with national polio laboratory in different regions of country and establish an accurate strategy to efficiently survey environment and vulnerable individuals.

Keywords: Oral Polio Vaccine, Environment, Vaccine Derived Poliovirus, Sewage Surveillance

O31

Management of Medical Waste Disposal In Order To Protect the Environment

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Today waste management of hospital waste management in terms of public health is a major part of the cities To be allocated, in particular because of the large number of scattering centers in the city are on the one hand and The alignment and proximity to a large population at the site of special significance. The purpose of this study was to determine The waste produced by the hospital to identify the sources and methods of reducing the production of medical waste Also be aware of the attitudes and practices of hospital staff in relation to waste management is correct. Many of Chemical waste containing hazardous materials are hospitals due to the potential for contamination of the environment The need for proper management and collection, transfer and disposal are. Hazardous wastes about 11% to 13% of hospital waste and 71% to 93% of the rest of safe waste (domestic) account. Ways to reduce waste generation, recycling, separation and isolation of the first strategy should be considered further. Before disposal of hospital waste management law to be safe and then removed to the hospital for final disposal. For this reason, reform of the current methods in hospitals and safe approach to the reduction of hospital waste is essential.

Keywords: Waste, Garbage, Dangerous Waste

Iranian Association of Clinical Laboratory Doctors

Laboratory Specimen Referral: Opportunities and Challenges O32 - O33

Nowadays, the global model for the management of medical diagnostic laboratories is based on the creation and management of large laboratories. Small and medium-sized laboratories are less popular in countries. LabQuest, LabCorp in US and Laboratoire Cerba in France, are examples of such laboratories. In these laboratories, samples are not taken directly from patients, but referred from other centers to analyze. This model however, has advantages and disadvantages that must be discussed. There are several inquiries need to be answered and decisions to be made. It may even be necessary to change the related terms and conditions of the countries.

One of the particular benefits of this model is that people in remotest regions can have access to specialty tests. This model has been used for many years in our country's health system. Cervical cytology samples are taken by the health centers from peripheral health units and are checked in special centers. The results are again returned to the peripheral units.

Another advantage of this method is the integration of experienced and skilled human resources as well as equipment and physical space that can minimize the cost of testing.

The method does, however, have some disadvantages including increase in pre-analytical errors which may cause problems if is not managed properly.

There are also some samples that do not necessarily require a referral. For example, frozen section specimens, taken at the hospital, are used for real time diagnosis, and have no indication for referral.

Considering the above, it is necessary to establish appropriate strategies and instructions to use advantages of this approach and minimize disadvantages.

Dr. A. Safaei, DCLS

O32

Why Measuring Performance at Medical Laboratories? How Can We Evaluate It?

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The definition of performance is handling a situation, accomplishment, or completing a mission in an effective way. Evaluation of the performance in a standard and objective way could only occur when targets of an organization have been determined and consistent with the customer profile. When this definition is adapted for laboratory practice, target of the performance becomes performing the expected task of a medical laboratory, which is providing analytically and diagnostically accurate and reliable predictive, diagnostic, monitoring, and scanning tests within accepted standards that are used for the effective sustainability of personal and public health; as well as providing customer (patient, physician, epidemiologist, etc.) satisfaction. International nonprofit organizations already defined the requirements, targets and determined evaluation methods to accomplish this mission. United Nations has been adapted these requirements for harmonization and extensive quality of laboratory results according to the performance measures of WHO and accreditation agencies. In order to achieve extensive harmonization of defined performance criteria and also to enable everyone to benefit equally from these services: a. Health Ministries of various countries ensures that the performance criteria are met by independent accreditation agencies. b. Equipment and test kit manufacturers produce validated products that will facilitate reaching those criteria. Accreditation according to EN ISO 15189 is the proof of achieving and sustainability of the analytical performance targets through verification and external quality assessment results. The aim of evaluating performance in medical laboratories is to measure and determine techniques for the quality performance by theoretical and practical ways. The main purpose is to obtain accurate and comparable results of an individual within tolerable error limits. The evaluation of the performance will be discussed in this presentation under the main topics of analytical and biological performance.

O33

Importance of Selection and Evaluation of Referral Clinical Laboratory Standard by Referred Laboratories in Promotion of Efficacy of Laboratory

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Introduction: Many laboratories stick to various methods in order to increase the number of their patients and thus their revenues through usual and unusual methods and they pay the least attention and concentration on managing their current expenses. Therefore, finding the cost of tests in all levels of laboratory along with making a proper selection in the area of referral laboratory will remarkably decrease the unnecessary and hidden expenses of a clinical laboratory and will finally increase the efficacy of the laboratory organization. Considering the high cost of specialty and subspecialty tests, it is certainly impossible to carry out all laboratory tests in a small or medium sized laboratory center; thus in order to meet the requirements of specialty and subspecialty pathologic tests of the physicians, small and medium sized peripheral laboratories must have a direct and close contact and cooperation with a secondary and reliable laboratory called reliable referral laboratory. Peripheral clinical laboratories most often need a laboratory with technical and scientific support called the referral laboratory, so that in addition to being able to present scientific consultancy services they can perform unusual specialty and subspecialty tests with basic procedures and can provide necessary support to the referral laboratory in certain circumstances in routine tests. Criteria for selecting a clinical referral laboratory: Selecting a referral laboratory by a referred laboratory requires precise research and examination and must be done according to scientific criteria and indices. The following are important factors and criteria in selecting a referral laboratory by the referred laboratory: 1- using reliable and referral procedures by the referral laboratory, 2- Rapid and proper processing of works in the area of test result delivery (it is recommended that the reception and delivery of results to be done online via website and network in the fastest possible time); 3- Complying the qualitative claims of the referral laboratory with reality; 4- high scientific and practical skills of the referral laboratory's staff (high level of staff qualifications); 5- Vicinity and adjacency of the referral lab with the referred laboratory; 6- cost of tests in the referral laboratory and the type of financial relation with the referred laboratory; 7- capability of the referral laboratory to support local laboratories in critical and specific circumstances;

Keywords: Referral Lab

Iranian Association of Clinical Laboratory Doctors

Law and Ethics: Civil and Criminal Responsibilities O34 - O38

Medical diagnostic laboratories like other parts of the medical community are influenced by factors such as available and feasible knowledge and technology, when performing their services.Human power andfacilities have not been complete and comprehensive at any time. However, with issues such as legal and ethical responsibilities, is there any safety margin for laboratory diagnosis that arepossible and feasible at any time and place? In other words which decision should be made by laboratory community between the acceptance and rejection of the responsibility of their diagnoses?

This concern has been strengthen after nearly two decades of performance of risk diagnostic tests such as pre-marital, prenatal and newborn screening testsand because ofthe emergence of numerous clinical inconsistent results.

Legal claims and involvmentof jurisdictionsin multiple and various instances of cases in which early detection and laboratoryscreening test resultsareseriously in conflict with secondary complications such as the birth of babies with debilitating diseases (Down syndrome, thalassemia, etc.), has attracted theattention of the communityto cooperate with experts in the field of law and ethics. In this meeting entitled “civil and criminal responsibility” issues related to laboratory diagnosis will be discussed.

Dr. M. J. Soltanpour, DCLS

O34

Laboratory Civil Responsibility According to "Tasbib" Rule

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Iranian Civil Responsibility system has been developed based on two principal Islamic law rules called "Etlaf" and "Tasbib". According to "etlaf" rule, each loss resulted by a direct cause on other's property or health should be recovered. "Tasbib" rule explains how indirect losses should be compensated. Article 1 of Iranian Civil Responsibility Code states that recovering indirect losses is possible subject to proving any fault of the cause. In other words, there is no compensation if there is no fault in indirect causality. Unlike direct role of laboratory in diagnosis process, it is the physician who leads the treatment. So it should be answered that if treatment fails due to any reason, whether the laboratory bears burden of responsibility and if the answer is positive, how could we evaluate it's share in the recovery. This article intends to scrutiny possible rules which may justify laboratory responsibility including "Tasbib" rule and give a meaningful image of laboratory civil responsibility system in Iran.

Keywords: Laboratory, Civil Responsibility, Tasbib

O35

The Ethical Responsibility of Laboratories towards Diagnostic Prenatal Testing

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Diagnostic prenatal testing have had significant impacts on the confidence of parents for having healthy baby and reduce the stress of having a disabled child. These methods can be performed by invasive or non-invasive and despite medical advances they can not provide definitive answers. In addition, doing intrauterine methods such as Chorionic Villus Sampling, Umbilical Cord BLOOD can increase the risk of miscarriage. Hence, ethical critiques regarding them have been noted that can be divided in to two categories. Critiques which consider these methods in contradiction with fetus's right to life and degrading the life quality of the incapable people. The Latter, Critiques by emphasizing the rights of the pregnant women and medical principles such as autonomy, beneficenceand Non-maleficence know these methods as their basic rights. In this regard, the Expression of some ethical situations moderating these testing is important. For example, the need to take advantage of the latest and most reliable methods presented by laboratories, Raising the possibility of the accuracy of the results by laboratories and Properly identify and use of the specific type of testing particularly about invasive types can be seen ethically effective.

Keywords: Diagnostic Prenatal Testing, Invasive Methods, Autonomy, Selective Abortion

O36

Laboratory Officers' Secrecy

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Introduction: Reporting laboratory test results to the client (patient) is very important: human body is part of human privacy. So laboratory test results from human body, also related to this privacy. Therefore reporting laboratory results to its true owner is a significant matter. The difficulties of client identification; relating the results to third parties (such as patient's spouse); reporting results via telephone; uncalled-for interference by others; patient death or Coma or incapacity or outing of access; are the most crucial cases. ObjectThe object of this study is reach to a general principle that could be apply to all of cases and finally regulating laboratory officers' duty. Method this is a documentary study. The Acts, regulations, legal and ethical general principles, will be used for this research. DiscussionLaboratory officers are "patients' trusty" and must report laboratory results only to them (or their agents). Laboratory is not judicial tribunal or police that follow up laboratory results. Even if these results related to third parties, the patient itself is responsible to report not laboratory. Conclusions and Suggestions1. Laboratory is patient (client) trusty and trusty should deliver the trust only to the truster. 2. Most exceptional circumstances include emergency cases such as patient Coma, absence or incapacity when he/she obviously needed to urgent treatment. 3. Laboratory is not responsible to result reporting to other beneficiary persons. 4. Analysis of laboratory results is not laboratory's duty; rather is physicians and judges profession. 5. To patient identification, conduct according to a reasonable laboratory officer is sufficient. 6. Generally result reporting via telephone is wrong. Every "laboratory receipt" must be attached to patient picture. Officer must have some skills to identification.

Keywords: Laboratory Officer, Laboratory Test Results, Secrecy, Patient, Responsibility, Reporting Test Results

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O37

General Principles of Medical Liability and Medical Group in Islamic Law

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Due to their subject of activity, which is human being and also because of the oath they have taken, physicians and the large medical group, have a charitable intention and action. However, in some cases, in addition to the losses that are essential for professional life and it is not viewed as loss from the perspective of law, there are some losses and damages that people suffer and they are deemed as unjust and uncommon, thus the legislator has created liability against them. The scientists of law and Islamic law, for fulfillment of this responsibility have stressed on three elements under all civil liability assumptions: 1- Presence and occurrence of loss; 2- Committing a loss-making action; 3- the cause and effect relation between the loss-making action of the individual and the loss incurred. In this paper tries to: 1- State the concept of loss in medical actions, appearing in two forms of physical and spiritual losses and also the natural interests and functions of the body's organs are gone or face deficiency, based on the specifications and features that loss has; 2- Later, we will discuss the definitions of medical mistakes and their forms before, during and after the diagnoses, examinations, tests and surgical operations, the physician's failure to follow regulations and principles governing the related operation (including medical, scientific and technical experiences, and principles of medical, Islamic law and legal ethics), deficiencies and defects in performance, etc.; 3- Finally the concept of stewardship and causative relation between the medical action that has caused loss and the damages and loss incurred and the medical team (team manager, members, related center, etc.) engaged in the operations, will be put into discussion.

Keywords: Liability, Medical Liability, Physician's time

O38

Ethical Lapses Resulting in Administrative, Civil and Criminal Legal Consequences

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"Dr. Tempske will present a brief overview of American laboratory law, and will then illustrate how lapses in ethical standards resulted in violations of the laws. Depending on the severity of the violation, individuals and laboratories faced administrative, civil, and sometimes criminal liability under the American legal system. The cases used to illustrate this talk are taken from cases that were investigated by the California Department of Public Health."

Iranian Association of Clinical Laboratory Doctors

Medical Laboratory in Present and in Future O39 - O43

Improvement in medical labs in past years from view point of diagnostic instruments, kits & different procedures of tests, and also improvement in quality were very vast & dominant.

Dependence of diagnosis of diseases upon lab diagnosis is more than 70 percent.

Also we had improvement in quantity of medical labs in all cities around the country.

In result of improvement in diagnostic instrument & lab procedures, discussion about refer of samples between labs, establishment of referral labs in each provience & big cities is an idea.

In the panel, results of research about ‘’decrease of test costs with refers of lab samples’’ will discuss.

Dr. S. M. H. Hashemi Madani, DCLS

O39

The Comparison and Study of Clinical Laboratory Situation (Expenditure and Solving Pathway)

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Because of complex area in health care and high costs and prices, and human resource restriction, it is necessary to study the agent that affects the laboratories. In Iran total expenditure on health is 6.7 percenent of GDP and total expenditure on heath per capita is 1562 $ (WHO, 2012) so these information shows saving in health care is very important. These two studies are retrospective descriptive studies that their data has been extracted from software's HIS and with compassion of expenditure and material, sources of expenditure are known. As a result it was observed that governmental laboratories which have governmental tariff need to repair their expenditure by budget belonging to state. Most part of cost firstly was personnel cost and secondly in consumable equipment Also in second study with comparison of lowering cost with converting level 1 lab to sampling section, productivity in these labs increased.

Keywords: Budget, GDP, Productivity

O40

Evaluation of Cost-Benefit Ratio in Low, Medium and High Activity Laboratories

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Does deflat of med lab costs hapens, if number of tests increases? In this research we have selected a few low, medium and high activity med labs and cost benefits were compared .Med lab administrations were not ready to release theirbenefits, so we compared cost-benefit ratioes in scale of persentage of costs benefits which computed by the med lab administrations.

Keywords: Costs, Number of Tests Increases, Med Labs

O41

Laboratory Service Network in the Healthcare Reform Plan

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All around the world, in all organs, when a systems structure gets incompetent, they attempt to refine and Maintain related processes to reduce this incompetence (reform). But sometimes system troubles develop so high that reformation can't be effective to repair, therefore a plan is needed, called '' transformation ''. During the latest years, the hygiene system incompetence was so loud and clear that every ordinary men recognized and realized that. Costing a lot (out of pocket) for people, unpleasant of people, physicians and medical groups and ineffectiveness of medical services, assigning problems between govern, parliament, hygiene ministry and insurance organs, was made this ineffective structure more incompetent. The hygiene transform plan, in order to solve the assigned problems, scheduled and delivered. Like the other similar operations, there was many risks and hopes to apply the plan. In spite of that, the initial results shows that there is proportional satisfaction of people from the plan performance. In this opportunity, we will point to the conditions and situations of performance and review the context and margins of the plan.

Keywords: The Healthcare Reform Plan

O42

Introduction to Management Approaches of Medical Laboratories in Response to Current Challenges and Trends in the German Market

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The market for German laboratories is facing currently a lot of challenges and difficult frame conditions. The growing demand for lab diagnostics and service level becomes evident as we watch more incoming lab orders per patient as well as more tests per individual order. This is accompanied by increasingly challenging economical and service demand conditions such as fee cuts / limited budgets, rising costs (mainly logistics, staff, energy), rising requirements on lab services and service levels, Turn around times for reports, Sample collection frequencies, IT Services (e.g. electronic transfer of orders/results), Lab reports to include recommendations for therapy and treatment and / or information for patients as well as continuously increasing demands on quality management. To address these issues we have implemented a couple of innovative solutions and techniques at our lab. Dr. von Froreich. Bioscientia is a big referral laboratory in the metropolitan area of Hamburg, and part of a national and international network of laboratories. Through its structure and efficient logistical network we have been able to keep up to the demands of our clients and tackle some of the difficult surrounding issues. In this brief talk some of these solutions and ideas shall be discussed to serve as an example of how modern laboratories are responding to increasing market demands.

O43

Current and Future Trends in Laboratory Diagnostic Testing

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Molecular Biology Technologies are now routinely used in every pathology discipline, and are also included in National Diagnostic Recommendations in Several counties for many years. This explosion has been driven by the need for accurate and faster diagnostic tests, fueled by the inception of the Polymerase Chain Reaction (PCR) in 1985. In last three decades, PCR and sequencing technologies have significantly improved our understanding about the molecular and genetic causes of several human diseases and mechanisms of their development. In the short-term, the scope of diseases and conditions that can be understood using genetic analysis and molecular diagnostics likely will expand.Consequently, single gene analysis will be replaced by multiple genomic analysis which enable us to predict the risk of disease, initiate preventive actions, analyze multifactorial and complex disorders. Looking into the future, in this talk trend towards P4 medicine will be presented. In addition, considering developments in precision medicin, trends towards point of care diagnostics and its effect on efficacy of treatment will be discussed. In conclusion, The convergence of systems approaches to disease, new measurement and visualization technologies, and new computational and mathematical tools can be expected to allow our current, largely reactive mode of laboratory testing, where current sitution of the paitent is analyzed, to be replaced over the next 10 to 20 yaers by a personalized, predictive, and participatory, point-of-care laboratory testing that will be cost effective and increasingly focused on wellness.

Iranian Association of Clinical Laboratory Doctors

New Methods in Diagnosis of Inherited Metabolic Diseases O44 - O50

Inherited metabolism disorders compromise a large group of genetic diseases.Many of these disorders are caused by a defect in a gene encoding an enzyme that is involved in the conversion of substrate to product. In most of the disorders, problem emerges when the accumulation of the substrate causes toxicity in the body, or decreasing the synthesis of the product, which may be essential for normal body.These disorders are classified into metabolism disorders of carbohydrates, proteins, organic acids or Lysosomal storage disease. Due to the large number of these diseases and involvement of a wide range of body systems, the occurrence probability of each of these disorders should be taken into considerationespecially in children. Most congenital metabolic diseases can be detected and differentiated by neonatal screening tests using mass spectroscopy (MS). This test is widely used for obtaining patient results and attempting to treat patients as soon as possible. The enhanced technology of GC/MS that is based on the integrated system of data analysis is currently able to identify more than 100 genetic metabolic disorders.

Dr. M. R. Mahdavi, DCLS, PhD

O44

Activities of National Biochemistry Reference Laboratory

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Department of Biochemistry, Pasteur Institute of Iran, began its collaboration with Genetics Office of non-communicable disease control center of the Ministry of Health in the project called 'preventing birth of children with beta-thalassemia' through conducting tests on globin chain biosynthesis for the diagnosis of latent beta thalassemia in 2000. Then, in 2010, it started its activities in accordance with a comprehensive national project for controlling inherited metabolic diseases and the need of disease control center of the Ministry of Health for the diagnostic tests on disorders of tetrahydrobiopterin cofactor deficiency (non-classical phenylketonuria disease). By establishing a quality management system based on ISO 15189, this laboratory was entitled 'National Reference' by the Health Reference Laboratory to provide Iranians with specialty and subspecialty diagnostic services in accordance with international standards. The services provided by this biochemistry laboratory cover the diagnosis of thalassemia, hemoglobinopathy, and inherited metabolic diseases with emphasis on PKU. The tests conducted at this center include specialty and subspecialty tests at diagnostic levels 2 and 3, which are not commonly conducted in medical diagnostic laboratories due to their high costs and complexity of the procedure, as follows: 1.Diagnostic tests for phenylalanine metabolism disorder (PKU) - Measuring neopterin and biopterin in urine by HPLC -Measuring DHPR activity in blood by kinetic spectrophotometer -Measuring the plasma phenylalanine level by HPLC -Diagnostic tests for biotinidase activity deficiency by spectrophotometer 2.Diagnostic tests for biotinidase deficiency 3.Diagnostic tests for Gaucher, Sandhoff, and Tay-Sachs diseases 4.Diagnostic tests for hemoglobinopathies and thalassemia -Globin chain biosynthesis and globin chain analysis by HPLC to determine α/ß chain ratio - Globin chain analysis to determine the type of hemoglobinopathy -Common hematological tests including CBC, reticulocyte count and red cell morphology.

Keywords: Iinherited Metabolic Diseases, Thalassemia

O45

An Iranian Experience of Development of Mass Spectrometry for Clinical Analysis

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It is at least 4 decades since mass spectrometry coupled to gas chromatography was used for the analysis of clinical samples. In many countries, the use of this analytical tool has gone far beyond the original aim of screening for metabolic disorders in the newborn and in many labs around the world, liquid chromatography coupled to mass spectrometry is used the an economical, precise and accurate method for the routine analysis of many clinical samples, e.g. vitamin D3. This breadth of use is not observed in Iran. There are many reasons for this, including high initial investment costs, expensive maintenance and running costs, a general lack of expertise and limited access to kits or spare parts. For these reasons, even the instruments which have been purchased by many public or private institutions are utilized only to a very limited extent. With the aim of developing the required expertise and technical/scientific foundations needed, Massoud Diagnostic Laboratories has collaborated with a group of engineers to fabricate a mass spectrometer coupled to GC. This is a report of our experience in our endeavor to introduce sustainable mass spectrometric analysis in the clinical setting.

Keywords: Mass Spectrometry, Gas Chromatography, Newborn Screening, Metabolic Disease

O46

Identification of Disorders Associated with Errors in Metabolism through Laboratory Methods and Necessity of Improvement of Our Approach to Laboratory Diagnosis

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In general, metabolic disorders fall into 6 categories: aminoacid, carbohydrate, fatty acid, organic acid disorders, and mitochondrial, lysosomal and peroxysomal functional disorders. The primary line of laboratory evaluation starts with following tests. Blood: CBC, electrolytes, ammonia, uric acid, gas, lactate, and pyruvate; Urine: smell, pH, keton, and reducing substances; CSF: lactate, pyruvate, glucose. Following collecting data from above tests, second line of investigation starts which deals with finding abnormal values of certain metabolites related to any of 6 categories of disorders.At this stage, work starts with HPLC and Tandem Mass Spectrometry, followed by GC-Mass Spectrometry, as a confirmatory approach to initial findings. Eventually, an enzyme assay helps pinpoint disorder. Final laboratory diagnosis can be shaped by performing nucleic acid analysis, which completes the cycle of second line of investigation. For laboratory investigation of metabolic disorders In Iran, nationwide strategies are now defined and developed; however there are still some barriers in our way and among them following challenges need to be certainly addressed: attention to major centers performing laboratory tests dealing with metabolic disorders; training laboratory specialists and technicians, and medical specialists of metabolic disorders to become familiar with latest findings and discoveries in the field; connection with distinguished and accredited international centers to obtain information at the edge of science.

Keywords: Metabolic Isease, Ammonia,Tandem Mass Spectrometry, Peroxysomal Functional Disorders

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O47

Metabolic Acidosis in Children

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Metabolic acidosis is a very common symptom in pediatrics. It can be observed in a large variety of aquired circumstances including: Infections, severs catabolic states, tissue anoxia, severe dehydration and intoxication. All these common causes should be ruled out before considering IEMs.It must be stressed that these circumstances can also sometimes trigger acute decompensation for an unrecognized IEM.Metabolic acidotic states in pediatric patients are understood mainly on the basis of simultaneous determinations of blood gases, electrolytes and anion gap, glucose, lactate, pyruvate, ketone bodies and amonia.At the bedside, the physician should chech for a special odor and for ketonuria and a- ketoaciduria (DNPH reaction), and should measure urine PH and electrolyts.Urine and plasma samples should be frozen for subsequent metabolic investigations(mostly of amino acides and organic acids). As usual, it is important to collect all laboratory data at the same time and, if possible, before therapy.Therapy can mask some significant symptoms.When disease is advanced, nonspecific abnormalities can mask the primary problem. The presence or absence of ketonuria associated with MA is the major clinical key to the diagnosis, particularly in the neonetal period.During which significant ketonuria is nearly pathognomonic of an IEM.

Keywords: Metabolic Acidosis, Children, Diagnosis

O48

Organizing the Laboratory Diagnosis for Inherited Metabolic Disorders at All Levels of the Health System

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Usually determination of the "biochemical diagnosis" is the first step in the diagnostic approach to Inherited Metabolic Disorders (IMDs). The "genetic diagnosis" is done for confirmation or preventive interventions. For the need assessment as well as analyzing the gaps we have assessed the diagnostic process in Undiagnosed Patients Suspected of IMDs. These Patients were classified in two groups; the first were patients without any diagnosis and the second were patients with only "biochemical diagnosis". Retrospective evaluation of the first group clarified the challenges in pre-analytical and post-analytical steps of "biochemical diagnosis". Systematic diagnostic approach to these patients determined the main biochemical tests that were necessary to be standardized for the intra-analytical step. Prospective evaluation of the second group elucidated the main challenges in pre, intra and post analytical steps of "genetic diagnosis". The evaluation revealed that there should be organized, specific management and technical standards specific for biochemical and molecular tests to facilitate the audit process and a stepwise process is necessary for implementing laboratory quality management. In biochemical genetics laboratory complex techniques, such as the quantitative assay of metabolites and assays for selected enzymes, depend on high-cost equipment and highly trained personnel. Furthermore, the decision for setting up molecular genetics testing depends on factors such as the frequency of a genetic disease or the implementation of a prevention program. Therefore a cost-efficient strategy may be the regional development of networks of laboratories that complement each other. Centralization and regionalization of biochemical-genetics facilities in the tertiary level maximizes the cost/efficiency and minimizes the duplication of resources. Therefore in this context implementation of transportation systems for specimens from primary and secondary levels is necessary.

Keywords: Diagnosis, Inherited Metabolic Disorders, Health System

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O49

Inherited Metabolic Diseases of Organic and Fatty Acids in Asia: Collaboration Study

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Inherited metabolic diseases (IMD), such as organic acidemias (OAs) and fatty acid oxidation defects (FAODs) have become to attract attention with the development of diagnostic tools including tandem mass spectrometry (MS/MS), and gas chromatography mass spectrometry (GC/MS). Patients with OAs or FAODs often manifest episodic fatigue, hypotonia, convulsion, or acute encephalopathy following pyrexia, diarrhea or long time fasting, although no symptoms are observed in the stable stage. It has been considered that health hazards or impairments can be prevented by early detection and intervention. Newborn mass screening (NBS) for such diseases is becoming popular worldwide. Identification of IMDs using MS/MS and GC/MS is currently becoming a growing interest. We have had collaboration study on detection of IMDs with Asian countries including India, Vietnam, China, Malaysia, Indonesia and others.In order to transport the samples from foreign countries, we developed dried blood filter paper for MS/MS analysis, and dried urine filter papers for GC/MS analysis that allows their shipping at room temperature. During the period between 1995 and 2014, 484 cases with OAs or FAODs in a total 4,579 cases at high risk were detected, while 238 of 12,721 sent from across Japan were detected. A total detection rate of Asian countries and Japan were 10.6% and 1.9%, respectively. Disease distribution was deferent from country to country. Methylmalonicacidemia was most common in both Japan and Asian countries. Urea cycle disorder, propionic acidemia, glutaricacidemia type 1, medium- and very-long chain acyl-CoA dehydrogenase (MCAD and VLCAD, respectively), are more common in Japan, compared with that of Asian countries. On the other hand, beta-ketohiolase deficiency, oxoprolinemia, isovalericacidemia and maple syrup urine disease are more common in Asian countries. MS/MS is used mainly for screening and for detection of FAODs. MS/MS is currently popular in the NBS, and kit reagent and data processing software are well developed. On the other hand, GC/MS data processing and interpretation of the data often require skills and knowledge on the metabolic diseases, and may be difficult to spread, although GC/MS can provide detailed measurement of urinary organic acids to make a precise diagnosis of OAs. We developed a PC-based automated system of GC/MS data processing and biochemical diagnosis from the metabolic profiles. Our system is user-friendly even for beginners, and enabled extremely fast data processing and interpretation, for the diagnosis. NBS is increasingly popular in Asian countries. Collaboration studies will expand to investigate the etiology, clinical pictures with nutritional variation, or genetic background of each disorder, and to improve the outcomes and QOL of the patients.

O50

The Effects of Preanalytical Variables on The Diagnosis of Inborn Errors of Metabolism

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Quantitative metabolite profiling in biological samples has the potential to reflect physiological status and to identify disease associated disturbances in metabolic pathways. This approach is hampered by a wide range of pre-analytical variables. Pre-analytical variables account for 32-75% of laboratory errors, and encompass the time from when the test is ordered by the physician until the sample is ready for analysis. There are some less controllable sources of pre-analytical errors that can seriously influence the reliability of test results in inborn errors of metabolism. These primarily include specimen collection (optimal sample size, hemolytic, lipemic and icteric samples, time of specimen collection, duration of overnight fast), handling (stability criteria regarding transport and storage, sample labeling) and physiological variables such as the effect of lifestyle, diet, stress, age, gender, positional effects, and endogenous variables such as drugs and circulating antibodies .Some of the pre-analytical variables such as specimen variables can be controlled, while other variables need to be well understood in order to be able to separate their effects from disease related changes affecting laboratory results. As pre-analytical sources of variation can produce unpredictable and unfavorable impacts on the wellbeing of patients, a reduction in laboratory testing errors and quality improvements both play a significant role in programs for assessing and improving quality. In this respect, consistent quality specimens, resulting from proper training and knowledge of factors that can influence laboratory results, are essential for minimizing errors and optimizing resource utilization. Furthermore, proper training results in improved quality of laboratory results and whole patient management process to assure accurate diagnosis.

Keywords: Preanalytical Variable, Inborn Errors of Metabolism, Diagnosis of IEM

Iranian Association of Clinical Laboratory Doctors

Pathology of Clinical Laboratory Education and The Related Curricula O51 - O52

The word "Pathology" directs the mind to look for possible existence of damage. But is there really damage in laboratory science education? Where the damage is evident and who does express and explicit it?

If there is damage, where does it come from? Whether the education program that is a milestone of skilled and knowledgeable human resources suffering from damage or the problems are associated with the application of graduates in the health care system? Whether increasing expansion of higher education in the field of laboratory science covers the academic needs of the laboratory or does it fill the skill gap of the laboratory? Do training of skilled manpower that have sufficient knowledge considered in formulation of educational curriculum? Do what, that is considered as the ability of graduates has been achieved in the content of these programs? Are these programs can educate individuals who take laboratory management?

No training program is free of defects, undoubtedly. Therefore, rapid changes in science and technology require that educational curriculums of the medical group are revised in the period up to 5 years to prevent serious problems. Requiring at least 10 years may be useful for non-medical programs, but is not sufficient for the increasing needs of the medical group.

In terms of specialty, there are a couple of main areas in most education programs that include the general subjects, basic science, specialty courses, internship and dissertation. The number of units of each topic, mentioned above depends on the duration, degree and objectives of the course.

To train graduate students who have the minimum academic requirements and necessary knowledge, which of these topics should be ponder and contemplation more? Should graduates of clinical laboratory be able to respond to patient, upon graduation or should they start again training, and learning from the beginning?

And finally, is it possible to formulate a program that enables the graduates to meet the requirements of medical diagnostic laboratory upon graduation or in the shortest possible time.

This topic intends to analyze all the above questions in the form of critical reviews of educational programs related to clinical diagnostic laboratory.

Dr. Y. Poorkhoshbakht, DCLS

O51

A Review on Undergraduate to PhD and Pathology Assistant Programs in Laboratory Sciences

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Introduction: In recent years the area of diagnostic tests have become so vast and varied that very few people can claim to havecomprehensive knowledge to cover all aspects of new experiments and their applications and analyses. As this trend is quickly developing, and considering the importance of the test results in diagnosis,similar to other education programs that are currently limited to Ph.D, specialty, and Fellowship, there should also bea plan in the field of medical diagnostics laboratory to meet thedevelopments. Research Method: The existing educational programs leading to university degrees inthe field of medical laboratory are currently limited to continuous undergraduate, single field undergraduate, Single field PhD andthe Pathology assistant course which benefitsonly from the Pathology assistantspecialty and the last undergraduate to PhD programs. Discussion and Conclusion:The undergraduate to PhD course was merely designed and implementedfor student admission in three interim periods and then was stopped due tothe existence of the Technician-to-PhD course. Although this course met the laboratory requirementsat that time and had the necessary competence, in order to be currently used it needs a complete review in terms of content, modules and the implementation and evaluation. The Pathology assistance course whose last editionis currently at the secretariat of medical education commission of the Ministry of Health and Medical Education,possess the requirements for training specialist doctors who are able to act as pathology laboratorytechnicians.Hence,in this study it is tried to discuss the adequacyof this educational program in order to get the essentials to meet the current and future needs andeliminate shortages by reviewing the educational programscurrently run in the field of laboratory sciences in USA.

O52

Empowerment of Medical Laboratory Related PhD Courses at Educational Content in Management and Leadership of Medical Laboratories

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The Clinical Laboratory related PhD courses at Iranian universities, were designed comprehensively to administrate medical laboratory sciences' requirements. These courses construct philosophy and improve proficiency in diagnostic medical laboratory, clinical consultation related to medical laboratory sciences, and clinical laboratory management. In this regard, the concept of research was truly embedded in courses, especially on the development, validation, verification and implementation of new diagnostic tests. PhD Candidates whom their background is Bachelor or Master of Sciences (BSc, MSc) in medical laboratory sciences, receive educational courses in all areas of clinical laboratory sciences including microbiology, immunology, hematology, biochemistry and parasitology, using traditional and novel techniques.The point is that PhD Candidates with other backgrounds should receive more training to be eligible as a laboratory director, because they have not met some essential courses in their educational curriculum. We need to enrich the educational content of Clinical Laboratory related PhD courses to be able to do the evaluation, interpretation and judgment of tests results, and critical thinking for planning, applying, analyzing and evaluating of new diagnostic tests. Programed interactions with the medical laboratory directors and clinical & education specialists should be provided to improve managerial skills. In conclusion, educational curriculum should cover laboratory and management education, including attendance in laboratory leadership courses and laboratory directorship rotations. These should cover Principles of laboratory management, including team working experiences, laboratory leadership, Laboratory personnel administration, conflict solving, budgeting, quality management and safety supervision.

Keywords: Empowerment, PhD Courses, Educational

Research in Laboratory Sciences: Clinical Biochemistry O53 - O71

O53

Determination of Hemoglobin in Patients with a Cheap and Portable Rapid Method

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Background: Anemia is a major health problem in the least developed countries and the poor, which in most cases will be diagnosed by doing an experiment was to color scale hemoglobin Haemoglobin colour scale (HCS) is a cheap and simple method approved and recommendations of the World Health Organization (WHO) for the determination of hemoglobin, which is not possible in the case of access to instrumental methods can be used. Due to the prevalence of anemia in the country, especially in disadvantaged areas and among students and pregnant and lactating women as well as patients with thalassemia who have regularly used the control blood hemoglobin the method can be helpful. Methods: This study is a thorough overview of the articles contained in the database Medline, cochrane, EMBASE and WHO documents and reports have been conducted on the HCS. Results: studies conducted in several hospitals sensitivity and specificity of 90% to 70% have been reported Also compared this method with conventional methods and apparatus results show that the errors occurred due to reasons such as Inadequate blood or too soon or too late reading results (two minutes) and keeping chromatic scale in the wrong angle light When the test was repeated and careful Dramatically improved the sensitivity and specificity of 96% and 86% of these were derived. Conclusion: Systematic studies on the manual method indicate this fact learned HCS Where access is not possible using this method can be very useful device and also reduces the cost of diagnosis and treatment is.

Keywords: Anemia, Hemoglobin, Hemoglobinometry, Thalassemia, Hemoglobin Colour Scale

O54

Anti-Mullerian Hormone Levels after Laparoscopic Treatment in Women with Anovulatory Polycystic Ovary Syndrome

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Anti-Mullerian Hormone (AMH) has been implicated in the pathogenesis of polycystic ovary syndrome. The aim of this study was to measure AMH level laparoscopic ovarian diathermy to evaluate its prognostic value for an ovulatory response and to investigate AMH changes after laparoscopic to further explore the effects of the surgery. Methods: This prospective study included anovulatory women with polycystic ovary syndrome undergoing laparoscopic (n=29) or receiving clomiphene citrate (n=20). Plasma AMH concentrations were measured before and 1 week after treatment. Further measuring of AMH was made at 3 and 6 month follow-up. Results: The pretreatment mean of plasma AMH concentrations were 6.1 (1-21) and 5.7 (1.3-9.5) ng/ml in women having laparoscopic and clomiphene citrate treatment, respectively. After laparoscopic treatment, AMH levels were shown a significant reduction [5.1 (1-21) ng/ml, (P=0.032)] compared with the non-responders [9 (6.1-17.1) ng/ml].After laparoscopic, correlation index of AMH with ovulation was 0.6 (P=0.02). Following laparoscopic, the median AMH concentration significantly (P=0.03) decreased to 4.7(0.3-15.1) ng/ml and remained low at 3 and 6 month follow-up. Conclusions: Pretreatment AMH levels seem to be a good predictor of ovarian response to laparoscopic.

Keywords: Anti-Mullerian Hormone, Laparoscopic, Polycystic Ovary Syndrome, Clomiphene Citrate

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O55

Investigate the Serum Cathepsin B to Cystatin C Ratio in Patients with Colon Cancer

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Introduction Colorectal cancer is the second leading cause of cancer death in Western countries and the third most common cancer in the world. Cathepsin B is a lysosomal cysteine protease which is regulated by cysteine proteinase inhibitors such as cystatin C. Elevation of cathepsin B levels in biological fluid has been observed in many cancers patients. The aim of this study was to measure serum levels of cathepsin B and Cystatin C in order to take advantage of these two parameters as a Marker for early detection of colon cancer. Materials and Methods Blood samples from 87 patients with colon cancer and 87 healthy controls that were matched for age and gender and by controlling the confounding factors were collected and the cathepsin B and cystatin C levels were determined. In addition, cathepsin B expression was investigated immunohistochemically for 22 matched-pairs of cancerous and adjacent tissues of colon cancer patients. Results Serum cathepsin B, but not cystatin C, was significantly higher in colon cancer patient groups compared to that in the control group. Also, almost all samples of cancerous tissue (18 of 22) expressing high levels of cathepsin B as compared to adjacent tissue showed. Discussion When the serum cathepsin B to cystatin C ratio was calculated that of the colon cancer group was significantly higher than that of the control group. Thus, the cathepsin B to cystatin C ratio might be used as an alternative marker for aiding diagnosis of colon cancer.

Keywords: Cathepsin B, Cystatin C, Colon Cancer Immunohistochemistry

O56

Applications Clinical Diagnosis of Chronic Liver Enzymes in Plasma: A Systematic Review

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Background and Objective: The liver diseases are among the most common diseases that day because of lifestyle changes, more communities are involved in why the measurement of liver enzymes in the diagnosis and treatment of these diseases much may be responsible. Results: Plasma enzyme in two categories: the first category of specific enzymes that act on the blood coagulation factors and play like a second class of enzymes that damage cells and the collapse they enter the bloodstream. Enzymes the are useful in determining liver disease include: alanine amino transferase (ALT), aspartate amino transferase (AST), alkaline phosphatase (ALP), gamma-glutamyl transferase (GGT), 5 'nucleotide phosphatase (5'NTP), lactate dehydrogenase (LDH) and some other plasma enzymes that have little use. The damage to liver cells, two enzymes (ALT, AST) increased, but the biliary tract problems such as ischemia, inflammation, obstruction (GGT, ALP and '5 NTP) increases. AST to ALT ratio has increased clinical use for the evaluation of individual enzymes in the diagnosis of diseases. The proportion of alcoholic liver disease, cirrhosis after necrosis in patients with cirrhosis of viral origin .... and even in Wilson's disease and hyperthyroidism increases the ratio of 5/4. It also has the distinction of nonalcoholic steatohepatitis (NASH) is the use of alcoholic liver disease. Test GGT usually represents a certain type of liver disease can be requested, only the followers of other tests, liver disease GGT and Both ALP increased, but only ALP increases in bone diseases. Lactate dehydrogenase subunit 5 based on electrophoretic mobility LD1 LD5 divided up. Since this enzyme is distributed in most tissues, so the total LDH measurement laboratories are usually general indicator of injury from multiple tissue. Generally measuring lactate dehydrogenase activity is a useful way to check your liver is not total. But usually LD5 isoenzymes in liver disease and LD-4 Lactate dehydrogenase increased, and can be helpful in diagnosis, but given that the analysis of LDH isoenzymes usually spends a lot of time and money testing of liver disease are not included. Aldolase enzyme, glutamate dehydrogenase and sorbitol dehydrogenase glycolysis cycle and metabolism of carbohydrates, which are rarely measured in the laboratory. Discussion and Conclusion: Considering that liver diseases due to lifestyle factors such as rising is therefore a measure of liver enzymes to allow doctors to improve the individual to assess and take steps.

Keywords: Plasma Enzyme, Liver Disease, The Clinical Significance

O57

Resveratrol Could Partly Improve the Crosstalk between Canonical β-Catenin/Wnt and FOXO Pathways in Coronary Artery Disease Patients with Metabolic Syndrome: a Case Control Study

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Background: Coronary artery disease (CAD) is the major cause of mortality and morbidity worldwide. The aim of this study was to explore the role of Canonical β-catenin/Wnt and forkhead box O (FOXO) pathways by means of investigating their target genes in CAD pathogenesis and to examine the effects of resveratrol (RES) on these pathways in CAD patients. Method: We performed this study on 10 metabolic syndrome patients with three-vessel CAD and 10 sex-aged matched (men with 40-55 years old) healthy subjects as controls. The effects of RES on β-Catenin, manganese superoxide dismutase (MnSOD), and peroxisome proliferator-activated receptor delta (PPAR-δ) expression were evaluated in peripheral blood mononuclear cells (PBMCs) of participants. Results: RES could increase the MnSOD expression in CAD patients (38%, $p<0.0001$). After RES treatment, the MnSOD expression of patients is still non-significantly lower than controls. In both blank and RES treatments, a significant positive correlation between β-catenin and MnSOD mRNA expressions was found in controls, whereas no correlation between these gene expressions was found in untreated PBMCs of CAD patients. However, RES could modestly improve this pathway in CAD. RES could increase the MnSOD activity in healthy and CAD subjects ($p=0.051$ and $p=0.009$, respectively). Furthermore, in both blank and RES treatments, the significant correlation was found between total β-catenin protein and the MnSOD activity in PBMCs of the controls but not in patients. Conclusion: The cross-talk between β-catenin/Wnt and FOXO pathways was impaired in PBMCs of CAD patients. RES treatment could lead to a modest increase in the MnSOD activity independent of β-catenin/FOXO pathway. Despite a modest improvement in the β-catenin/FOXO pathway after RES treatment, this pathway was not completely repaired in CAD patients.

Keywords: Coronary Artery Disease, Metabolic Syndrome, Resveratrol, B-Catenin, Wnt Signaling, Foxo, Mnsod

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O58

Vitamin D Receptor Gene Polymorphism and Serum Levels of Fetuin-A, Vitamin D and iPTH in the Hemodialysis Patients

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Background/Aims: Cardiovascular disease (CVD) is the main cause of morbidity and mortality in the hemodialysis (HD) patients. The aim of the present study was to influence of Vitamin D receptor gene BsmI and TaqI polymorphisms (VDR Genotyping) on serum Fetuin-A, Intact parathyroid hormone (iPTH), 25OH Vitamin D levels in HD patients. Methods: 46 HD patients and 43 age and sex matched control subjects were recruited. VDR genotypes were analyzed by restriction fragment length polymorphisms (RFLP) and divided to BsmI genotypes (BB, Bb and bb) and TaqI genotypes (TT, Tt and tt). The serum levels of iPTH, Fetuin-A, Vitamin D, Calcium, and Phosphorus were determined by the routine methods. Results: Serum Fetuin-A and Vitamin D levels were significantly lower In the HD patients than the healthy controls ($p<0.0001$, both). Serum iPTH, Calcium and Phosphorus concentrations were higher in HD patients than the control group ($p<0.0001$all of them). There was no significant difference in serum Fetuin-A, Vitamin D and iPTH levels between three Vit D genotypes in the both groups($p >0.05$ all the cases), except iPTH level in HD patients with different TaqI genotypes ($p <0.0001$) . Conclusions: Lower Fetuin-A, Vitamin D and higher levels of iPTH may indicate increased susceptibility of atherosclerosis in the HD patients. Although, study reveals that VDR gene TaqI polymorphism associated with serum iPTH level in HD group, direct roles of this polymorphism on atherosclerosis needs further studies.

Keywords: Fetuin- A, Vitamin D, Hemodialysis Patients (HD), Vitamin D Receptor Gene Bsmi and Taqi Polymorphisms (VDR Genotyping)

O59

Serum Growth Arrest-Specific 6 Protein Levels in Hemodialysis Patients

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Introduction and aim: Plasma protein growth arrest-specific 6 protein (Gas-6) is crucial mediator of vascular calcification and is involved in the development of vascular complications in various diseases. The study was set out to determine plasma Gas-6 levels in patients with end-stage renal diseases on maintenance hemodialysis (HD). Materials and Methods: A total of 90 adults including 46 HD and 44 healthy persons with normal kidney were recruited. Plasma Gas-6 and related biochemical factors were quantified as well as clinical characteristics in both study groups. Results: Significantly increased Gas-6 was found in HD patients compared with normal controls ($p<0.001$). Serum levels of Gas-6 did not differ between males and females in the HD patients ($p=0.49$) and also in the control groups ($p= 0.064$). Conclusions: increased Gas-6 as mediator to induce vascular calcification, in HD patients and may suggest its role in increased calcification process in HD patients or only as a secondary phenomenon of advanced renal failure. Its direct role on vascular calcification needs further studies in the future.

Keywords: Hemodialysis (Hd), Plasma Protein Growth Arrest-Specific 6 Protein (Gas-6)

O60

Evaluation of Accuracy, Precision and Agreement of Five Methods Used in HbA1c Measurement Based on the HPLC Reference Method

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Background: The current clinical dilemma of diabetes mellitus is prevention of complications. These complications are directly linked to the degree of hyperglycaemia in diabetics. For long-term control of the glycaemic state, measurement of glycohaemoglobin in blood is essential, and glycohaemoglobin measurement harmonization is encouraged to prevent significant inter-laboratory variability.The aim of this study was to evaluate accuracy, precision and correlation of five HbA1c measurement methods with HPLC reference method. Methods: The HbA1c of a total of 55 specimens which were selected for this study was determined using six methods Tosoh Automated Analyzer HLC-723G8 and Sebia Capillaries electrophoresis, Enzymatic Pishtaz Teb by Hitachi 912 analyzer, Immunoturbidimetric Pars Azmun by cobas mira analyzer , Nycocard and i-CROMA. Results: All five methods studied showed a good agreement with the HPLC method, with Correlation Coefficient ($r>0.95$, and the regression analysis between HPLC and other methods yielded a slope of 0.99 for Sebia, 1.02 for Pishtaz Teb, 0.79 for Pars Azmun, 0.82 for Nycocard, 0.89 for i-CHROMA. The mean bias obtainded for methods (Sebia -0.09, Pishtaz Teb-0.004, Pars Azmun -0.75, Nycocard -079, i-CROMA -0.78) than HPLC refrence method. Conclusion: The Sebia and Pishtaz Teb methods gave the best performance with acceptable Bias and imprecision with HPLC method and can be used as an alternative to HPLC measuring system. Other methods such as, Immunoturbidimetric Pars Azmun, Nycocard and i-CROMA have significant shortcomings for the accuracy.

Keywords: Diabetes, HbA1c, HPLC, Accuracy, Precision

O61

Evaluation of DISC1 Gene rs3738401 Polymorphism in Iranian Patients Affected by Schizophrenia and Individuals

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Background: Schizophrenia is a chronic, harsh, and disabling brain disorder that has affected people during history. Schizophrenia affects men and women equally. It happens at similar rates in all ethnic groups all over the world. Diagnosis is based on observed manners and reported experiences. In this study, the DISC1 gene rs3738401 polymorphism in Iranian patients affected by Schizophrenia and individuals was investigated. Methods: The present investigation was conducted including number of 71 Iranian patients suffering from Schizophrenia and 141 normal subjects by employing ARMS-PCR method. To conclude, the information and statistics received from this study was analyzed by SPSS software. Results & Conclusion: To sum up, the end outcome of current study explains considerable relation between DISC1 gene rs3738401 polymorphism in Iranian patients affected by Schizophrenia and individuals. It could be an important genetic predisposition feature.

Keywords: DISC1, Rs3738401, Schizophrenia, Gene Polymorphism

O62

Ceruloplasmin; a Copper Containing Protein in Welson Disease

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Copper is an essential cofactor for many enzymes, including cytochromes, but it is toxic in its unbound free form. Copper in human blood is distributed equally between the erythrocytes and the plasma. The majority of plasma copper (95%) is transported bound to ceruloplasmin and is believed to be involved in iron mobilization by maintain the supply of oxidized iron transported after its incorporation into transferrin. The rest of copper is bound to albumin, transcuprein, and copper amino acid complexes. Wilson disease, an autosomal recessive gene located on chromosome 13 with a frequency of 1 in 30000 to 1 in 100000 live births, is cussed by mutation in a P type ATPase that prevent the transport and incorporation of copper into ceruloplasmin and is a disorder that affects both men and women. The impaired transport decreases copper secretion into the bile thus copper overload and deposition occurs in hepatic parencymal cells, the brain, the periphery of the iris, and the kidney. In addition, the impaired transport causes low serum ceruloplasmin level. Affected people are homozygous for the mutant recessive gene, and heterozygous carriers are asymptomatic. Symptoms usually develop between ages 5 and 35 and clinically includes low serum ceruloplasmin level, high 24 h urinary copper excretion and serum copper level may be high, normal, or low. Clinical diagnosis of Wilson disease includes slit lamp examination for kayser Fieischer rings, low serum ceruloplasmin level, high 24 h urinary copper excretion and sometimes liver biopsy results.

Keywords: Copper, Ceruloplasmin, Wilson Disease, Kayser Fieischer Rings

O63

Effect of Vitamin B6 Supplementation on Biochemical Values in Type 2 Diabetes Mellitus

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Introduction: Vitamin B6 is known as an anti oxidant factor challenging with free radicals that helps to improve the clinical process of diseases. In this study, we evaluate the long-term administration of vitamin B6 on the outcome of glycemic control on patients with type 2 diabetes mellitus. Method: A total of 150 type 2 diabetic patients were studied and randomly assigned to 2 groups (control and experimental). Both groups received Metformin and Atorvastatin; the experimental group was supplemented with vitamin B6 for a 6 months trial. Result: In the experimental group, in comparison with control group, systolic blood pressure showed a significant decrease. Also, the studied laboratory measures were improved but not significant in the experimental group. Conclusion: Vitamin B6 therapy in type 2 diabetic patients can lead to a decline in further complications resulting from improved biochemical values and may pave the road to a beneficial therapeutic modality.

Keywords: Type 2 Diabetes Mellitus, Vitamin B6, Supplementation

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O64

HbA1c External Quality Assessment: Commutable vs Noncommutable Samples

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Background: HbA1c measurment is important in diagnosis and monitoring of diabetes. External quality assessment (EQA) is a way for evaluating laboratory performance in measuring HbA1c. For this, commutable quality control (QC) samples is recommended. Materrial and Methods: Two commercial noncommutable QC samples were sended to 931 and 894 participant laboratories during Jully 2011 and February 2012, respectively, and Three patient commutable QC samples were also sended to 272, 231, and 886 participant laboratories during Jully 2013 and February 2014, and Jully 2014, respectively. Results of five commonly used HbA1c kits compared with total mean. Results: With two commercial noncommutable samples, total group CVs% were 38.5% and 24.5%. With three patient commutable samples, total group CVs% were 8.0%, 6.8%, and 7.9%. In these situations mean of each kits results fell in acceptable performance limits. Conclusion: Using commutable QC samples is essential for evaluating laboratory and kit performance in EQA.

Keywords: HbA1c, External Quality Qssessment, Commutable

O65

Association of Single Nucleotide Polymorphism in the lpa Gene Region with Serum lp(a) Levels

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Over the past several decades, numerous studies have established that increased levels of apolipoprotein(a) [Lp(a)] in plasma are associated with development of coronary heart disease (CHD). Upon discovery of the apo(a) gene (LPA), which was considered one of the most polymorphic transcribed genes in the human genome, researchers reported several polymorphism in LPA gene which associated with CHD and plasma Lp(a) levels. Recently, a single nucleotide polymorphism (SNP) rs3798220, also known as Ile4399Met, encoding an isoleucine to methionine substitution located in the protease-like domain of apo(a) at amino acid 4399 have been shown to be associated with CHD and plasma Lp(a) levels in Caucasians. This study investigated the association of SNP rs3798220 with plasma Lp(a) in a large scale of samples representing genetically diverse populations. The study showed that the heterozygous carriers of SNP rs3798220 (Ile/Met) had 2.8 fold higher serum Lp(a) levels with a mean of 64.3 mg/dL and 95% CI [63.1, 65.5] (p =0.0000) compare to serum Lp(a) levels of homozygous non-carriers (Ile/Ile) having a mean of 33.4mg/dL and 95% CI [33.0, 33.6]. Interestingly, this study showed that the homozygous carriers (Met/Met) have 2.1 fold lower plasma Lp(a) than non-carriers (Ile/Ile) with a mean of 24.5mg/dL (p = 0.0034) and 6 fold lower than heterozygous carries (Ile/Met). This study also concluded that there was a clinically significant association between carriers of Ile/Met (genotype ag) and Met/Met (genotype gg) with high serum Triglyceride levels.

O66

Novel Pyrazolo [3, 4-d] Pyrimidine Derivatives as Breast Anticancer Agents

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Background: Breast cancer, a complex and intrinsically heterogeneous disease, present a serious clinical problem and pose significant social and economic impacts on the healthcare system. Despite great advances in understanding the molecular etiology of cancer, therapeutic strategies against these diseases are still largely lacking. Therefore, acceleration of the discovery of new therapeutic agents for this disease is of enormous interest. In the present study a series of new Pyrazolo [3,4-d] pyrimidine derivatives were examined for their cytotoxicity activity towards several human breast cancer cell lines. Methods: The cytotoxic activities of synthesized compounds (a1-8) were evaluated by MTT reduction assay in three human breast cancer cell lines including MCF-7, T-47D and MDA-MB-231. The percentage inhibition of viability for each concentration of compound was calculated compared to the control wells and IC50 values (concentration of the compound that induces 50% inhibition of cell viability) were calculated by nonlinear regression analysis, expressed in Mean ± SD. Results and discussion: Rapid glance to the obtained results revealed the all test compounds a1-8 possessed potent activity against human tumor cell lines (IC50<15 µg/ml). In particular, the IC50 of a4 for T-47D cells was 0.45 ± 0.2 µg/ml, which is 17 fold potent than etoposide as positive control with an IC□□ of 7.7 ± 0.7µg/ml. These results suggest most of the Pyrazolo [3, 4-d] pyrimidine analogs showed more activity than standard drug (etoposide) and might potentially constitute a novel class of anticancer agents, which requires further studies.

Keywords: Breast Cancer, Anticancer, Pyrimidine Derivatives

O67

The Investigation of Congenital Hypothyroidism Screening Results in Neonates Which Returned to Booali Hospital in Tehran at 2014

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Subject: A survey to study the investigation of congenital hypothyroidism screening results in neonates which returned to Booali hospital in Tehran at 2014.Introduction: Congenital hypothyroidism (CH) is a preventable cause of mental retardation, which can be prevented in the case of early diagnosis and treatment. Clinical diagnosis of CH without neonatal screening is just impossible to do early enough in order to be effective, thus screening of CH in communities is essential. In this way, the screening program which is feasible, accessible and less costly for public must be implemented. The main goal of this research is study the investigation of congenital hypothyroidism screening results in neonates which returned to Booali hospital in Tehran at 2014.Material and methods: Our study has been done in the form of cross sectional descriptive - analytic at Booali hospital in Tehran and has been used neonates which their old were in the range of between 3-30 days. Totally were sampled among the 233 neonates, in whole of the year. Results: Totally 14 neonates suspected to illness that one case was certainly CH.There was a significant positive relation between suspected cases and the history of admission in neonates (P<0.006), and the birth weight (P<0.001), and the family weddings (P<0.001), and the mother thyroidal illness histories (P<0.001). In neonates with birth weight < 2500 gr number of suspected cases was higher than cases with birth weight > 2500 gr. There was a significant positive relationship between the family weddings and low birth weights (P<0.001), and history of admission (P<0.001), and prematurity (P<0.001). Conclusion: Our results confirm that prevalence of CH in Iran is greater than other countries .Attained measures in this study for hypothyroidism prevalence (4 in 1000 lived birth) is higher than the state statistics (1 in 1000 lived birth) which maybe its reason is relative to the little number of samples and research of one screening center. Totally, high prevalence of CH in Iran demonstrate the importance of good performance of CH screening program.

Keywords: Screening, Congenital Hypothyroidism, Neonate

O68

Evaluation of Some Pathological and Biochemical Parameters of Thyroid Cancer in Isfahan

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Introduction: Thyroid cancer is the most common cancer of the endocrine system in the world and variety of clinical, pathological, immunological factors and genetic are involved in its creation. Concurrent with the growing cancer in the country the highest rate of thyroid cancer can be seen in Isfahan. This is a clinical and pathological study of this disease in the Isfahan province. Methods: In this descriptive analytical study, biopsies and tests of the 211 sergical patients due to thyroid cancer who were referred between 92-93 years to the Sepahan clinical and pathological laboratory were evaluated and data were analyzed by spss-20 software Results: The pathology results of this study showed that both lobe were involved in most patients (59.2%) who 42.4% if these cases were in the range of 30-40 years and 89.3% of these were female. In other patients right lobe involvement (27%) was more frequent than left lobe (13.8%). 17.53% of the patients were infected to Hashimoto simultaneously and in 14.6% of individuals was observed metastasis. Evaluation of serum patients after a month of surgery, showed controlled TSH in 23.7% of them and continuation the kind of thyroid disorder in others (76.3%). Also in 69.2% of cases the level of thyroglobulin and in 40% the thyroglobulin Ab level was abnormal. Conclusion: These results suggest the simultaneous involvement of both lobes in most cases and require additional treatment in many cancer patients due to ineffective and inadequate surgery. Clearly, further studies are needed to investigate various aspects of thyroid cancer.

Keywords: Thyroid Cancer, Thyroid Lobe, Thyroglobulin, Thyroglobulin Ab

O69

Molecular Biomarkers of Thyroid Carcinoma

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Background and purpose: Thyroid carcinoma is the most common endocrine neoplasi. Like the other cancers, early detection of thyroid cancer playes an important role in the treatment and prevention of disease progression. In recent years many efforts have been carried out to detect molecular biomarkers for early prediction, diagnosis, and prognosis of different types of cancers. This article is a review on different researches about biomarkers of thyroid cancers. Methods: Original articles related to biomarkers and thyroid cancers were found by search in different databases between 1996 and 2015. According to different types of thyroid cancers, the obtained articles were considered and reviewed in different four sections. Results: In the most cases FNA allows to determine the nature of thyroid nodules. However, this method is faced some limitations especially for detection of the lesions related to fulicular thyroid cells. In order to optimize the accuracy of diagnosis and to offer new prognostic criteria, several immunohistochemical and molecular markers have been proposed which most of them should be achieved verification in order to be used in clinical application. Conclusion: In spite of the large volume of data based on the discovey of different biomarkers for thyroid cancers, few of them could be useful in clinical applications. In overall, it is important to mention that in many cases using each of these molecules alone will not be most useful for diagnosis, prognosis and prediction, and the combination of two or more biomarkers will be helpful.

Keywords: Biomarkers, Medullary Thyroid Cancer, Papillary Thyroid Cancer, Follicular Thyroid Cancer, Anaplastic Thyroid Cancer

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O70

Evaluation of Iodin in Urin of 7-10 Years Old Students in Isfahan & Charmahal Bakhtiari in 1392

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Introduction: Iodine is essential to make thyroid hormones, since over 90% of iodine is excreted through the urine, measuring iodine in urine is a good indicator of iodine intake status. This research is done to monitor iodine intake in1392 in student of 7 to 10 age of Isfahan and Chaharmahal bakhtiari. Methods: This is a Cross-sectional study and samples were selected from random urine of 730 male and female students. Iodine was measured by acid digestion method and Classified according to the World Health Organization classified. Result: Isfahan and Chaharmahal selected samples were respectively 480 and 250. Middle Iodine amount in Isfahan was 16.3 mg/dl and in 87.2% was more than 10 mg/dl, 8.7% was between 5 to 9.9 mg/dl, 4.1% was less than 5 mg/dl and no one was less than 2 mg/dl. Middle Iodine amount in chaharmahal was 23.6 mg/dl and in 96.4% was more than 10 mg/dl, 2.4% was between 5 to 9.9 mg/dl, 1.2% was less than 5 mg/dl and no one was less than 2 mg/dl. Conclusion: There is no Difference in the amount of iodine in urine between the sexes and between urban and rural students. Since Isfahan and Chaharmahal were situated in Endemic goiter areas before iodine enrichment, the findings of this study Indicate that urinary iodine student in Isfahan and Chahar Mahal Bakhtiari is desirable of the World Health Organization limit. Therefore, the mentioned provinces are among the areas without iodine shortage in this period.

Keywords: Urine, Iodine, Goiter

O71

A Study of Congenital Hypothyroidism Screening Project in Kermanshah – 1392

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Summary Congenital Hypothyroidism is one of the major causes of mental retardation in children which can be prevented if treated immediately. The incidence of the disease is estimated to be 1 in 3000-4000 live births in the world, 1 in 3801 live births in Europe and according to available statistics 1 in 1000 live births in Iran. The aim of this study was to evaluate the recall rate in Congenital Hypothyroidism Screening Project using the standard method of measuring TSH and T4 levels and comparing the results with each other and other societies. Materials and Methods: From Farvardin to Esfand 1392 the heel blood samples of 3-5 day old newborns, referred from all maternity wards in Kermanshah. Were collected for the first TSH level measurement and in the next step venous blood samples were taken to measure TSH and T4 levels both using ELISA method. Newborns with TSH = 5-10 IU/ML in first measurement or TSH> 10 0 IU/ML in second measurement recalled and with TSH>10-20 in first test and T4<6.8 in second test they were considered Congenitally Hypothyroidic and underwent treatment. Results: 33826 newborns consist of 16339 (%48) girls and 17487 (%52) boys were in the study with the following results: 33767(%99.8) newborns → normal TSH level 59(%0.2) newborns → ab normal TSH level According to the above figures the incidence rate of Congenital Hypothyroidism is 1.7 in 1000 in kermanshah. Conclusion: The results indicate nearly the same incidence rate in comparison with the nationwide average rate. Regarding some delay referred cases causing a newborn to show symptoms of the disease, an effective surveillance system to check the quality of the laboratory methods seems crucial.

Keywords: Congenital Hypothyroidism, Kermanshah

Iranian Association of Clinical Laboratory Doctors

Research in Laboratory Sciences: Clinical Immunology and Serology O72 - O77

Besides monitoring invading pathogens and mounting appropriate responses against potentially harmful microorganisms in pathological conditions, the immune system is also responsible for surveillance of all biological processes at cellular and molecular levels in physiological circumstances. The result of such a close inspection is smart controlling of biological processes and establishment of an integrated balance in functionality of different biological systems. Any deviation from such balance could potentially leads to a broad spectrum of diseases such as immunodeficiency, autoimmunity and hypersensitivity. From another point of view, alteration in antigen repertoire of the body, as occurs in infectious diseases; cancer and transplantation, induces a new balance in humoral or cellular arm of the immune system which can be traced closely in clinical laboratory.

Screening tests in clinical immunology laboratories for detection of such alterations has steadily progressed during recent years. Basic researches in clinical immunology have made a tremendous improvement in diagnostic approaches of the clinical laboratories. The main scope of such researches is to provide precise, accurate, sensitive, specific, fast and reliable methodologies for monitoring of primary and subtle changes in antibody repertoire as well as biomarkers of cancer, autoimmunity, allergy and hypersensitivity, immunodeficiency and graft rejection. With such a delicate approach, the modern clinical immunology has provided the possibility of in time and accurate diagnosis of relevant diseases and monitoring of treatment process efficacy.

The aim of this session is to introduce the up-to-date scientific achievements in immunologic diagnosis and to persuade students and clinical laboratory scientists for active participation in relevant research activities.

Dr. A. H. Zarnani, DCLS, PhD

O72

Evaluation and Comparison of Indirect Immunofluorescent Antibody Test (IFAT) and Direct Agglutination Test (DAT) by Standardized Antigen in Visceral Leishmaniasis

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Human visceral leishmaniasis (HVL) is endemic in several foci in IRAN, such as Ardebil and Fars provinces (in North western and south part of IRAN) and in some region as sporadic. Visceral leishmaniasis in Iran is Mediterranean type and the causative agent is leishmania infantum and its main reservoir is dog. In this study direct agglutination test (DAT) was compared with indirect fluorescent antibody test (IFAT) for the diagnosis of visceral leishmaniasis in patients suspected of kala-azar. A total of 70 serum samples collected from suspected kala-azar patients mainly in the kala-azar endemic areas. The leishmania infantum antigens (MHO/TN/80/IPTi) for these studies were prepared in Department of parasitology, school of medicine, Isfahan University of medical sciences. the principal phases of the procedure from making DAT antigen were mass production of promastigotes of leishmania in the RPMI1640 + fetal bovine serum, Trypsiniznation of parasites, staining with comassie blue and fixing with formaldehyde. The human serum samples were tested by DAT, as well as, by IFAT, with the L.infantum antigen prepared in our laboratory. The sero positive rate (SPR) with DAT in titers of ≥ 1:3200 was 91.4% and with IFAT in titers of ≥ 1:80 was 94.3%. Geometric means of reciprocal titers (GMRT) were 6309 for DAT and 692 for IFAT. Therefore, as the titers of ≥1:3200 are usually considered positive in DAT. The titers of ≥1:80 were regarded as position in IFAT. The coincidence of the two tests were 92%. These results showed that a simple local laboratory with one or two trained technicians is quite sufficient for DAT, sero-diagnosis and serological survey of kala-azar in an endemic area. According to the results of these studies, it seems that in Kala azar endemic areas, the clinical symptoms of Visceral leishmaniasis, particularly among the children with DAT antibody titers ≥1:3200 is a good indication for specific treatment of Kala-azar.

Keywords: Visceral Leishmaniasis (Kala-Azar), Indirect Immunofloresent Antibody Test (IFAT), Direct Agglutination Test (DAT)

O73

Analysis of Expression Level of Basophil Activation Markers in Diagnosis of Pediatric Asthma Using Real Time PCR

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Background: Asthma is very common in children and its diagnosis is based on clinical manifestations, which can be misdiagnosed by other respiratory diseases with similar signs and symptoms. Objective: The important role of basophil and its markers like ST2L and CD203c has been evaluated in asthma in previous studies. The objective of this study was to analyze the expression of mentioned markers in the diagnosis of pediatric asthma using real time PCR. Methods: Basophils were purified from whole blood sample of patients and healthy controls using ficol-Paque gradient and Basophil Isolation Kit II human. RNA extraction was done by RNX-Plus solution and after synthesis of cDNA, the markers' expression was analyzed by means of real time PCR. Results: Patients expressed significantly higher levels of CD203c than normal ones (P=0.01). Although there was an increase in the transcription level of ST2L gene in patients, the results were not statistically significant compared to the healthy controls ($p > 0.05$). Specificity of 60% and sensitivity of 73% was shown using ROC curve for CD203c expression. Also, there was a significant correlation between expression of these two genes. Patients with positive family history with asthma had more CD203c and ST2L expression ($p < 0.05$). Conclusion: It is proposed that determining CD203c expression by real time PCR may be a technique for asthma diagnosis.

Keywords: Children Asthma, Basophil Activation Markers, CD203c, ST2L, Real Time PCR

O74

Source of Errors and Standardization of Immunoassay Techniques

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Immunoassays which are based on interaction of of antigens and its complementary molecule antibody is widely used due to stability of antibodies, their ease of production and capability to bind labels, therefore routinely used to measure auto Ab, hormones and tumor markers. According to annual reports of CAP the US court deal with several debate of patients and laboratories which made mistake in immunoassay procedures and millions of dollars paid to these patients. The main goal of immunoassay standardization is to maximize the specific reactions and minimize the nonspecific reactions. Nonspecificty is either due to heterogeneity of analytes or cross reactivity and matrix effects.Errors usually occur when there a background noise or a level of analytes are measured (hook effect) or there is interference of anti animal antibodies (AAA) and /or heterophil antibodies are involved. Proper maintenance of instruments and accurate and timely regulated calibration, the use of suitable control sera of different sources (tri-level controls), definite data analysis, keeping records of errors and troubleshootings and regular audits and documentation are parts of a quality assurance program.

Keywords: Immunoassays, Troubleshooting Quality Assurance

O75

Autoantibodies as Diagnostic Cancer Biomarkers

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The widespread use of screening methods for detection of cancers has made it possible to detect malignancies in early stages of development. However, detection rate is far from expectation due to inherent flaws associated with diagnostic modalities. In this context, development of more accurate diagnostic methods is of current focus of researches. Recent advances in such diagnostic approaches lie in cancer immunosurveillance mediated by immune system. Every subtle changes in expression level or sterochemical composition of proteins are closely monitored and responded by humoral immunity. Such responses are usually manifested by the emergence of antibodies to the proteins not regarded as self due to the posttranslational modifications they undergo during the process of carcinogenesis. Such autoantibodies have been proposed as diagnostic tool for early detection of cancers. Specificity, sensitivity and positive predictive value of such serological tests have been dramatically increased by using a panel of autoantibodies directed against multiple cancer-associated neo-epitopes. Currently, this diagnostic approach is widely assessed for its potential applicability in early detection of breast, colon, lung, liver, prostate and stomach cancers. The preliminary results highlight the potential usefulness of autoantibodies detection for cancer prediction and there is a growing hope for their future use as diagnostic cancer biomarkers.

Keywords: Cancer, Biomarker, Early Detection, Autoantibody

O76

Serum Levels of Soluble CD26, a Novel Prognostic Marker for Acute Hepatitis E Infection

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Background: Even without treatment, most of acute hepatitis E virus (HEV) infected patients resolve HEV but sometimes the disease leads to acute liver failure, chronic infection, or extrahepatic symptoms. The mechanisms of HEV pathogenesis appear to be substantially immune mediated. However, the immune responses to HEV are not precisely identified. The aim of this study was evaluation of Th1/Th2 ratio by determining serum soluble markers from Th1 and Th2 cells in acute HEV infected patients. Methods: This case control study included 35 acute HEV infected patients and 35 age and sex matched anti-HEV negative healthy controls. The serum levels of IFN-γ, IL-4, soluble CD26 (sCD26) and sCD30 were determined by enzyme-linked immunosorbent assay. Results: The results showed a significant difference in IFN-γ and sCD26 (P<0.0001 and P=0.001) but not IL-4 and sCD30 (P=0.354 and P=0.159) between acute HEV patients and controls, respectively. There was only a positive direct correlation between serum levels of sCD26 and IFN-γ in acute HEV patients (r=0.64, P=0.001). In addition, the ratio of sCD26/sCD30 in acute HEV group was more than two fold higher than in HEV negative controls. conclusion: Acute HEV infection shows a pattern of Th1-type immune response and a direct significant positive correlation between the serum level of sCD26 and IFN-γ in acute HEV infected patients, suggesting that the trend of sCD26 levels is a valuable marker for predicting hepatic inflammation in hepatitis E.

Keywords: Acute Hepatitis, Hepatitis E Virus, Soluble CD26, Soluble CD30, IL-4, IFN-γ

O77

Next Generation Testing of Antinuclear Antibody (ANA) By Combination of Screening and Confirmatory Testing

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Introduction: For the serological diagnosis of systemic autoimmune rheumatic diseases, a two-tier approach starting with sensitive antinuclear antibody (ANA) detection by indirect immunofluorescence (IIF) on HEp-2 cells followed by characterization of positive findings with different immunoassays is recommended. To overcome drawbacks of this approach, we developed a novel technique allowing the combination of screening and simultaneous confirmatory testing. Thus, for the first time, this creates the basis for next-generation ANA testing. Methods: ANA and autoantibodies (autoAb) to dsDNA, CENP-B, SS-A/Ro52, SS-A/Ro60, SS-B/La, RNP-Sm, Sm, and Scl-70 were determined by IIF and enzyme-linked immunosorbent assay (ELISA), respectively, and compared to simultaneous analysis thereof by second generation ANA analysis in patients with systemic lupus erythematosus (n = 174), systemic sclerosis (n = 103), Sjögren's syndrome (n = 46), rheumatoid arthritis (n = 36), mixed and undetermined connective tissue diseases (n = 13), myositis (n = 21), infectious disease (n = 21), autoimmune liver disease (n = 93), inflammatory bowel disease (n = 78), paraproteinemia (n = 11), and blood donors (n = 101). Results: There was very good agreement of second generation ANA testing with classical one by IIF and ELISA regarding testing for ANA and autoAb to dsDNA, CENP-B, SS-B, RNP-Sm, Scl-70, SS-A/Ro52, and SS-A/Ro60 (Cohen's kappa [κ] > 0.8, respectively). The agreement for anti-Sm autoAb was good (κ = 0.77). The differences of both approaches were not significant for autoAb to SS-B/La, RNP-Sm, Scl-70, SS-A/Ro60, and SS-A/Ro52 (McNemar's test, p>0.05, respectively). Conclusions: Second generation ANA testing can replace the two-tier analysis by combining IIF screening with multiplex confirmative testing. This addresses shortcomings of classical ANA analysis like false-negative ANA findings and lack of laboratory efficiency and standardization.

Keywords: Antinuclear antibody, systemic autoimmune rheumatic disease, standardization, second generation ANA testing, digital fluorescence

Iranian Association of Clinical Laboratory Doctors

Research in Laboratory Sciences: Clinical Microbiology O78 - O84

Doing research in the field of Microbiology plays an important role in improving laboratory techniques and developing new methods and equipment. As Microbiology includes bacteriology, virology, mycology and parasitology, and each has special importance in medical diagnostic laboratory, presenting research findings in each of these fields, in scientific communities, plays a significant role in improving the scientific levels of academic partners involved in medical diagnostic laboratory as well as the quality of respective services.

Among Microbiology research topics, it can be pointed to "comparison of different laboratory methods for detection and identification of infective agents, investigation of different infection types in certain patients, epidemiology of infective diseases at different locations, drug resistance, investigation of the effects of various pharmaceutical composition or vaccine on the prevention and treatment of infections, and fundamental research in the above-mentioned sciences".

Hope researchers increase the scientific level of the congress and take major steps towards improvement of medical diagnostic laboratory by presenting their research results in different fields of Microbiology.

Dr. M. Parsania, PhD

O78

Detection of Efflux Pump Genes, adeA, adeB, adeC and abeM, in Acinetobacter Baumannii Isolated from Hospitalized Patients, North-West of Iran

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Background and Objectives: A. baumannii is known to be an important nosocomial pathogen, isolated predominantly in intensive care units (ICUs), and responsible for severe infections. A. baumannii are usually multidrug resistant (MDR), showing resistance to the third generation cephalosporins, aminoglycosides and fluoroquinolone. The first pump described, confers resistance to aminoglycosides, tetracyclines, fluoroquinolones, chloramphenicol, and trimethoprim [4] and reduced susceptibility to tigecycline. AdeABC, primarily, and adeFGH play a major role in acquired resistance. The aim of this study was to determine the prevalence of adeA, adeB, adeC and abeM type genes among A. baumannii isolates from hospitalized patients in Imam Reza hospital in Tabriz, Iran. Material and Methods: Antibiotic susceptibility tests were performed by Kirby-Bauer disc diffusion and E-test methods. The prevalence of efflux pump genes were detected by PCR and sequencing methods. Results: The resistance of A. baumannii isolates against tested antibiotics was as follows: 51 (84%) to trimethoprim-sulfamethoxazole, 59 (98%) to ceftazidime, 60 (99%) to ciprofloxacin, 29 (48%) to amikacin, 46 (77%) to gentamicin, 30 (50%) to tobramicin, , 60 (99%) to imipenem, , 60 (99%) to meropenem, , 60 (99%) to ceftriaxon, , 60 (99%) to cefepime, , 60 (99%) to ofloxacin, 6 (11%) to colistin. Using E-test 45 (73.3%) to imipenem, 57 (93.3%) to ciprofloxacin, 23 (38%) to amikacin. The prevalence of adeA, adeB, adeC and abeM genes was 54 (88.5%), 61 (100%), 57 (93.9%), and 60 (98.3%), respectively. Conclusions: The result of this study shows high incidence of adeABC efflux pump in MDR A. baumannii and the growing number of nosocomial infection associated with XDR A.baumannii complex leading to difficulties in antibiotic therapy.

Keywords: Acinetobacter Baumannii, Minimum Inhibitory Concentrations (MIC), Efflux Pump, Adeabc

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O79

Detection of ant(2′′)-Ia and, aac(3) - IIa Genes Induced Aminoglycoside Resistance in Clinical Isolated of Uropathogenic Escherichia Coli

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Background and Aims: Urinary tract infection is a very common disease and Escherichia coli as the most common cause of urinary tract infections are discussed and more than 80% cases, respectively. Several mechanisms of resistance to aminoglycoside antibiotics have been postulated. Resistance to aminoglycosides is often due to aminoglycoside modifying enzymes. The aim of this study was the detection of aac(3)-IIa gene among aminoglycoside resistant of E. coli clinical isolates. Materials and methods: 151 clinical isolated of E.coli were collected and their antibiotic susceptibility patterns were determined by disk diffusion method for gentamicin, tobramycin, neomycin, kanamycin, netilmicin and amikacin were performed according to Clinical and Laboratory Standards Institute (CLSI) guidelines. All aminoglycoside isolates were examined for determination the aac(3)IIa and ant(2``)Ia gene by using PCR method. Results: Antimicrobial susceptibility tests revealed that 34.4% of E. coli isolates were resistant to kanamycin, 2.6% resistant to netilmicin, 27.8%,% resistant to gentamicin, 21.8%,% resistant to tobramycin, 13.2% resistant to tobramycin and 6.6% resistant to amikacin. aac(3)IIa was found in 86.3% and ant(2``)Ia was found in 6.8% of E.coli isolates. Conclusion: The high prevalence of aac(3) IIa gene in this study could be attributed to clonal spread of the strains harboring this gene, which could be controlled by successful implementation of infection control measures.

Keywords: Aminoglycoside, Escherichia Coli, Aac (3)-Iia, Ant(2``)Ia

O80

Identification of Human Papilloma Virus Infection in the Pap Smear Samples Using Liquid Based Cytology and Polymerase Chain Reaction in Birjand

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Background: Human papillomaviruses (HPVs) belong to Papillomaviridae family. To date, more than 200 types have been identified according to their biological, oncogenic potential and Phylogenetic position. There are about 40 HPV viral types that are commonly found in the genital tract which are classified in the Alphapapillomavirus genus. Many studies have indicated a causal relationship between genital HPV infections and cervical cancer. This study aimed to evaluate detection of HPV with direct examination and molecular methods. Method: This study included 130 women visiting gynecologist and given a Pap smear sample. Liquid- based cytology was done for Pap smear testing and koilocyte detection. The remaining sample of Pap smear liquid subjected to DNA extraction. Finally HPV DNA testing was conducted using DNA amplification by Polymerase Chain Reaction (PCR) using the degenerate consensus primers MY09 and MY11which amplify a region of 449–458 nucleotides of the highly conserved L1 ORF. Results; the mean age of patients was 31/67years. Cytopathology testing showed that only 3 % had an abnormal cytology, with a predominance of atypical squamous cell of undetermined significance cases. Direct examination showed that 23 cases (17.7 %) were positive for HPV (koilocyte positive), from which 22 cases (95.65 %) had also HPV DNA. Moreover 7 other cases of negative cytology result had HPV- DNA; overall 22.3 % were PCR positive. Conclusion; Based on these data, a combination of cytology and HPV DNA testing allows for identification of patients with HPV infection and improves cervical cancer prevention.

Keywords: HPV, Cervical Cancer, PCR, Pap smear

O81

The Molecular Method in Diagnosis of Ocular Toxoplasmosis in Tehran

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Toxoplasmosis is one of the most prevalent parasitic infections common between human and animals. The disease can be either acquired or congenital. Toxoplasma gondii (T. gondii) is considered as an opportunistic and dangerous infection in immunusuppressed individuals or pregnant women. The parasite reaches to the eye and its retina through circulation and causes irrecoverable chorioretinitis. Attack to the eyes is chronic and sometimes infection relapses and the damaged retina and choroid would not repair. The posterior pole scares can persist a serious threat for the vision. Other symptoms of the disease consists of blurred vision, photophobia, vitreous inflammation, active and passive scares, and clinical signs. Molecular methods are carrying out complementary for recognition of acquired or congenital infections. The aim of the current study is to evaluate efficiency (sensitivity and characteristic) of molecular method in isolation of T. gondii in ocular infections patients with healthy immune systems. Method: Blood sampling had done from major ophthalmology centers in Tehran (Farabi, Labbafinejad and Imam Hossein Hospitals). The clinical symptoms were examined and recognized. For examining possible relapse re-sampling was done in 15 and 30 days. Thereafter, the buffy coat of the samples was employed for DNA extraction using Diesel Natural Gas (DNG) kit. For performing the polymerase chain reaction (PCR), primer of the gene B1was applied. Results: Following the PCR, from the 71 blood samples, 34 patients (47%) had positive form of the disease. However, with evaluating the first relapse, two weeks after the first step of the disease, among the 41 patients, 29 (70%) had positive reaction of the disease. These patients even showed positive PCR in the first step. In the third sampling step (30 days later), 19 patients were examined and 9 (47%) had positive reaction. In other words, in the second and the third steps there were no obvious incidents. Conclusion: The diagnosis of T. gondii, often relays on clinical tests. Nevertheless, unusual clinical symptoms or differentiation of the disease from other alternative symptoms make the diagnosis problematic. However, sensitivity and characteristic of molecular PCR is of great interest. To conclude, for definite and final ocular toxoplasmosis diagnosis, clinical and complementary methods such as PCR can be employed.

Keywords: Ocular Toxoplasmosis, Chorioretinal Scar, Retinochoroiditis, Vitreous Inflammation, Uveitis, PCR

O82

The Use of Molecular Methods Penta Plex PCR to Identify the Species of Shigella

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Introduction: Shigellosis is an important cause of diarrhea and inflammatory Dysentry in our country, is especially in summer. Periods of drought can have a role in the Outbreak because these courses are usually well water to city water network. These wells can be retained for a long time and then Shigella infection is spread easily from person to person in the area. Three species of Shigella are responsible for the majority of shigellosis cases: S. flexneri, S. sonnei, and S. dysenteriae. Detection of epidemics due to Shigella is very time consuming with traditional methods, and in many cases can not properly involved in the outbreak strains from endemic strains can be distinguished. Also use them without typing because of some strains has its limits. To solve these problems, a method is needed to power high reliability, low cost, quick and easy to use for classification of Shigella isolates. Recent molecular diagnostic techniques based on nucleic acids, such as PCR, have shown tremendous potential for identifying Shigella spp. and have been increasingly exploited. In this study, we searched for genes unique to the Shigella serovars and used them to design a pentaplex PCR assay. Metod: In this study of 140 patients with acute bloody dysentery in rural and urban health centers in Isfahan stool samples taken and examined Reference Laboratory Isfahan. Samples with cary blair or medium KIA will be sent to the laboratory. All samples were cultured on specific media and then maintained for 24 h at 37 ° C according to standard methods for confirmation differential tests and confirmed the type of bacteria have been used. Methods for PCR Pentaplex, a pair of primers for the genus Shigella invc and 3 primers specific for S. flexneri, Shigella dysenteriae, Shigella sonnei and gene rfc, wbg and rfpB and primers based on the ompA gene was designed as an internal control. Primer sequences are analyzed using the BLAST program. In addition to the internal control PCR product bands (1319 bp), the band has created a range of 211 to 875 bp. Results: 30 of 140 Escherichia coli and 110 Shigella was detected. Shigella strains were positive in 106 of 110 cases for invc gene. 53 of 55 cases Shigella Sonnei were positive for wbgz genes. In fact, the two species were negative for wbgz and invc. 2 of 9 cases Shigella dysenteriae were negative for rfpb genes that may be due to long storage time or repeated cultivation virulence plasmid is lost. And 48 S. flexneri rfc for primers showed 100% sensitivity. In this study, strains of shigella sonnei ATCC9290 and shigella flexneri ATCC12022 as reference strains were used for quality control.

Keywords: Shigella, Dysentry, Pentaplex PCR

O83

Epidemiology of Tinea Capitis in North - East of Iran: A Retrospective Analysis from 1998 to 2012

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Background: Tinea capitis is a common disease of pediatric population. This disease typically follows one of several clinical patterns scaling, hair loss and/or inflammatory lesion, which usually caused predominantly by two dermatophytic genera: Microsporum and Trichophyton. The aim of this study was to investigate tinea capitis and its etiological agents in Sari city of Mazandaran province, Iran. Methods: We studied the spectrum of tinea capitis by means of a retrospective analysis involving 1745 patients referred to the both Reference Laboratory of Medical Mycology (RLMM) and Bo Ali Sina Hospital at Sari, Iran (1998 to 2012). Specimens were assessed by standard mycological techniques based on macroscopic and microscopic morphology. Results: Among all patients, 480 (27.5%) cases (61% males and 39% females) were confirmed through a mycological examination. The peak incidence was in the 5-14 years age group. Endothrix with (54.8%) was the most frequent clinical feature by direct exam. The predominant causative agent of tinea capitis were Trichophyton tonsurans (38.75%) and Trichophyton violaceum (24.8%), followed by Trichophyton rubrum, Trichophyton schoenleinii ,Microsporum gypseum, Trichophyton verrucosum, Trichophyton mentagrophytes, Epidermophyton flocosum . Conclusion: The present study showed that Tinea capitis in North East of Iran (Sari) is mainly due to the anthropophilic species and the most common species were T. tonsurans and T. violaceum. Due to the high frequency of anthropophilic species, future studies may be useful in the development of preventive and educational strategies to reduce healthcare expenditure.

Keywords: Tinea Capitis, Dermatophyte, Sari, Iran

O84

Pathogenesis of Severe Epstein-Barr Virus Infections

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Infection with Epstein-Barr virus (EBV) is frequently asymptomatic, but in adolescents and young adults, may manifest as infectious mononucleosis, a self-limited syndrome of cervical adenopathy, pharyngitis, hepatitis and malaise. However, in some young children, severe, and occasionally fatal disease occurs following EBV infection. The pathogenesis of these different outcomes is unknown but most are thought to involved genetic dysfunction of the cellular immune system. The best studied of these severe EBV syndromes is X-linked lymphoproliferative disease (XLP), a disease caused by mutations in SLAM-associated protein (SAP), an intracellular signalling molecule expressed in T, natural killer (NK) and natural killer T (NKT) cells. We describe two potential mechanisms that provide a pathogenic link between mutations of SAP and susceptibility to EBV, one involving defective recognition of EBV-infected B cells by NKT cells, and the second involving defective antigen presentation by virally infected cells.

Research in Laboratory Sciences: Diabetes O85 - O93

Diabetes is one of the inherited metabolic diseases.According to statistics obtained in 2013, type 2 diabetes makes up about 90% of cases of diabetes. Lifestyle and dietary, overweight and obesity are known as four effective factors in prevalence of this disease. Diabetes is associated with early complications such as Diabetic ketoacidosis, hyperosmolar coma and late complications such as microvascular disorders including retinopathy, nephropathy,neuropathy and macrovascularabnormalities including atherosclerosis.Key factors that lead the patient to the chronic complications include hyperglycemia, dyslipidemia, insulin resistance and AGEs products (Advanced Glycation End Products).However, due to unknown molecular causes, diabetes complications can be observedin people with controlled diabetes.

Recent studies indicate that in addition to the above mentioned, growth factors, some of thebinding-proteins, glycation of some protein receptors, vitamindeficiencies, and intracellular oxidative stress are effectivein creation of Diabetes complications.

Therefore,researchers are looking for biomarkers that can be used to quickly realize the complications and provide more favorable conditions for diabetic patients bydiet and medication modifications.

Dr. L. Hosseni Gohari, PhD

O85

Decreased Plasma Levels of CTRP5 in Patients with Type 2 Diabetes and NAFLD in Comparison with Healthy Subjects

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It is well-established that nonalcoholic fatty liver disease (NAFLD) is associated with type 2 diabetes (T2DM) and obesity. Complement-C1q TNF-related protein 5 (CTRP5) is a novel adipokine involved in the regulation of lipid and glucose metabolism. We aimed to assess plasma circulating levels of CTRP5 in patients with NAFLD (n=22), T2DM (n=22) and NAFLD with T2DM (NAFLD+T2DM) (n=22) in comparison with healthy subjects (n=21) and also to study the association between CTRP5 levels with NAFLD and diabetes-related parameters. All subjects underwent anthropometric assessment, biochemical evaluation and liver stiffness (LS) measurement. Insulin resistance (IR) was determined by the homeostasis model assessment (HOMA). Plasma CTRP5 levels were measured by enzyme-linked immunosorbent assay. We found significantly lower plasma levels of CTRP5 in patients with NAFLD+T2DM, NAFLD and T2DM (122.52 ±1.92 ng/ml, 124.7 ± 1.82 ng/ml and 118.31± 1.99 ng/ml, respectively) in comparison with controls (164.96± 2.95 ng/ml). In the whole study population, there was a significant negative correlations between CTRP5 and body mass index (BMI) (r= -0.337; p=0.001), fasting blood glucose (FBG) (r= -0.488; p<0.001),triglyceride (TG) (r= -0.245; p=0.031), HOMA-IR (r= -0.492; p<0.001),insulin(r=-0.338; p=0.002), LS (r= -0.544; p<0.001), alanine aminotransferase (ALT) (r= -0.251; p=0.027),urea (r=-0.231; p=0.041) and waist circumference (WC) (r= -0.357; p=0.001). Based on logistic regression analysis, the decrease in circulating levels of CTRP5 remained as a significant risk factor for NAFLD, T2DM and NAFLD + T2DM, independently from BMI and HOMA-IR. In conclusion, it appears that the decreased levels of CTRP5 might contribute to the increased risk of T2DM and NAFLD.

Keywords: NAFLD, T2DM, CTRP5

O86

Therapeutic Effects of Tretinoin on the Insulin Level of Plasma in Streptozotocin Induced Diabetes in C57BL/6 Mice

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Background: Type 1 diabetes is a T-cell mediated autoimmune disease characterized by the selective destruction of insulin producing β -cells in the pancreatic islets of Langerhans. Tretinoin have a variety of biological activities, including immunomodulatory action in a number of inflammatory and autoimmune conditions. The purpose of this study was to investigate the therapeutic effects of Tretinoin on plasma levels of insulin in streptozotocin-induced Diabetes in C57BL/6 mice. Methods: Diabetes was induced by multiple low-dose of streptozotocin (MLDS) injection (40 mg/kg/day for 5 consecutive days) in male C57BL/6 mice.Mice were considered diabetic when their fasting blood glucose levels were >250 mg/dl. Subsequently, the mice were allocated to three therapeutic groups (n=7 per group) (Normal control group, MLDS group andTheratment group). In theratment group, mice were treated with Tretinoin (20 mg/kg/day i.p.) for 21 days. Before mice were euthanized, blood was collected from each mouse on day 21 in heparinized tubes. Plasma was separated and stored at -80 C until plasma insulin assay. The insulin level of plasma was determined using a mouse insulin ELISA kit (Mercodia). Results: Plasma insulin level was significantly decreased in MLDS-treated mice compared with that in the normal control group. Tretinoin prevented the MLDS-induced reduction in plasma insulin, indicating a possible protective effect of Tretinoin against β-cell damage. Conclusion: Our data suggest that Tretinoin may possess therapeutic effects on type 1 diabetes.

Keywords: Type 1 Diabetes, Plasma Levels of Insulin, Tretinoin

O87

The Relation between Serum Ferritin and Type 2 Diabetes Mellitus

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Introduction: Ferritin is the most important iron conserving protein in human body, Increased body iron stores may be related to various metabolism by type 2 diabetes. The aim of this study was to finding the relationship of serum ferritin level and hyperglycemia in type 2 diabetic patients and comparing the results with healthy people، aged 45-60 years، in Ahvaz. Materials and methods: This case-control study was done on 90 diabetic patients (50 females – 40 males) and 90 healthy people (50 females – 40 males), aged 45-60 years، and this study was performed in ahvaz in south west Iran in 2014. Serum Ferritin level, fasting blood glucose (FBS), 2 hour Post Prandial (2hpp), (HbA1C) were measured in all cases. Serum ferritin was evaluated by ELISA method and statistical analysis was conducted with independent sample t-test. Results: The results showed that there is a significant difference in average level of FBS, (2h PP), (HbA1C) ،and Serum Ferritin between diabetic patients and healthy group (p≤0/0001). Serum Ferritin level of male and female diabetic patients were higher than healthy group with a Significant Difference in two groups .Additionally in male diabetic patients Serum Ferritin level was higher than that of female diabetic patients (p≤0/0001). Conclusion: Current study shows that increased serum ferritin is associated with risk of type 2diabetes.

Keywords: Serum Ferritin, FBS, Two - Hr Postprandial Post Prandial Test (2-H PP), (Hba1c) Type 2diabetes

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O88

Investigation of Resveratrol Supplementation on SNARE Proteins Expression in Skeletal Muscle of Stz-Nicotinamide Induced Diabetic Rats

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Background: Glucose uptake by muscle cells and adipocytes are carried out by the GLUT4 system. Isoforms of the SNAREs proteins including SNAP23, syntaxin-4 and VAMP-2 play an important role in regulating of GLUT-4 trafficking and fusion in skeletal muscle. The changes of SNARE proteins levels and thus impaired GLUT-4 displacement can be one of the etiological causes of type 2 diabetes. The aim of this study was to investigate the effect of resveratrol supplementation on the expression of these proteins in type 2 diabetic rats. Methods: Forty male wistar rats were used in this study. Type 2 diabetes was induced by administering a single dose of Streptozotocin+Nicotinamide. Expression of SNAP-23, syntaxin-4 and VAMP-2 proteins were assessed using Real-Time qRT-PCR. Results: The results showed that SNARE proteins expression was increased in skeletal muscle of diabetic rats compared with healthy rats. The expression of Syntaxin-4 increased more than two other genes, probably due to increased expression of inhibitory munc 18c protein that binds to Syntaxin-4. Also, expression of SNAP-23 increased more than VAMP-2, probably due to the catalytic role of SNAP-23 in formaton of ternary complex of SNARE proteins. RSV supplementation modulated the expression of all three genes, particularly in higher doses; However, the difference was not statistically significant. Conclusion: Final results showed that Streptozotocin along with Nicotinamide lead to a relative decrease in insulin secretion and insulin resistance, which was associated with increased expression of SNARE proteins in skeletal muscle of diabetic rats and resveratrol supplementation able to adjust expression of these proteins.

Keywords: GLUT-4 System, SNARE Proteins, Resveratrol Supplementation

O89

Investigation of the Risk of Type II Diabetes Related to TCF7L2 Gene Variants in Diabetic Families in Isfahan and Comparing the Scale Allele Transmission from Parents to Healthy and ill Offspring

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Introduction: The International Diabetes Federation estimates that by 2025, the number of people with diabetes type 2 would be 333 million people this number can be warning for all countries health systems. But fortunately this disease is preventable.Genes are one of the factors which cause to Diabetes type 2, and the most important of them is TCF7L2. The relation of 7903146 variety with Diabetes type 2 in Iran is proved. Material and Methods: To show the relation between 7903146 variety and Diabetes type 2 in Iranian families and analyze how risk alleles of this variety transfer from parents to offspring, a research on 40 Diabetic families is done in Isfahan. In this research the family members (Parents and offspring) genotyped with PCR-RFLP method and then the statistics analysis is done with SPSS software. Results: The frequency of T allele (Diabetes allele) of rs7903146 (C/T) calculated 50% in Diabetic parents and 39.7% in non-diabetic parents. The frequency percentage of T allele in diabetic mother's offspring is 64.5% in daughters and 28.6% in sons respectively and this frequency in diabetic father's offspring is 48% in daughters and 53.1% in sons respectively. Discussion: The significant difference of T allele frequency between diabetic parents and non-diabetic parents shows the strong correlation of this risk allele with diabetes in Iranian families. The high frequency of T allele in diabetic mother's daughters shows high transmission of this risk allele from mother to daughter. Also high number of TT homozygous in these daughters when compared to sons proves this claim. Totally more frequency of TT homozygous in women than men shows high transfer of this risk allele between women, which increases diabetes probability in this sex.

Keywords: Diabetes Type 2, Allele, Homozygous, TCF7L2

O90

Changes in Expression Levels of Factor Driving the Development of Th1 and Inflammatory Cytokines IFN-Ɣ, in Patients with Type 1 Diabetes

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Introduction: T cells in the pathogenesis of autoimmune diabetes have a major role to play. Although the precise role of the population(s) of these cells have not been identified. In this study were examined relationship between the expression of T-bet, the role of Th1 cell differentiation, and cytokine IFN-γ, which are the main source producing of these cells, in these patients. Methods: In these study 21 patients with type I diabetes and 22 healthy controls were studied. After RNA extraction from blood and synthesis of cDNA, mRNA expression of IFN-γ and T-bet genes using the SYBR Green Real-Time PCR was examined. Results: The expression levels of cytokine IFN-γ in patients compared to healthy controls showed a decline of about twice, which is statistically significant ($P \leq 0.05$). Also the transcription factor T-bet mRNA expression in these patients compared with healthy controls was significantly reduced 25 times ($P \leq 0.05$). This decrease in gene expression of T-bet is about 12 times higher than the IFN-γ gene. Conclusion: According to the results, the reduction of Th1 cells in peripheral blood mononuclear cells is observed in patients with type 1 diabetes. Also reduced expression of IFN-γ, along with decreased T-bet's expression, can be demonstrate a reduction of this cytokine's actual amount and caused by the decrease in Th1 cell subpopulations. Further studies in this context may provide opportunity of accessing treatment methods that may be possible inhibition or repression disease progression by altering cytokine secretion pattern.

Keywords: Diabetes Type 1, Cytokine, Factor Driving the Development of Th1, IFN-γ

O91

Flaxseed Normalized Antioxidant Status and Also Changed ABCG5 and ABCG8 Genes Expression in Diabetic Rat

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Aims: Flaxseed is one of the herbal medicines which has useful effects on treatment of diabetes and cardiovascular disease. Many studies have been showed that flaxseed potentially reduced cholesterol level in diabetic rats. However, the exact hypocholesterolemic effect is not known so far. ATP-cassette binding proteins G5 and G8 (ABCG5 and G8) have critical role in the hemostasis of cholesterol in the intestine. Therefore the aim of this study is to study the effect of flaxseed on lipid profile, antioxidant activity and ATP-cassette binding proteins G5 and G8 (ABCG5 and G8) levels in the liver of diabetic rat. Method: rats randomly were divided into three groups: diabetic rat+flaxseed (treatment group), diabetic rat (control group I), healthy rat (control group II). Afterward one month Serum lipid parameters and also Super oxide dismutase (SOD) activity, reduced glutathione (GSH) and malondialdehyde (MDA) levels were measured. ABCG5 and ABCG8 levels were determined by RT-PCR. Results: Flaxseed markedly reduced malondialdehyde (MDA), total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), triglycerides (TG), very low density lipoprotein cholesterol (VLDL-C) (all of them $P<0.05$). GSH, SOD ($P<0.05$) as well as liver ABCG5 and ABCG8 were significantly increased ($P<0.01$) in flaxseed treated-animals compared with diabetic group. Conclusion: The results of this experiment showed that flaxseed has antioxidant and ani-atherogenic effects. This plant reduced cholesterol levels may be via ABCG5 and ABCG8 transporters in diabetic rats.

Keywords: ABCG5 and ABCG8, Lipid Profile, Antioxidant Activity, Flaxseed

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O92

Influence of Walnut on Blood Lipid and Expression of SREBP-1c and PPARα in Diabetic Rat

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Introduction: Diabetes Mellitus has appeared as a universal burden. Studies have reported that mortality from Coronary Heart Disease (CHD) in diabetic patients is 2-4 times higher than nondiabetics. In this respect, walnut is a treatment which has beneficial effects on CHD risk factors. PPARα and SREBP-1c play an important role in the regulation of lipid metabolism. This study was aimed to evaluate the effects of walnut on lipid profile as well as SREBP-1c and PPARα protein levels in rats. Methods: Animals were randomly divided into 3 groups (n=6); group1: received chow only (control), group2: diabetic rats + chow supplemented with 0.015% w/w T0901317 (Sigma), group3: diabetic rats + chow supplemented with 0.015% w/w T0901317+ 4% of whole walnuts. After four weeks rats were sacrificed, blood was collected; lipid profiles as well as SREBP-1c and PPARα protein levels were determined by western blotting. Results: Compared with diabetic rats walnut significantly decreased serum cholesterol ($p<0.01$), LDL-c ($p<0.01$), triglyceride ($p<0.001$) and VLDL-c ($p<0.001$) and also increased HDL-c ($p<0.05$) compared with diabetic. Moreover, SREBP-1c protein level significantly decreased ($p<0.05$) and PPARα significantly increased in walnut group compared with diabetic group ($p<0.05$). Discussion: The findings showed that walnut administration in diet clinically decreases atherosclerosis risk factors. Lipid profile reduction might be due to the rise of PPARα and the reduction of SREBP-1c by this medical treatment in liver.

Keywords: Walnut, Cholesterol, SREBP-1c, Pparα

O93

Review of Novel Risk Factors and Biomarkers for Predicting Diabetes Complications

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Diabetes is one of the inherited metabolic diseases. Most of the diabetic patients have type 2 diabetes. Besides acute complications, diabetic patients have long term complications such as microvascular disorders, nephropathy, retinopathy and neuropathy. Atherosclerosis is one of the macrovascular complications. Key factors that are pushing patients to show long term complications are hyperglycemia, hyperlipidemia, insulin resistance and advanced glycated end products (AGEs). In some good controlled diabetic patients complications are also observed. Recent investigations show that in addition to the above factors there are novel biomarkers associated with long term complications. These biomarkers include: Metabolic biomarkers (some enzymes, receptors, peptides, & etc); Glycemic biomarkers (glycated receptors, glycated binding proteins & etc.); Oxidative stress biomarkers(some vitamins, glutathione & etc); Lipids related biomarkers (adiponectin, leptin & etc); Endothelial and inflammatory biomarkers(CRP, interleukins & etc), and Genomic markers. Certainly to detect these biomarkers sensitive and accurate methods are needed. Thus to improve quality of diabetic patients life style, original investigations to identify novel risk factors for early predicting and preventing long term complications should be performed by young investigators.

Keywords: Risk Factors, Biomarkers, Diabetes

Research in Laboratory Sciences: Hematology O94 - O100

Research in hematology, like other fields of science, can lead to developmentsin diagnostic services, determining significant prognostic indicators, treatmentmonitoring, and selecting the type and quantity of medications. Considering the importance of stem cells, their applications in medical diagnosis will be subject of the main speech.

The other topic discussed in this meeting is evaluation of therapy response in CML patients using molecular techniques that can be helpful in identifying the type and amountof medications, drug resistance and even changes in the bone marrow transplantation therapy. Furthermore, the specificity and sensitivity assessment of c-kit receptors (CD117) in differentiation of AML-M5 subtypesand its applications in improving the medical diagnosiswill also be dealt.

As you are aware, pharmacokinetics has recently received a remarkable importance in selecting the type and amount of medications. Warfarin is one of the most widely used drugs in cardiovascular patients suffering from thrombophilia. Evaluation of related gene polymorphisms such as VKORC1 and CYP2C9 can reduce the variability in drug usage by 40 percent.

Additionally in this topic, determination of serum levels and the risk of methotrexate-induced toxicity in AML patients by evaluating the MTHFR gene polymorphisms will be discussed. The change ofsignalling pathway in patients with AML and its mechanism will also be dealt.

Dr. B. Poopak, DCLS, PhD

O94

Evaluation of Polymorphisms of CYP2C9 / VKORC1 in Warfarin-Treated Patients

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Today warfarin and other anticoagulant of coumadin are widely prescribed by physicians. Various factors are effective in determining warfarin dose; such as age, sex, diet, other medications and genetic factors. Two major haplotypes in VKORC1 gene (vitamin k epoxide reductase complex, subunit1) and three major gene alleles of CYP2C9 gene (cytochrome p-450 2C9) are genetic effective factors. Generally; polymorphism of VKORC1 and CYP2C9 genes are responsible for 40% of variability in warfarin dose. Methods: In present sectional and primary study, 52 patients with average 26 years old were selected (minimum 5 and maximum 74 years), 42.30% female and 57.70% male. DNA was extracted from peripheral blood samples and DNA concentration was measured using bio photo meter. To determine the type of polymorphism, a test of multiplex polymerase chain reaction was done by using specific biotin labeled primers to allowed by reversed hybridization assay. Discoveries: In this study 44.23% of people were determined with normal allele(GG), 48.08% with Heterozygous allele (AG), 7.7% with Homozygous allele (AA) for VKORC1 gene and 55.77% with normal allele1*1*, 21.15% with 1*2*allele, 17.30% with 1*3* allele , 3.84% with 2*3* allele, 1.92% with 2*2* allele for CYP2C9 gene. Therefore CYP2C9 *1*2 and VKORC1 (AG) were the most abundant polymorphisms. The patients with these polymorphisms must receive less than Warfarin dose, because of changes in Enzymes activities. Results: The frequency of the polymorphism of VKORC1 and CYP2C9 genes is nearly similar to the previous reports and VKORC1 (AG) and CYP2C91*2* allele are the most common polymorphisms .There are people with 2*3*, 2*2*, AA genotypes that show the importance of warfarin genotype in Iranian society.

Keywords: Warfarin, Polymorphism, VKORC1, CYP2C9

O95

Specificity and Sensitivity of C-kit Receptor (CD117) In Differentiation of Aml-M5 Subtypes (M5a and M5b)

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Purpose: Acute Myeloblastic Leukemia (AML) is a heterogeneous group of malignant bone marrow neoplasms that is divided to several types and sub-types, M0 through M7. C-kit receptor (CD117) expression extremely increases in leukemias with myeloid commitment. Acute Monoblastic Leukemia M5 (AML-M5) is an aggressive disease that requires prompt diagnosis and therapy. Flow cytometry immunophenotyping can serve as a screening and diagnostic test for M5a and b sub-types before the results of cytogenetic or molecular testing for are available. Methods: We analyzed findings on CD117 expression together with other myeloid related markers in 203 de novo acute leukemias, referred to two Iranian immunophenotyping centers: Iranian Blood Transfusion Organization (IBTO) and Baghiatallah Hospital (BH). All cases were characterized based on the French American British cooperative group (FAB) and European Group for Immunological Classification of Leukemias (EGIL). Written informed consent was obtained from all patients. Results: The cases comprised of 111 acute myeloblastic leukemia (AML), 86 acute lymphoblastic leukemia (ALL), and 6 acute undifferentiated leukemia (AUL). CD117 was positive in 75 % of AML and 50 % of AUL, whereas none of the ALL cases was positive for this marker. Although CD117 was positive in 100 % of M5a cases, no M5b positive was found ($p = 0.036$). Conclusions: We concluded that CD117 expression is a specific and sensitive marker for differential diagnosis between AML and ALL, and except for M5 subtypes, it fails to determine FAB subtypes; lack of expression in M5 can identify M5b. Therefore, it should be included in the routine primary panel for diagnosis of acute leukemias and can serve as a diagnostic marker in M5 sub-typres.

Keywords: AML, CD117, M5a, M5b, FAB

O96

CXC Chemokines CXCL1, CXCL9, CXCL10 and CXCL12 are Associated with Sickle Cell Disease and Carriers: a Study of Patients from the Southeast Region of Iran

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Background: Sickle cell hemoglobinopathies are amongst a group of genetic disorders resulting from a single base-pair DNA mutation at the beta chain of hemoglobin. Chemokines and cytokines play a part in the pathogenesis of inflammatory and infectious diseases. They are also involved in balancing angiogenesis/angiostasis processes to form new vascular networks. We aimed the present study to measure the circulating CXC chemokines CXCL1, CXCL9, CXCL10, and CXCL12 in the plasma of sickle cell patients (SCD). Methods: This cross-sectional study was conducted at the Kerman Special Disease Center and Rafsanjan Molecular Medicine Research Center during 2010 to 2011. Peripheral blood specimens were collected from 77 children with SCD and 70 controls. Serum samples were isolated and CXCL1, CXCL9, CXCL10, and CXCL12 were measured using ELISA. Results: The findings of this study demonstrated that serum concentrations of CXCL1 and CXCL12 were elevated in SCD patients when compared with controls. Results also showed that the circulating levels of CXCL9 and CXCL10 were decreased in SCD patients in comparison to control subjects. However, we found increased levels of CXC chemokines in SCD patients suffering from pain crisis but the difference was not significant. Conclusions: According to the results of this study it can probably be concluded that the balance between angiogenesis/angiostasis CXC chemokines is an important predictive factor for initiation of complications in SCD patients. The elevated level of pro-inflammatory CXC chemokines may also be related to inflammatory responses associated with SCD complication.

Keywords: CXCL1, CXCL12, Sickle Cell, Chemokine

O97

Dysregulation of the WNT Signaling Pathway Through Methylation of Wnt Inhibitory Factor 1 and Dickkopf-1 Genes among AML Patients at the Time of Diagnosis

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Background: In acute myeloblastic leukemia, a large number of tumor suppressor genes are silenced through DNA methylation such as CDKN2B & p73. Wnt inhibitory factor 1 (WIF1) and Dickkopf-3 (DKK-1) are negative regulators of Wnt signaling pathway. In the present study, we evaluated the methylation status of WIF1 and DKK-1 genes in acute myeloblastic leukemia patients. Patients and Methods: Blood samples were taken from 120 AML patients and 25 healthy control subjects. DNA was isolated, treated with sodium bisulphite, and examined using methylation-specific polymerase chain reaction (MSP) with primers specific for methylated and unmethylated sequences of the WIF1 and DKK-1 genes. Results: The frequency of aberrant hypermethylation of WIF1 and DKK-1 genes in acute myeloblastic leukemia patients were determined to be 35% (42/120) and 28.3% (34/120), respectively. In addition, for all subjects in control group, methylation of WIF1 and DKK-1 genes were negative. Patients with M0 subtype of FAB-AML had the highest incidence of hypermethylation of WIF1 (P = 0.003) and DKK-1 (P = 0.005) genes. Conclusion: The present study showed that, like many solid tumors, WIF1 and DKK-1 genes methylation also occurs in acute myeloblastic leukemia. The study of other antagonists of Wnt signaling pathways are recommended.

Keywords: AML, Wnt Inhibitory Factor 1, Dickkopf, DNA Methylation

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O98

Evaluation of Therapy Response in Iranian CML Patients Using Quantitative PCR According to ELN Guideline 2013

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Chronic myelogenous leukemia (CML) is one of the most widespread myeloproliferative disorders. Approximately 90% to 95% of CML patients have the abnormal Philadelphia chromosome (Ph) that is resulted from a reciprocal translocation between chromosomes 9 and 22. The process of CML treatment would be different according to the stage of the disease. There are three phases in CML including chronic, accelerated, and blastic. Qualitatively and quantitatively evaluation of BCR-ABL is crucial to diagnose the disease and identify the treatment process. Qualitative PCR was used for initial diagnosis of 206 patients with various BCR-ABL fusions. To determine BCR-ABL transcript levels, quantitative real-time PCR (RQ-PCR) was performed according to the international scale. Based on the duration of treatment and type of TKI used, patient's responses to treatment were classified to Optimal, Warning, and Failure according to European Leukemia Net (ELN) guideline for CML management. Overall, 37.37 % of patients showed an Optimal response, suggestive of the best line-term outcome with no indication for a change in treatment. 5.84% had warning response implying that the characteristics of the disease and the response to treatment require more frequent monitoring to permit timely changes in therapy in case of treatment failure. 34.95% of patients placed in Failure category indicating that the patient should receive a different treatment to limit the risk of progression and death. Based on the study results it can be concluded that molecular monitoring of CML patients in a timely manner can be useful to observe the treatment procedure and clinical management of treatment lines.

Keywords: Chronic Eosinophilic Leukemia, BCR-ABL Fusion, Philadelphia Chromosome

O99

Assessment Relationship between C677T and A1298C Polymorphisms of MTHFR Gene and Serum Methotrexate Level and Cytotoxicity in Acute Lymphoblastic Leukemia

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Background: Acute lymphoblastic leukemia (ALL) is the most common childhood leukemia. New therapeutic regimes significantly decreased rate of morbidity and mortality among pediatric patients with ALL. Methotrexate (MTX) is one of the most common and widely used medicines in different treatment stages of ALL. This drug not only decrease burden of leukemia but also adversely affect different body organs including bone marrow (BM), liver, kidney as well as gastrointestinal (GI) system and Central Nervous System (CNS). MTX administrated in high dose during consolidation therapy of patients with ALL. Catabolize and excretion of this high dose of drug required different enzymes such as Methylenetetrahydrofolate reductase (MTHFR). Genetic polymorphisms of MTHFR can decreased the enzyme activity and MTX catabolism that led to high rate of drug related cytotoxicity. Thus, this study aimed to assess the relationship between two common polymorphisms of MTHFR including C677T and A1298C with serum MTX and drug related cytotoxicity in consolidation and maintenance therapeutic phases in pediatric ALL. Method: This case-control study was carried out on 62 pediatric patients with ALL as case group and 90 age and sex matched healthy individuals as control group. Samples were drawn in EDITA containing tube, DNA was extracted by Viogen kit and quality and quantity of extracted DNA were determined by gele electrophoresis and bio spectrophotometer respectively. Required DNA fragments were amplified using standard primer and digested by PCR_RFLP method. Finally obtained data was analyzed by (Statistical Package for the Social Sciences) SPSS software. Results: The mean age of patients was 2.7 year and in control group was 2.5 years ($p<0.05$). We did not observed any statistically significant relationship between 677T and A1298C MTHFR polymorphisms and hepatic, gastric, tubular and BM ($P>0.05$). We also did not find any relationship between 677T and A1298C MTHFR polymorphisms and serum MTX level. Conclusion: It seems that C677T and A1298C MTHFR polymorphisms don't affect the rate of cytotoxicity among pediatric patients with ALL.

Keywords: Acute Lymphoblastic Leukemia, Methotrexate, Methylenetetrahydrofolate Reductase

O100

Stem Cells as Tool for Companion Diagnostics and Personalized Medicine

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Due to their ability to reproduce the embryonic, neonatal and adult differentiation of all different organotypic cellular phenotypes, pluripotent stem cells represent an ideal tool to study physiological processes of embryogenesis under in vitro conditions, as well as to provide the basis of cellular therapeutics, to build up test assay systems for drug discovery or toxicology and to develop novel disease models for companion diagnostics within personalised medicine. In particular embryonic (ES) and induced pluripotent stem (iPS) cells can reproduce all organotypic electrophysiology, signalling cascades and genes involved in the development (functional genomics). This spontaneously occurs within three-dimensional cell aggregates - embryoid bodies (EBs) – which we developed 25 years ago. To select only one lineage, e.g. the cardiac lineage, and to allow for the identification of the transplanted cells, transgenic ES and iPS cells were used. They contained a vector with two cloning sites for EGFP and a puromycin resistance for selection under the alpha-MHC promoter. We aimed at generating iPS cell-derived cardiomyocytes (CMs) and their molecular and functional characterization in comparison to CMs derived from established ES cells on a transcriptomic and electrophysiological level. To demonstrate the ability of ES cells for regenerative medicine and tissue repair, cardiomyocytes differentiated from ES cells were injected into the cryoinfarcted left ventricular wall of adult wild type mice. Translation from the laboratory into the clinic is one of the remaining key issues remaining for applied stem cell research. Within two European consortia ESNATS and DETECTIVE under coordination of Prof. Hescheler a battery of toxicity tests was developed using human ES or human iPS lines subjected to different standardised culture protocols. Tests will cover embryoid bodies in different developmental stages, and differentiated derivatives including gamete and neuronal lineages, complemented with test systems for hepatic metabolism and cardiac development. Predictive toxicogenomics and proteomics markers will be identified. Benefits are to increase safety due to better predictivity of human test systems, to reduce, refine and replace animal tests, to lower testing cost, and to support medium/high throughput testing. Reprogramming of fibroblasts from patients with LQT3 or CPVT syndrome by ectopic expression of the Yamanaka's transcription factors resulted in the generation of iPS cells for disease modelling. This novel approach may also enable patient-specific cell replacement therapies, which appears to be an indispensable prerequisite for later use in clinics. iPS cells from patients may also represent a new diagnostic tool to precisely analyse the pathophysiology and to develop personalised strategies for an optimized therapy.

Iranian Association of Clinical Laboratory Doctors

Screening of Fetal Abnormalities in Pregnant Mothers: Double, Triple Quadruple Marker and Sonography O101 - O104

Screening for anomalies is an essential and important element in the prevention of diseases and can guarantee the achievement of a healthy society based on healthy people, as the incidence of disease in one of the family members disrupts the health and routine life of the other members.

‘’When fate allots a member pangs and pains

No ease for other members then remains’’

In the meantime, screening of pregnant women for diagnosis and prevention of fetal anomalies is one of the important and common methods that has attracted the attention of medical communities in recent years. The significant impacts of these measures have led to remarkable reduction in births disorders, and family and community health improvement.

The components of an optimal screening include careful investigation of maternal and fetal parameters using laboratory and ultrasound diagnostic systems. This means the accurate measurement of hematologic parameters by the laboratory, accurate measurement of fetal limbs and organs by the ultrasound systems, and finally anomaly diagnosis through the statistical analysis using softwares with capability of determining the risk of developing fetal abnormalities, based on the past data from various populations.

Among relatively common disorders that can be identified in this way, Trisomy 21 (Down syndrome) and neural tube defects (NTDs) in the fetus are more important and commonly examined, as these abnormalities often lead to the birth of a living child with severe abnormalities that strongly affects the health of individuals, families and society, over the years ahead.

Fortunately, with approval of the therapeutic abortion law in parliament, great steps have been taken to prevent the birth of fetuses with these problems. However, rapid and accurate diagnosis before 19 or 20 weeks of gestational age is important to get permission for therapeutic abortion.

The Quality Improvement Congress tries to address the factors affecting results of the diagnostic measures with discussing the issue in one of the congress topics, and to discuss the role of laboratory, standards of methods and kits used, impacts of ultrasound results in screening, screening softwares features and capabilities, standards of international institutions such as FMF, and legal consequences of errors in the results of screening.

All activists and interested in this challenging and important procedure are invited to submit the abstracts of their work and experience in order to provide an opportunity for knowledge and experience exchange.

Dr. A. Sadeghitabar, DCLS

O101

Medicolegal Challenges in Complicated Screening Cases

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In recent years new screening tests were defined for some fetal diseases at prenatal period.These methods are done widely in labs and include combined tests, Quad test and others.With sonographic screening based on the interpretation of results, some invasive diagnostic tests such as amniocentesis and CVS are done. Screening tests occasionally are associated with some results which are far from reality or complications which are not desirable and both of them finally poses medicolegal problems that leads to difficult challenges. So it is necessary for medical and legal experts to gather and exchange their ideas about these complicated cases. Hence, According to this reliance, every physician can do his/her responsibility and activities without any stress or tension.

Keywords: Screening Test, Challenge

O102

The Challenges of Maternal Serum Screening Tests in the fields of Physician's Offices, Sonogoraphy Departments, Medical Laboratories and Interpretation of the Results

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Annual live birth rate in Iran is more than 1,500,000, considering aneuploidies frequency such as Down Syndrome (1/700), Edward Syndrome (1/3500), Patau Syndrome (1/5000), it has been anticipated that we may have 2140 cases of Trisomy 21, 430 cases of Trisomy 18 and 300 cases of Trisomy 13 in each year, but fortunately by developing MATERNAL SERUM SCREENING tests in the whole country, the real statistics of these syndromes are noticeably less than the mentioned rate. Although because of some defects such as economic problems of the patients, absence or short coverage of insurance companies or lack of sufficient information among gynecologists or midwifes, these screening tests have not done for all pregnant women in Iran.We know that these tests may have had False Positive Results &also False Negative Results, we know also this task is a group work consists of Gynecologists, Midwifes, Sonologists and Laboratory Specialists and the patient herself, so it is necessary that these members have a good relationship and utmost co-operation for better understanding and increasing the efficiency of the tests. The final report of these tests will sign out by Lab. specialists, so this group must consider all interfering factors which may decrease the efficiency of the tests and other groups must obey all standards and needs of Lab. specialists. In this lecture I try to explain the most important interfering factors which most of them have originated from lack of academic education in this field or applying non-scientific self-tactics.

Keywords: Maternal Serum Screening, Double Marker, Quad Marker, Sequential, NT, Sonography, Questionaries'

O103

The Importance and Necessity of Screening for Fetal Abnormalities: Achieving the Goal of "Healthy Society Based on Healthy People"

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One of the important elements in development of a societyis the health of society members. Birth of a child with a disability not only affects the physical and mental health of family members, but also causes social problems and hinders development of the society. Among the fetal anomalies chromosomal abnormalities, 18, 21 and 13 are more common. Down syndrome (trisomy 21) is of particular importancein terms of the frequency. The risk of Down syndrome is 1:1500 in 20-29 year and 1: 900 in 30-39 yearage group. The risk of Down syndrome is 1:100 inpregnant women aged over 40 years. Hence, screening of women before 20 weeks of pregnancy is essential in order tohave the opportunity toselectively abort the disabled fetus. Statistics have shown that screening of pregnant women has been significantly effective in reducing birth rate of Down syndrome or other nervous system defects, so that an affected newbornbaby is rarely seen among individuals screened. However, in the case of Screen Positive,an expected percentage of abnormalityexists that lead to issuance of abortion permit. In a study among 2125 pregnant women under investigation at a standardcenter, 94 (4.5%) Screen Positive cases were found. Amongthe 95.5% Screen Negative cases no affected birth was observed. In this regard, performingprecise ultrasound examination and standard testing with optimum quality control and finally determining the risk using softwaresadjusted with the means of the target populationwill have a significant impact on the optimal screening.

Keywords: Screening, Down Syndrome, Abnormalities

O104

Prenatal Risk Assessment Software Requirements

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The prenatal risk assessment of fetal aneuploidies is based on complex algorithms and calculations in any individual gestational age, laboratories involved in prenatal risk assessments for fetal aneuploidies such as Down syndrome need to use commercial or in house developed software to calculate and interpret the results. For this purpose the software efficacy should be validated not only prior to routine use but also periodically. Comprehensive guidelines and standards of software requirements are issued by a few organizations, e.g. NHS, ACMG and IDSSG as educational tools for laboratories to provide qualified clinical services. Some of these guidelines are mostly intended to provide definitions and minimal specifications for the risk calculation software of fetal aneuploidies such as Down syndrome. Generally all the guidelines almost cover following important issues: - Recruited methods to calculate MOM values and risks. - Quality control and monitoring tools. - Data handling and audition requirements.

Keywords: Prenatal Risk Assessment, Software, Requirements, Guidelines and Standards

Iranian Association of Clinical Laboratory Doctors

Technology Management in Clinical Diagnosis Laboratory O105

The use of different technologies in order to improve the quality as well as a competitive advantage has been used widely in medical diagnosis laboratories. Technology Management and use it, is one of the most important issues in the success and goals achievement for this technology. In other words, whatever technology is not necessarily applicable in every situation and may be is not affordable. The technology management focuses on defining criteria for selection of the best technology base on current situation of medical diagnosis laboratories.

In this situation already present a systematic management for technology can be helpful in using a variety of technologies. In current time relation between technology management and Quality improvement in medical diagnosis laboratory is challengeable.

In rising costs situation and critical situation deployment of technology based on automation is cause of reduces the use of multiple user or reduce cost per test. The technology management and economy in medical diagnosis laboratory is one of approach of management. In addition of technology can be use as good source for improving productivity in medical diagnosis laboratory.

For using of new technologies should be noted that the use and deployment of this technology requires more spending ,because new technologies in the research and beginning steps of production are expensive but after a while, and according to market needs cutting the cost by manufacturing companies.

Health reform programs in the entire world and especially in IRAN needs to more information about outcome of these reforms and impressionability medical diagnosis laboratory in relation technology management.

Dr. S. M. Boutorabi, DCLS, PhD

O105

The Future of Laboratory Medicine

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There have been many predictions about the future of laboratory medicine and its sub-specialities since the last century. The predictions are mostly emphasis on non-invasive diagnosis. Forecasts are usually made based on information and trends obtainedthrough past experiences. Here we provide a prospective for future of laboratory medicine by reviewing literature made by authors around the world about the prediction of the future of laboratory medicine and its sub-specialities.Most of the predictions present a positive image of the future of laboratory medicine with more effective treatments, eradication of disease and a higher life expectancy. The predictions mainly focus on test profiling, IT and computer based methods, automation and robotics, pharmaceutical genetics, point-of-care testing, unifying independent hospitals into core health systems. Telemedicine, micro technology, nanotechnology, genomics, proteomics, and evidence-based medicine have been also included in the expectations. Although some of the fore sights have been proved to be incorrect, they are essential for forward planning process. They can be beneficial in universal synchronization of diagnostic tests, reducing laboratory errors and decreasing costs by eliminating unnecessary testing.

Keywords: Laboratory Medicine, Fore Sighting, Forecasting

Posters

Iranian Association of Clinical Laboratory Doctors

Cancer and Tumor Immunology; Malignancies Arising From the Immune System Cell P1- P15

P1

In Silico Analysis of Rs2278414 and its Related Micrornas in Breast Cancer

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Background: Breast cancer is the most common cause of cancer death among women worldwide. Aberration in signal transduction pathway of Znf350 family in human tumors is a common phenomenon.Znf350 as an oncogene and also tumor suppressor is one of the members of Znf350 family. Znf350 overexpression has been observed in approximately 50% of breast cancer cases. Mirnas are the large subgroup of noncoding rnas with 18-25 nucleotides inhibiting the expression of target genes by means of binding to their 3'UTR. They also can play role as an oncogene and/or tumor suppressor. In recent years, the association of some snps located in either mirna seeds or 3'UTR of their target genes with the risk of breast cancer have been proved in some populations. Material and method: mirnasnp database was used to identify the mirnas with the ability to bind to the 3'UTR of Znf350 transcripts. In next step, mirtarbase and DAVID databases were used to investigate the function and the related signaling pathways of obtained mirnas. Results: In silico investigation of snps in the 3'UTR of Znf350gene showed that rs2278414 could alter the binding properties of mir-150. Due to rs2278414, the binding activity of mir-150 (as an oncomirna) undergoes gain respectively; this SNP could act as good-prognostic factor. Conclusion: Bioinformatically, rs2278414 could have association with breast cancer, especially with prognosis of patients.

Keywords: Breast Cancer, Znf350, microRNA, Prognosis, rs2278414, SNP

P2

The Influence of -330 IL2 Gene Polymorphism and HLA-DRB1*1501 Allele on Age at Onset in Iranian Multiple Sclerosis Patients

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Multiple sclerosis (MS) is a chronic autoimmune, multifactorial and complex genetic disease due to demyelination of the central nervous system. It is believed that HLA and cytokines genes are involved in the pathogenesis of MS. Previously, we showed that HLA-DRB1*1501 allele and −330 T/T IL2 genotype had most susceptibility effect on Iranian MS patients. In this study, we evaluated the influence of susceptible DRB1*1501 allele and -330 IL2 polymorphism on age at onset of MS. Our results indicated that individuals with T/T genotype (23.8±5 vs. 34.4±10 years, $p<0.0001$) and HLA-DRB1*1501 allele (21.3±3 vs. 26.6±3 years, $p<0.0001$) had significantly lower age at onset of disease than controls. The -330 T/T IL2- HLA DRB1*1501 haplotype showed the highest significant association to young age at onset. The 330 T/T- IL2- HLA DRB1*1501 haplotype had older age at onset of disease compare to 330 T/T IL2- HLA DRB1*1501- haplotype, but it was not significant. However, we have provided evidence of an interaction between HLA-DRB1*1501 allele and the -330 T/T IL2 genotype in age at onset of MS. But additional Studies on large sample size maybe discover the fact of these gene interactions in age of disease onset.

Keywords: IL2، Polymorphism، HLA-DRB، Age at Onset، Multiple Sclerosis

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P3

Evaluation of Serum PSA Factor in Patients Referred to Laboratory Shahid Beheshti Hospital Medical University of Hamedan /West of Iran

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Objective: Prostate specifc antigen (PSA) is a serin protease member of human kallikrein family. It is produced in both normal and cancerous prostate tissue and secreted into seminal fluid. Its physiologic function is the conversion of liquid form of semen to its gel form. According to the low amount of PSA in blood, it does not have any catalytic activity. Material and method: This cross-sectional study was done from early December 2012 to early January 2013 for 598 patients admitted to laboratory of Shahid Beheshti Hospital, Hamedan. Test performed with ELISA method. The results higher than 4 ng/ml, were considered as positive. Chi –square and Pearson correlation coefficient tests were employed to analyze the data with estimeted of $p<0.05$. Results: Of the 598 male, 108 patients (18.1%) were positive for PSA test while 490 (81.9%) of them have a negative result. The age range was from 24 years to 113 years and the medium point was 65.5 years. A Significant relationship between age and positive result for PSA was observed. To analyses the data people having positive result, divided into three age groups: Below 50 years, between 50 and 70 years and more than 70 years. The mean of PSA value were respectively 10.34, 16.69 and 20.07 ng/ml while the mean of PSA value having negative results were 0.81, 1.14 and 1.27 ng/ml, respectively, considered with the same age groups. Conclusion: The results showed that with increasing the age of men, rising of PSA level and thus the risk of prostate cancer will be increased. Therefore following the PSA level in blood of men and especially later in life, can detect early cancer and may actually help them to prevent the incidence of serious prostate cancer consequences.

Keywords: Prostate-Specific Antigen, Prostate Cancer, Hamedan

P4

Evaluation of Expression Pattern of HE4, cPLA2 and COX2 Genes in Breast Cancer

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Introduction: Nowadays breast cancer is the most common solid tumor and the second cause of death related to the cancer among women population. In this research, over expression of HE4, recently considered as ovary tumor marker, accompanied by expression pattern of COX2 and cPLA2 and finally the correlation between the expression of these genes and other clinical factors in women with breast cancer were investigated. Material & method: Of total 33 women with breast cancer referred from Namazi hospital (Shiraz province), the tumor and their adjacent normal tissues were obtained by pathologist. Clinical histopathology diagnosis elements like age, tumor size, tumor type and its grade were collected. The immunohistochemistry (IHC) analysis of HER2 protein and the receptor of estrogen & progesterone were done. Real-time PCR technique determined the HE4, cPLA2 & COX2 expression pattern. Results: This study demonstrated that a total of 13 of 33 cases (39.3%) were over expression of HE4 and a total of 15 of 33 cases (45.5%) were over expression of COX2 and a total of 18 of 33 cases (54.5%) were over expression of cPLA2. There was a significant correlation between cPLA2 and IHC factors and between COX2 expression and cPLA2 by Real Time-PCR. ($P<0.001$) However there was no correlation between cPLA2 and clinic pathological or the expression of HE4. Discussion: According to the above information, there was over expression of cPLA2 in cancer tissues, it can be a suitable marker for screening and detection of breast cancer at the early phase. On the other hand, there was no dramatic relationship between cPLA2 and the stage of cancer (clinic pathological). So it cannot be considered as the stage of the cancer.

Keywords: Breast Cancer, Tumor, HE4 Gene, COX2 Gene, cPLA2 Gene

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P5

Alamnkt Cell Ligand as Strong Adjuvant of DNA Vaccine against E7-Expressing Tumors

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Introduction: Cervical cancer is the second-most-common cause of malignancies in women worldwide, and the oncogenic activity of the human papilloma virus types (HPV) E7 protein has a crucial role in anogenital tumors. In this study, the efficacy of NKT cell ligand as vaccine adjuvant of therapeutic DNA vaccination was evaluated against E7-expressing tumors. Methods: For this purpose, C57BL/6 mice were injected with 2x105 TC-1, and they were then vaccinated with DNA vaccine encoding HPV-16 E7 alone or with NKT cell ligand. Results: We found that NKT cell ligand induce antigen-specific lymphocyte proliferation compared to the vaccination with E7 DNA alone. While E7 DNA had moderate inhibitory effect on tumor growth, co-administration of NKT cell ligand with DNA significantly induced tumor regression. In conclusion, the data demonstrated that NKT cell ligand provides a suitable adjuvant for improving the efficacy of a cancer vaccine for cervical cancer.

Keywords: E7, Alamnkt, Adjuvant, Cervical Cancer, Papilloma

P6

Histopatology Evaluate the Anti Cancer Effects of Silver Nanoparticles on the Glycine Substrate in Ovarian Cancer Indused by DMBA in Female Rats of the Wistar

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Introduction: Ovary cancer although not common, but one of the main causes of death in woman is considered.one of the main problem in the treatment of cancer is the lack of active drugs and effective drugs ,and drug resistance to the drugs available. Nanoparticle one of the most well-known nano materials that have been studied for their anti cancer properties.Among this nano particles, silver nanoparticles having very strong antimicrobial properties in medical and dental acceptality is high. Thus the present study was carried out to study the cytotoxic effects of silver nano particles on the glycine substrate on ovarian cancer indused by DMBA in femal rats of the wistar. Methods: in this study, female wistar rats were used .Animals were divised in to 6 groups.the first group was the control group. The second groug only injected by DMBA respectively. third group under went injection of DMBA+Salin and other groups under went injection of different doses of silver nanoparticles on the glycine substrates to indused cancer,21,7 Dimethyl Benza Anthracen was directly injected in to ovary.in this study, ovarian weight and ovarian histopatological characteristics of ovarian and liver enzymes measured in all expremental groups was measured and evaluated. Finally, data collected using SPSS software and were analyzed by one way ANOVA. Finding: in this study, silver nanoparticles on cancer cells have positive effects were noted. The microscopic sections of ovarian tissue in groups receiving different concentrations of silver nanoparticles on the glycine substrate consistency more, growing follicles and corpus luteum more natural than the recipient DMBA was observed. Results: This study confirms the positive effect of these compounds in the treatment of ovarian cancer, although further studies are needed.

Keywords: Ovary Cancer, Silver Nanoparticle, Rat, DMBA

P7

Histopatology Evaluate the Anti Cancer Effects of Silver Nanoparticles on the Jelatin Substrate (Ag/si-o-p/jelatin) in Ovarian Cancer Indused by DMBA in Female Rats of the Wistar

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Introduction: Ovary cancer is one of the commonest cancers among the woman. Although not common, but one of the main causes of death in woman is considered.one of the main problem in the treatment of cancer is the lack of active drugs and effective drugs, and drug resistance to the drugs available. Nanoparticle one of the most well - known nano materials that have been studied for their anti cancer properties.Among this nano particles, silver nanoparticles having very strong antimicrobial properties in medical and dental acceptality is high. Thus, the present study was carried out to study the cytotoxic effects of silver nano particles on the Jelatin substrate on ovarian cancer indused by DMBA in femal rats of the wistar. Methods: in this study, female wistar rats were used. Animals were divised in to 6 groups.the first group was the control group. The second groug only injected by DMBA respectively. Third group under went injection of DMBA + Salin and other groups under went injection of different doses of silver nanoparticles on the Jelatin substrates to indused cancer, 7, 12 Dimethyl Benza Anthracen was directly injected in to ovary. In this study, ovarian histopatological characteristics and changes in liver enzymes and serum proteins of all expremental groups was measured and evaluated.finally data collected using SPSS software and were analyzed by one way ANOVA. Finding: In this study, tissue damage in groups treated with the nanoparticle declined sharply. The silver nanoparticles were significantly toxic effects on cancer cells. The microscopic sections also reduced tumor growth in groups treated with nanoparticles of silver gelatin was found on the bed. Results: This study confirms the positive effect of these compounds in the treatment of ovarian cancer, although further studies are needed.

Keywords: Ovary Cancer, Silver Nanoparticle, Rat, DMBA

P8

Microscopic and Anticancer Effects of Silver Nanoparticles on the Substrate of Oxalic Acid in Ovarian Cancer Induced By DMBA (7, 12-Dimethyl Benzo Anthracene) In Female Wistar Rats

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Background and Objectives: The incidence of ovarian cancer is not very large, but one of the main causes of death among women is very strong antimicrobial properties Grdd.nanv silver particles having a high acceptance in the medical and dental findings, but despite extensive applications sufficient information concerning their impact on human health, there have been reported cases based on their toxicity. This study aimed to investigate the cytotoxic silver nanoparticles on the substrate oxalic acid on ovarian cancer induced by DMBA in female Wistar rats were used . Methods and Materials: In this study, female Wistar rats were divided into 6 groups Shd.hyvanat first group was the control group, the second group was injected only (DMBA) 7, 12 Dimethyl benz (a) anthracene to third Dashtnd.grvh at the end of the experiment was to measure and analyze the collected data were analyzed with the software spss16 and ANOVA. Results: In this study, ovarian tissue damage in groups treated with nanoparticles of silver nanoparticles is reduced Yaft.dr significant toxic effects on cancer cells. In microscopic sections also reduce tissue damage and follicles in the groups receiving the silver nano-particles were seen in the context of oxalic acid.

Keywords: Ovarian Cancer, Silver Nanoparticles, DMBA

P9

Frequency of Viral Infections and Environmental Factors in Multiple Sclerosis in Iran

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Multiple sclerosis (MS) is a complicated disease which occurs due to relationship between genes and environmental factors that causes tissue damage by autoimmune mechanisms. Objective: We investigated and illustrated the hypotheses correlated to the evidence of several putative environmental risk factors for MS onset and progression in this part of Iran.Univariate logistic regression was used to detect the effects of environmental factors on the risk of MS. Data were analyzed using SPSS version 16.The childhood history of patients with rubella, measles and chickenpox increased the risk of MS significantly. Moreover, Low consumption of dairy products, avoidance of seafood consumption, cigarette smoking and exposure to tobacco smoke, stress, anxiety disorders, depress and disturbing thoughts, negative and disturbing thoughts, developing a sudden shock upon hearing bad news, having obsessive-compulsive and being depressed increased the risk of MS significantly. The results of the current research partially solved the puzzling question of complex interplay between environmental factors and MS disease in this part of Iran. Incorporating these factors enables more powerful and accurate detection of novel risk factors with diagnostic and prognostic methods.

Keywords: Multiple Sclerosis, Environmental Exposure, Seafood, Dairy Products, Stress Disorders

P10

In Silico Analysis of Rs1625895 and its Related Micrornas in Breast Cancer

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Background: Breast cancer is the most common cause of cancer death among women worldwide. Aberration in signal transduction pathway of TP53 family in human tumors is a common phenomenon. TP53 as an oncogene and also tumor suppressor is one of the members of TP53 family. TP53 overexpression has been observed in approximately 50% of breast cancer cases. miRNAs are the large subgroup of noncoding RNAs with 18-25 nucleotides inhibiting the expression of target genes by means of binding to their 3'UTR. They also can play role as an oncogene and/or tumor suppressor. In recent years, the association of some SNPs located in either miRNA seeds or 3'UTR of their target genes with the risk of breast cancer have been proved in some populations. Material and method: miRNASNP database was used to identify the miRNAs with the ability to bind to the 3'UTR of TP53 transcripts. In next step, miRTarBase and DAVID databases were used to investigate the function and the related signaling pathways of obtained miRNAs. Results: In silico investigation of SNPs in the 3'UTR of TP53 gene showed that rs1625895 could alter the binding properties of miR-619. Due to rs1625895, the binding activity of miR-619 (as a tumor suppressor) undergoes loss respectively and consequently, this SNP could act as a poor-prognostic factor.

Keywords: Breast Cancer, TP53, Microrna, Prognosis, Rs1625895, SNP

P11

B7-H3 Gene over Expression in FFPE Ovarian Cancer Cancer Patients

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Objectives: ovarian cancer is one of the most reason of gynecology cancer daeth.despite great advances in therapeutic managment ovarian cancer is the fourth common gynecologic molignancy in women.will likely lead to effective screening strategies for early detection ofB7-H3 tomor marker in ovarian cancer. Metods: In this study, paraffin-embedded tissue samples from 20 women with ovarian cancer and 10 normal samples were collected from cancer institue of Imam Khomeini Hospital. After removing paraffin, RNA extraction was performed with RNAPlus solution. cDNA was synthesized through reverse transcription by MMULVenzyme. Gene expression was measured by Relative Real timePCR method. Glyceraldehyde phosphate dehydrogenase gene (GAPDH), Results: B7-H3 protein expression was detectet in differnt stage of ovarian tumors indifferents stages.all patients shows overexpressionB7-H3 in ovarian cancer. Conclusions: The consistent overexpression of B7-H3 in normal cell, ovarian tumor in different stage and the relative absence of expression in most normal somatic tissues indicates thatB7-H3 should be further investigated as a potential diagnostic marker or therapeutic target for ovarian cancer.

Keywords: B7-H3,Ovarian Cancer, Realtimepcr,Tomor Marker

P12

Lack of Association between Interleukin-23 Receptor Gene Polymorphism (rs1884444) and Acute Lymphoblastic Leukemia

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Introduction and Objective: Interleukin-23 is a heterodimeric cytokine composed of an IL-12p40 subunit that is shared with IL-12 and the IL-23p19 subunit. A functional receptor for IL-23 (IL-23R) has been identified and is composed of IL-12R β1 and IL-23R. Recent studies have indicated that IL-23 has mutual function, anti-tumor effects through induction of the adaptive cytotoxic effector response, and proinflammatory and proangiogenic effects that nourish the tumor through related pathways. In this study, we hypothesized that the functional genetic variant of IL-23R gene rs1884444 T>G, with amino acid His substituted by Gln at codon 3, may affects the risk of susceptibility to acute lymphoblastic leukemia (ALL). Therefore we investigated the allelic and genotype frequencies of IL-23R in children with acute lymphoblastic leukemia compared to healthy controls. Materials and methods: Genomic DNA in 200 patients with ALL and 200 healthy age/sex matched controls was extracted from whole blood. Samples were genotyped by primer-introduced restriction analysis (PIRA) for SNP. Genotype and allele frequency differences between cases and controls were determined by Chi-square test using SPSS Ver. 16.0. Results: The results of our study revealed no significant differences in allelic and genotypic distribution of this SNP between patients and controls (P=0.83). Conclusion: The SNP rs1884444 of IL-23R might not contribute to the susceptibility of ALL in the studied group of Iranian patients.

Keywords: Acute lymphoblastic leukemia, Gene polymorphism, IL-23R, PIRA

P13

HE4 Gene over Expression in FFPE Ovarian Cancer Cancer Patients

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Introduction: Ovarian cancer is one of the common malignancies in women and the fifth cause of cancer death in women all over the world. Despite the fact that old methods to create and develop a useful clinical markerwere challenging, recent developments in Genomics and Proteomics technologies have led to the identification of unknown candidate markers for the diagnosis of ovarian cancer. Human epididymis protein 4 (HE4) has recently been supported to monitor the recurrence or the progression of epithelial ovarian cancer. The purpose of this study was to measure the expression of HE4 in women with ovarian cancer. Methodology: In this study, paraffin-embedded tissue samples from 20 women with ovarian cancer and 10 normal samples were collectedfrom Imam Khomeini Hospital in Tehran. After removing paraffin, RNA extraction was performed with RNAPlus solution. cDNA was synthesized through reverse transcription by MMULVenzyme. Gene expression was measured by Relative Real timePCR method. Glyceraldehyde phosphate dehydrogenase gene (GAPDH) was used as an internal control. Results: The HE4 was expressed in normal and cancerous tissues, but its expression was more in tumor tissue than noncancerous tissue. The results showed that the expression level of HE4 increases with the advancement of the disease. Conclusion: According to the results, it can be concluded that HE4 expression levels greatly increasesin tumor samples. Therefore, HE4 gene expression measurements can serve as a valuable prognostic factor for early detection and treatment management of the disease.

Keywords: Ovarian Cancer, Gene HE4, Tumor Marker

P14

Cloning and Expression of Two Extracellular Cysteine Rich Epitopes of TNFR1 Receptor

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Background: Tumor necrosis factor alpha (TNFα), a pleiotropic cytokine, is a vital component of the inflammatory processes and its aberrant over-expression has been linked to numerous disease states.TNF-α can bind two distinct receptors, TNFR2 and TNFR1. The latter factor initiates the majority of the biological activities of TNFα and also plays crucial roles in several cancers, inflammation and many other diseases. TNFR1 has four cysteine rich domains (CRDs) in the extracellular region that TNFα binding site is mainly located in CRD2 and CRD3. The aim of this study was the cloning, expression and purification of CRD2 and CRD3 related protein for further studies on the treatment of inflammation. Methods: CRD2 and CRD3 related gene was isolated from recombinant pET28a-exteracellular region of TNFR1 by BamHI/SalI double digestion, cloned in to the new pET28a expression vector and transformed in to E. coli BL21 (DE3). Expression of the desired protein was induced by IPTG 0.5mM, evaluated by SDS-PAGE and western blotting analyses and was purified by using Ni-NTA columns under denaturing condition, refolded and desalted by step-wise dialysis. Results: Cloning was confirmed by restriction digestion and protein expression was confirmed by identification a 14 kDa band in SDS-polyacrylamide gel and nitrocellulose membrane. Conclusion: New therapeutic strategies have sought to reduce circulating TNF-α with neutralizing anti-TNF-α proteins for inflammatory diseases. The target protein can be used as blocking factor for the TNF-α in clinical trial.

Keywords: TNFR1, CRD2 and CRD3, anti-TNF-α

P15

Down-Regulation of Mir-141 in Gastric Cancer Patients in Iran

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Background: Gastric cancer (GC) is the 4th most common type of cancer and the second fetal in the world. The deregulation of miRNAs has been related to a series of diseases, such as various type of cancer. miRNAs are presented in serum and plasma of human blood. The first and the most important step of metastasis is Epithelial to Mesenchymal Transition (EMT). MiR-141 can suppress an EMT by controlling the expression of Snail and ZEB (zing finger binding homeobox) factors and also TGFβ signaling pathway. This study aimed to evaluate miR-141 expression in GC patients and its association with disease progression. Methods: Expression of miR-141 were calculated in serum of 50 patients with gastric cancer (mean age 63.1 ± 13.6) and 50 healthy controls who were matched to the patients from age, sex, and ethic. After RNA extraction and cDNA synthesis, we analyzed expression of miR-141 by Real-time PCR using specific primers. Results: The data showed that the expression of miR-141 in GC patients was significantly lower than that of the controls (P =0.0005). Also, there was a significant difference at advanced stages (0.036). Conclusions: Our results suggest that miR-141 might be a prognostic marker in development of gastric cancer.

Keywords: Gastric Cancer, Mir-141, Serum, Tumor Marker

Iranian Association of Clinical Laboratory Doctors

Challenges of Thyroid Function Tests P16

P16

Study of Demographic and Geographic Characteristics of Thyroid Cancer in Isfahan Province

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Introduction: Thyroid cancer is the most common endocrine cancer in the world and responsible for 63% of deaths from cancer in the endocrine system. Isfahan province ranks first in the country in thyroid cancer that is more prevalent in youngs, middle ages and women. The occurrence of the disease is associated with increased rate of absorption of iodine and is under the influence of several parameters including the environmental and geographical factors, stress, genetics, age, gender, type of diet. In this study we aimed to evaluate the impact of some of these items for thyroid cancer patients. Methods: In this descriptive analytical study files of 211 patients with four dominant types of thyroid cancer (papillary, follicular, medullary and anaplastic) who were referred between 92-93 years to the Sepahan clinical and pathological laboratory, were reviewed and the data obtained were analyzed by spss-20 software. Results: In this study 163 patients were female (77.3%) , 48 were males (22.7%) and ranging in age from 20-80 years. Most cases were located in the age range 30-40 years (35.5%). 58.52% of patients lived in the outskirts of Isfahan and 41.8% lived in Isfahan. The highest prevalence respectively were in suburban west (41%) and north of Isfahan (35.7%). Conclusion: The survey suggests a severe pollution from industries and factories and its effect on the climate, agricultural products and the incidence of thyroid cancer in the west vicinity of Isfahan. In the north of Isfahan congestion of cars and heavy vehicle and being Kaveh terminal can be cited as a big risk factor.

Keywords: Thyroid Cancer, Age, Sex, Prevalence, Geographic Location

Iranian Association of Clinical Laboratory Doctors

Human Resource Management in Medical Labs P17- P20

P17

Acceptance of Change by Employees and its Effect on Accreditation of Organization's Performance

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Today, managers must keep up-to-date and equip themselves with multiple managerial skills to develop the notion of globalization and keep pace with global changes, as change is inevitable. Establishing quality management systems will only be possible if like the manager, employees feel the need for change. A capable and efficient manager with limited but justified financial and human resources can better establish and endeavor to maintain and enhance a quality management system than a manager with huge financial resources and indifferent workforce. Employees are part of the bureaucratic body, and if structures are systematic and systems work well, every employee will have a share in advancing organizational goals. However, irresponsible behavior (due to sick organization, wrong procedures, existing norms, improper training, etc) creates moods, so called employee persona" with 10 marker so that existence only one of them is enough for proving the subject. As teamwork is particularly important in laboratories, employees should distance from above attributes and do their best to give meaning to workforce productivity assessment and organization's performance evaluation.Improving satisfaction and enhancing performance, and ultimately efficacy of activities is the most important goal for performance evaluation in organizations. References: 1. Gharib R: Tavanir Electricity Newsletter 2. News online

Keywords: Change, Management, Accreditation

P18

Creativity and Innovation are Inevitable in Clinical Laboratories

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This question is constantly in the minds of managers and stakeholders why a health care will progress to higher levels ,Meanwhile, a similar organization of primary sources and productivity features with equal or even better, not only did the organization before it happens rather than backward. What a factor in similar circumstances to advance the success of some organizations and others are backward and inefficient performance? In recent years, extensive efforts by many laboratory managers, stakeholders and staff to encourage creativity and innovation have been conducted in the laboratory. In this paper, the concept and role of creativity and innovation, the creation of these components and also features creative and innovative people and organizations, is explained. By taking advantage of technological innovations will be able to efficiently and effectively to achieve goals and community organizations have developed and progressive. Creativity and innovation necessary prelude to the development and growth of the organization and society and awareness of the strategies and techniques it is imperative for managers and researchers.

Keywords: Creativity, Creative Agencies, Health Care Organizations, Medical Diagnostic Laboratories

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P19

The Relationship between Specified Roles of Technicians on Improving the Lab Services Quality from Technicians Point of View in Pathologic Lab as Medical/ Health Institutes of Sanandaj (1393)

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Regarding to approve and declare of lab standardization from 1378, pathologic labs, as Health Center precursors of Health centers have established regional quality of management in lab services (including lab management standardization). Due to the fact the researchers and clear sighted point of view in Quality improvement establishment (including lab standardization) is impressive organizational culture, efficiency, effectiveness and economic (parsly.1999), in addition to a well- established program, management role and leadership commitment is more impressive on quality improvement (Wagner and Randio, 1998). So this research seeks to investigate lab technician role based on staff point of view on lab & Service Quality Methodology The research independent methodology is lab technician point of view regarding to specified role of lab technician (in 3 dimensions of- commitment on Qualitative programs, accurate human resource management and consumerization) and dependent variable includes lab services quality (standardization attainment percentage based on check lists of health center lab) Main Hypothesis H H H1 H2 H3 Primary Hypothesis: There is significant relationship between specified role of lab technician and lab service quality Secondary Hypothesis (1): There is significant relationship between technician commitment on qualitative and quantitative programs of lab services. Secondary Hypothesis (2): There is significant relationship between accurate management of human resource and lab services quality. Secondary Hypothesis (3): there is significant relationship between technician consumerization and lab services the research is descriptive and its methodology is correlation research. It is regarded as applied and cross- sectional Data was gathered based on survey. Data was gathered with verified questionnaire validity and verifiability was determined with a- Chronbach and Delfi, respectively- Result and Discussion According to the research and hypothesizes nature and to determine the relationship between lab service technicians and lab service qualities, the applied deductive statistics method, Pierson correlation coefficient and SPSS software applied. The hypothesis were supported. So, technician impoverishment in applied training of management concepts (in lesson units of universities, retraining and training) can improve the lab – service quality.

Keywords: Lab Technician Role, Lab Servi Ce Quality

P20

Principles of Clinical Lab Management for Internal Managers; Dos and Don\'ts

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Background: The guiding principle for a modern laboratory could indeed result in any enterprise and adds value to the customer. It is important to have enough update knowledge about laboratory mission and function. Some essential issues should be discussed like negotiation for contingent staff, laboratory design and work flow, selection of costly instruments, good laboratory operations manager's leadership style and networking with other lab managers. The aim of this study is to present a perfect management strategy for better services in labs. Methods: The practical aspects of managing a laboratory were evaluated including ways to organize the lab and evaluate performance. Successful laboratories have always noticed customer satisfaction. However, only recently some managers have begun to recognize that customer satisfaction is the ultimate measure of performance. Results: You will learn how to communicate and listen, select and motivate staff, negotiate for contingent staff, give performance reviews, buy instruments, objectively evaluate laboratory performance, and manage change and plan for the new ward in future, and network with other laboratory supervisors. Discussion: Laboratory policies, practices, and procedures are discussed to suggest improvements in the labs. Suggestions on how to improve your laboratory when you return home will round out the congress.

Keywords: Clinical Lab, Management, Supervisor, Modern Lab

Iranian Association of Clinical Laboratory Doctors

Laboratory and Chronic Kidney Diseases P21- P25

P21

First Study on Common Mutations in Patients with Cystinuria in Iran

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Background: Cystinuria, one of the first inborn errors of metabolism, is recognized by hyperexcretion of cystine, lysine, ornithine arginine and into urine. So far, two genes associated with cystinuria have been identified: SLC3A1 (2p16.3) that encodes the heavy subunit rBAT of the renal b0,+ transporter and SLC7A9 (19q13.1), which encodes the light subunit b0,+AT. Patients with type A cystinuria have two SLC3A1 mutations, whereas patients with type B cystinuria have two SLC7A9 mutations and finally patients with type AB have one mutation in each gene. considering the population-specific distribution of mutations in disease, limited studies on the genetic bases of the cystinuria in Middle East. This research presented the results of mutation analysis on patients with cystinuria in Iran.Methods: Thirty unrelated cystinuria patients operated to remove kidney stones were screened by urologyst .The patients were analyze for the four of the most common mutations which have been reported previously using ARMS-PCR (M467T, T216M) and RFLP-PCR (G105R, R333W) methods. Findings: We found four variations including two missense, one polymorphism and one intron variant. The most frequent mutations, M467T and also T216M and R333W, were not detected in our patients and just G105R was found in two chromosomes.Conclusion: As regards among the most common mutations just G105R were found, our research may confirm the ethnic distribution of mutations in cystinuria. Hopefully this study will expand our concept of the genetic basis of cystinuria in Iranian patients.

Keywords: Cystinuria, Mutation, Iran

P22

Evaluation of Prevalence of Metabolic Syndrome in Renal Transplant in Sari in 2013

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Aim: Metabolic syndrome (MS) is one of the lives treating causes, even in developed Country. Some previous studies have shown a graded relationship between metabolic syndrome and worsening renal function. The prevalence of metabolic syndrome is unknown in renal transplant and dialysis patients. The aim of this study was evaluation the prevalence of metabolic syndrome in renal transplantat patients in sari in 2013. Methods: In this descriptive study, we included all renal transplant patients that attended to the hospitals of sari and have done surgery more than 3 months ago. Metabolic syndrome was defined according to the International Diabetes Federation (IDF) and Adult Treatment Panel III of the National Cholesterol Education Program (NCEP-ATP III) criteria. Results: We enrolled 132 renal transplant patients. Seventy- four patients were male (56.1%) and fifty-eight were female (43.9%) with the mean age of 45 ± 13. Clearance of creatinine was 74.8± 28.9 ml/min according to Cockcroft-Gault formula. The metabolic syndrome was present in 50 % (CI 95%: 41.6-58.4) and 47.7% (CI95%: 39.4%-56.2%) of patients according to IDF and NCEP-ATPIII, respectively. MS was more common in female than in male (60.3% vs 37.8%,p=0.01,odd ratio=2.5,CI95%,1.2-5.1). Patients with MS were older than patients without MS (49 ± 11 years-old vs. 42 ± 14 years-old, P=0.04). The clearance Creatinine was not significantly different between two groups. Conclusion: The prevalence of metabolic syndrome in renal transplant patients was more common in female and older age. Therefore, we should consider metabolic syndrome during follow up of these patients.

Keywords: Metabolic Syndrome, Renal Failure, Renal Transplant

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P23

Fetuin-A and Vitamin D Receptor Gene Polymorphisms in Hemodialysis Patients

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Background: Vascular calcification is a common complication in the chronic kidney disease (CKD) patients and the leading cause of morbidity and mortality in this patient. The aim of the present study was to evaluate a possible correlation between vitamin D receptor (VDR) gene FokI and ApaI polymorphisms with the expression of calcification biomarkers such as Fetuin-A and intact parathyroid hormone (iPTH) in hemodialysis (HD) patients. Methods: In this cross-sectional study, serums were obtained from 46 stable chronic HD patients. The serum levels of iPTH, Fetuin-A, vitamin D, calcium, phosphorus, and VDR genotyping were determined by standard methods. Results: Serum levels of Fetuin-A, calcium, and phosphorus did not differ between males and females, but significant differences in iPTH and vitamin D levels was found in the study patients (P= 0.040 and P= 0.020 respectively). A significant correlations were found between serum phosphorus and levels of serum calcium (r= –0.4; P= 0.002), vitamin D (r= –0.5; P= 0.001) and iPTH (r = 0.4; P= 0.001). iPTH level in FokI polymorphism, were different between genotype groups in study patient (P= 0.020). There was a significant positive correlation between vitamin D and iPTH levels in patients with aa genotype (P= 0.020, r = 0.4). Conclusion: These findings suggest that FokI (rs2228570) polymorphism in exon-2 of the VDR gene may play a role in iPTH levels. Fetuin-A deficiency or high level of iPTH and its association with VDR gene polymorphisms may be useful to identify the high-risk group susceptible to renal failure and atherosclerosis.

Keywords: Fetuin-A, Vitamin D Receptor Gene Polymorphisms, Hemodialysis Patient

P24

Study of Human Cytomegalovirus (HCMV) Among Hemodialysis Patients in Gorgan, Iran, 2013-2014

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Ntroduction and aim: Human cytomegalovirus is the most common viral pathogen that causes morbidity, graft loss, and mortality in immunocompromised patients, transplant recipients and those who receive blood transfusion frequently, such as hemodialysis patients. The present study was designed to determine the frequency of active CMV infection in hemodialysis patients in Gorgan, South east of Caspian Sea. Materials and Methods: A total of 149 patients receiving hemodialysis were included in the study. Detection of CMV-DNA in plasma was done by the nested polymerase chain reaction (Nested -PCR) using specific primers selected from highly conserved regions of major capsid protein (MCP) gene of human cytomegalovirus. In addition, CMV-IgM antibody of plasma were measured by serological methods. Demographic and clinical data were entered and analyzed using SPSS software (version 18) and statistical methods. Results: The total prevalence of CMV infection was (6.7%) among the patients receiving hemodialysis, the rates of CMV-DNA and anti-CMV IgM positivity were2.68% and 4.69%, respectively. One case showed both markers. CMV infection did not correlate with gender, age, ethnicity, duration of dialysis, and history of blood transfusions or time on dialysis. Conclusions: Accurate diagnosis of active CMV infection can, at least, reduces the incidence and prevalence of CMV among these patients.

Keywords: Human Cytomegalovirus, Hemodialysis Patients, Nested -PCR, Elisa

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P25

New Biomarker for Chronic Kidney Disease

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Renal failure is a medical condition in which the kidneys fail to adequately filter waste products from the blood .It is mainly determined by a decrease in glomerular filtration rate and absence of urine production creatinine or urea in the blood.The two causes of chronic kidney disease are diabetes and high blood pressure. Novel biomarkers of chronic kidney disease (CKD) include: Beta-trace protein (BTP), neutrophil gelatinase-associated lipocalin (NGAL), kidney injury molecule 1 (KIM-1), liver-type fatty acid-binding protein (L-FABP), asymmetric dimethylarginine (ADMA). This biomarkers can be used in a number of application to prevent, diagnosis and monitoring of disease.

Keywords: Renal Failure, Chronic Kidney Disease, Biomarker

Iranian Association of Clinical Laboratory Doctors

Laboratory and Diabetes Mellitus P26 - P30

P26

Lipids in Association with Serum Magnesium in Diabetes Mellitus Patients

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Introduction: Diabetes mellitus is a disorder in which the insulin hormone metabolites are excreted incomplete or no secretion is not followed by physiological changes arise in most parts of the body.To investigate whether and how serum Magnesium (Mg) concentrations influence the serum lipids in diabetes mellitus (DM) patients. The cross-sectional study was conducted on diabetic mellitus (DM) patients with various kidney functions not yet on dialysis. methods: Serum lipoprotein(a), glycosilated hemoglobin (HbA1c), serum magnesium (Mg), serum creatinine (creat), serum lipids consisting of triglycerids (Tg), cholesterol (Chol), high-density lipoprotein (HDL) were measured. Results: Study patients included 122 patients (82F, 40M). The mean patients' age was 63 (±10) years. The mean length of time they were diabetic was 7.4 (±5.8) years (median: 6 years). The mean serum Mg was 2 (±0.4) mg/dl (median: 1.99 mg/dl). The mean creatinine clearance was 64 (±24) cc/min (median: 64 cc/min). In this study significant inverse correlations of serum Mg with serum cholesterol and LDL as well as non-significant correlations of serum Mg with serum Lp (a), HDL, Tg and with serum HgbA1c were seen. More over a significant inverse correlation of serum Mg with ages of the patients and a significant positive correlation of serum Mg with serum creatinine were seen too. Conclusions: It seems that in diabetic patients, kidney function is a key role in the regulation of serum Lp (a) levels instead of other factors like serum Mg level. Our finding further supports the importance of Mg supplementation in diabetes mellitus patients. In our study no significant correlation between serum Mg with serum HDL and Tg were found, which needs further investigation.

Keywords: Serum Magnesium, Serum Lipids, Lipoprotein (A), Diabetes Mellitus

P27

Prevalence of Gestational Diabetes in South Khorasan Province in Years 92

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Introduction: Diabetes mellitus is the most common metabolic disease characterized by increased blood glucose and lipid metabolic changes, sugars associated protein. Diabetes in pregnancy, about 3.5-5% of all pregnancies and complications include various insection irreversible central nervous system (CNS) such as Hippo comp and operating. The present study was designed to evaluate gestational diabetes was years 92 in South Khorasan province. Methods: In a descriptive study data using standard statistical forms to collect statistics on household records Network by collecting and using EXCEL software description of the health center were analyzed. RESULTS: Of the 28169 pregnant women at years 92of health care in South Khorasan province, 2886 persons(10%), family history of diabetes, 365 patients (0/01) diabetes in a previous pregnancy, and 205 patients (0/007) Had gestational diabetes. Conclusion: The prevalence of gestational diabetes in the population and the increasing rate of diabetes in the country will be proposed in the pre-pregnancy care, Must rule, during, and after delivery of maternal health care and specialist units placed and facilitate access to care for her mother.

Keywords: Diabetes, Metabolic, Pregnancy

P28

Evaluation of Accuracy, Precision and Consensus of Four Laboratory Glucose Measurement Kits Based on One Reference Method

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Background: The blood glucose controlling has become very important by raising number of diabetic patients in throughout the world. According to recent changes in diabetes diagnostic criterion, harmonization of results from various methods and systems with considering of their accuracy and precision is essential. The aim of this study is evaluation of accuracy, precision and consensus of some routine laboratory glucose kits based on the Glucoseoxidase in compared with Hexokinase reference method.Materials and methods: 38 diabetic patients with a fasting blood glucose(FBS)≥126 mg/dl, 9 prediabetic patients with FBS 100-125 mg/dl, 15 non-diabetic person with FBS 60-100 mg/dl and 9 hypoglycemic patients with FBS lower than 60 mg/dl enrolled. Fasting blood glucose of them measured by four routine laboratory glucose kits based on Glucose oxidase(ParsAzmoon, Bionik, Elitech and Human) and a Hexokinase method(Roche kit with COBAS INTEGRA®400plus analyzer). Accuracy, precision, agreement and bias of routine methods determined and compared with Roche kit as a reference method. Results: Glucoseoxidase methods showed a good agreementwith the reference method, in Correlation Coefficient>0.99.The regression analysis between these methods yielded slopes of 1.114 for ParsAzmoon, 1.105 for Bionik, 1.121 for Elitech and 1.087 for Human;(P<0.001). The same Standard errors of Glucoseoxidase methods showed an excellent precision for them. The mean bias for methods(ParsAzmoon:12.79, Bionik:10.86, Elitech:12.58 and Human:8.46) obtained. Conclusion: The same standard errors, standard devisions and regression analysis in routine kits compared with Hexokinase reference method showed an excellent precision for them but not in accuracy.

Keywords: Fasting Blood Glucose, Accuracy, Precision, Consensus, Reference Method

P29

Investigation of Antibiotic Resistance and Factors That Disposed to Creation Foot Diabetic Infection Isolated From Clinical Specimen in Esfahan Hospitals

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Investigation of antibiotic resistance and factors that disposed to creation foot diabetic infection isolated from clinical specimen in Esfahan hospitals. Fahimeh Nourbakhsh I Vajiheh Nourbakhsh II I M.Sc., department of microbiology, Islamic Azad University, shahrekord Branch, Shahrekord, Iran. II B.A., nurse of Fatemeh Zahra hospital, related to management of remedy, social security of Esfahan. Abstract Background and objectives: foot diabetic infection is one of the most important trouble in diabetic illness and important agents for confined to bed. Prevention of appearing diabetes, its trouble and antibiotic sensitivity pattern in clinical specimen of Esfahan hospitals, decrease expenses and procedure of remedy. This study was conducted to the antibiotic resistant pattern and disposed agents in foot diabetic wound. Materials and methods: in this cross-sectional study we used medical dossier and 250 wound specimens collected from diabetic patient. These specimen were selected with using laboratory standard methods, and culture specific. The antibiotic susceptibility testing was performed using disk diffusion on plate. Results and discussion: from 250 specimen, he most illnesses were the man with 75/3 % rate, 38/5 % of illnesses were use uncomfortable shoe, and most of them didn't control their blood sugar, and mostly use cigarette. Plenty of clinical isolated show that staphylococcus aureus 68/3 % is the highest rates of specimen. Klebsiella 52/7 %, Escherichia coli 48/6 %, proteus 32/2 %, citrobacter 28/4 % and pseudomonas 17/2 %, were the other specimen strains. Based on the phenotypic investigation on antibiotic resistance of specimens, the highest rates were seen in treatment with ampicillin 98%, methicillin 89/2%, gentamycin 65/1% and ciprofloxacin 62/8%. While the lowest sensitivity was observed in treatment with nitrofurantoin 10/2% and vancomycin 12/1%. According to antibiotic resistant it is recommended to use antibiotics in its right way.

Keywords: Foot Diabetic Infection, Antibiotic Resistance Pattern, Clinical Specimen of Esfahan Hospitals

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P30

The Prevalence of Gestational Diabetes Mellitus among Pregnant Women Referred to Sahebazaman Health Center in Lar City

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Introduction and objective: Gestational diabetes mellitus (GDM) is defined as glucose intolerance first discovered in pregnancy. Gestational diabetes (GDM) can harm both mother and child. Children and mothers face a greater risk of developing obesity and type 2 diabete. The aim of this study is to evaluate the prevalence of GDM among pregnant women referred to a health center Lar city. Method: A cross-sectional study was conducted on 350 pregnant women that referred to Sahebazaman health center in Lar city during March 2013 to March 2014. Initially, a blood sample for performing Fasting Blood sugar (FBS) was taken, then a 75 gram glucose for oral glucose tolerance test (OGTT) was administered between 24 and 28 weeks' gestation in a nonfasting state. After giving glucose, blood was taken in 2 steps (one and two hours after taking glucose). In the normal individual must be FBS≤92, 1 hours blood sugar≤180 and 2 hours blood sugar ≤153. If at least one of above blood sugar is abnormal, diagnosis of GDM was definitive. Results: The averages of referred pregnant women are 26.54±5.20 years. According OGTT instruction, 12% (N=42) of pregnant women's OGTT were abnormal. Discussion: In our study, the prevalence of GDM compared with other studies in cities like Isfahan (6.76%) and Zahedan(10.6%) is higher. Given the high prevalence of GDM in this region, surveillance for women with GMD is recommended.

Keywords: Gestational Diabetes Mellitus (GDM), OGTT, Lar, Pregnant Women

Iranian Association of Clinical Laboratory Doctors

Laboratory and Nosocomial Infections P31- P37

P31

Overview on Bacterial Nosocomial Infection in Porsina Hospital, Rasht-Guilan

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Summary Introduction: The bacterial are the key responsible for 80% of nosocomial infection. In the previous year's various microorganisms were the sources of nosocomial infection. In 1930 Streptococcus, in 1960 gram negative organisms and after that Staphylococcus was the cause of nosocomial infection. The aim of this study was to determine bacterial nosocomial infection in educational and training, Porsina hospital from 1386-1388, Rasht-Guilan. Materials and Methods: this cross sectional study was conducted on specimens from patients admitted to orthopaedic, neurology, trauma, neurology surgery, general intensive care unit and neonatal intensive care unit. All samples were confirmed using laboratory diagnostic tests. Results: from 796 specimen 438 (55/7%) organisms consist of Escherichia coli, proteus, staphylococcus aureus, psudomonase, klebsiella, entrobacter, citrobacter were isolated. Most common isolated bacteria in 1386 was pseudomonas (36%), followed by klebsiella (29/7%) in 1387 and staphylococcus aureus (37%) in 1388. Conclusion: Overview on aspects of bacterial nosocomial infection, prevention of nosocomial infection and reduce hospital acquired infection by using appropriate procedure is essential.

Keywords: Bacteria, Nosocomial Infection, Laboratory Data, Hospital Units

P32

Frequency of Multi-Drug Resistance (MDR) In Gram Negative Isolates from Inpatients with Urinary Infection in Gorgan

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Background and objectives: Multidrug resistance (MDR) bacteria, are resistant to 3 or more independent family of Antibiotics. this characteristics, in inpatients with UTI, specially, is big problem. The aim of this study is the consideration of frequency of Multi-drug Resistance (MDR) in Gram negative in inpatients with UTI in Gorgan. Material and Methods: This study carried out in 2011-2012 in Gorgan on 111 gram negative uropathogens with standard of microbiologic methods. Antibiotic susceptibility considered with Kirby-bauer disk diffusion methods(DDM). Results: From 111 considered culture, klebsiella was the frequent with 40.5% of samples, and then, Enterobacter 26.1%, pseudomonas 13.5%, proteus 6.3%, Acinetobacter 1.8%,Citrobacter 5.4%, seratia 3.6%,Providentia 1.8%, Edvardsiella 0.9%.9 classes of antibiotics(18 antibiotics)were considered, the most of antibiotics resistance in this study were seen in clindamycin (99.1%) and then cephalosporin (62.2%) and the most sensitivity belonged to Carbapenems (94.6%) and Amikacin (91%). Just pseudomonas was resistance to Carbapenems. 68.5% had resistant to multi drugs (MDR) simultaneous.27% to 3-4 Classes (Clindamycin, Cephalosporin, Nitrofurantoin, Fluoroquinolone) and22.6% was resistance to most of 7 classes of Antibiotics.76.3% of hospitalized patients had MDR. Also, all of the citrobacter in inpatients had resistant to multi drugs simultaneous. Conclusion: In this study, were seen high frequent of multi drug resistant in uropathogens in both inpatients (76.3%) and outpatient (59.6%).

Keywords: Multi Drug Resistant, Gram Negative Bacteria, Hospitalized Patients, Urinary Tract Infection, Gorgan

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P33

Survey of the Most Prevalent Case of Pneumonia and Antibiotic Resistance of Gravm Negative Bacilli Isolated fram Pulmonary Infection in ICU Rajaee Hospital 2014

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Introduction Nosocomial infection are one of the most important health problems in admission patients in ICU.peneumonia is the most common nosocomial infections in ICUs.Incidence of nosocomial pneumonia in ICU is about 10-20 percent and in patients with trachea tube are reporting 80 percent. The goal of this study is to determine drug Resistance Pattern of gramnegative bacilli isolated from hospitalize patients with pulmonary infection in ICU. Material and Methods: This study is during 10 mounths (2014), the 96 samples of trachea tube or pulmonany fluids of patients. Samples were transported into TSB medium, and incubated in for 24 hours. Then subculture on Blood agar, chocolate agar, EMB. After 24h growth, differential and microbiological specific tests were done for determining of bacterial pathogens. Antibiotic resistant testing was performed on Muller Hinton agar by using disk diffusion (Kirby-Bauer) method, according to CLSI. Results: of the 86 cultures, isolated microorganisms in order of frequency included:Ceratia18(20.90) klebsiella 9(10.4%), Pseudomonas 3(3.4%), Enterobacter sp 16 (18.6%), Acinetobacter 15 (17.4%). Drug sensitivity tasting performed, results indicate the highest sensitivity Amikacin 61.6%, 18.6% ,Gentamycin 20.9%. Cefepime Conclusion: The present study shows high prevalence of antibiotic resistance in gram negative bacilli isolated from patients admitted in ICU. It seems that irregular usage of antibiotics is the reason of high resistance.To overcome this problem it need to develop new antimicrobial agents, limiting the unnecessary use of antimicrobial and increasing compliance with infection control issue.

Keywords: Antibiotic Resistance, Respiratory Infection, ICU, 2014

P34

Laboratory Determination of Nosocomial Infections Control

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Background: Nosocomial infections are the most important issue of health centers that are directly related to the quality of care in hospitals. Unfortunately, in recent years all over the world and the country, this infections has been rising. METHODS: This study reviewed papers presented at the base type (SID), Iran Iranmedex Forums microbiology science journals. Results: While most of nosocomial infections related to urinary tract infections, wound and blood, Enterobacteriaceae and Pseudomonas accounted for more than 75% of the bacteria isolated and in ulcers and urinary tract infections caused by staphylococci, 22% of survey equipment and medical equipment caused by Staphylococcus epidermidis, Staphylococcus aureus and Entrobacter aerogenese. Gram negative bacteria were isolated in 96.7% of bloodstream infection that were resistant to NICU antibiotics. Gram-positive bacteria were highly resistance to Penicillin and Amoxicillin. Resistance of gram-negative bacteria to Cephalexin to Tetracycline was remarkable. Discussion: Whit observing the guide-line in health care program by medical and nursing staff, preventing colonization, increasing level of knowledge and awareness and changing attitudes of nurses to use the Larson technique, quality control management in microbial identification, control and monitoring of possible errors, accurate determination of antibiotic resistance, using proper antibiotics and prevention the increasing of antibiotic-resistant strains are effective in the control of hospital infection.

Keywords: Nosocomial Infections

P35

Prevalence of Methicillin Resistant Staphylococcus Aureus (MRSA) Isolated from Health Care Staff in Mofid Children Hospital, Tehran, Iran

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Background and Aim: Methicillin Resistance Staphylococcus aureus (MRSA) is a type of staphylococci that is resistant to the antibiotics such as methicillin, cloxacillin, dicloxacillin, naficillin and cephalosporins.. In present study, we sought to examine the prevalence of MRSA strains of S.aureus and detect the genes of hlg and pvl in health care personnel. Materials and Methods: The descriptive study was conducted from Jan to December 2014. In this survey, 229 nose specimens were taken from the helth care personnel of Mofid Children Hospital. The isolates were identified as S.aureus based on biochemical and phenotypical tests. To determin the profile of antibiotic resistance of S.aureus isolates, the disk diffusion method (Kirby-Bauer) was used according to 2013 CLSI guidelines. The PCR assays were used for detection of hlg and pvl genes. Results: Among health care personnels, two hundreds (87.33%) were female and 29 (12.66%) were male. Out of 229 samples, 27(12%) isolates were positive for S.aureus of which 21 (77.7%) were MRSA and 6 (22.3%) were MSSA. PCR assays for detection of hlg and pvl were used. Overall, 17 (81%) of MRSA isolates were positive for the presence of hlg but were negative for pvl gene. Conclusion: In conclusion, gamma-hemolysin appear to be a more possible virulence factor than Panton-Valentine Leukocidin in MRSA isolates.

Keywords: Methicillin Resistance Staphylococcus Aureus, Hlg Gene, Pvl Gene, Medical Staff

P36

Nosocomial Infection and its Effective Factors in Iran

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Background: Nosocomial infection is one of the main problem in modern medicine that relates to the quality of health care in hospital and is a worldwide problem whit different countries. It cause the spread of infectious disease in the society, prolongs of hospitalizes duration, additional treatment charges and mortality of affected people. Methods: This is a Meta-analysis study of 50 published articles carried out during 1991-2013 about the incidence hospital-acquired infections in Iran which presented in SID, Irandoc, Iranmedex and Iranian Journal of Medical Microbiology. Results: 73.1% of surgical wound infection caused by gram negative bacteria (Eschershia coli,Kelbciella, Pseudomonas) and 22% by Staphylococos aureus. Staphylococos epidermidis; S.aureus and Enterobacter aerogenes were isolated more than other in medical instrument. 91.23% of geram negative bacteria in blood infection were resistance to NICU antibiotic. Antibiotic resistance to Pseudomonas was higher to Nitrofurantoin, Nalidixic acid and Norfloxacin. more than 90% of S.aureus were resistant to Pencilin, but their resistance to Vancomycin and Rifampin were rarely reported. The prevalence of S.aureus among the medical and nursing staff were at society common rate but the antibiotic resistance were higher than others. Discussion: Nosocomial Infection caused by different organisms but Whit observing the guide-line in health care program by medical and nursing staff, preventing colonization, increasing level of knowledge and awareness and changing attitudes of nurses to use the Larson technique, quality control management in microbial identification, control and monitoring of possible errors, accurate determination of antibiotic resistance ,using proper antibiotics and prevention the increasing of antibiotic-resistant strains are effective in the control of hospital infection.

Keywords: Nosocomial Infections, Antibiotic Resistance

P37

Demodicosis A Neglected Cutaneous Parasitic Disease

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Background and aim: The cause of demodicosis in humans are two species of Demodex called folliculorum and brevis. The disease is seen in male and female. Methodology: There is no clinical symptoms in individuals with normal immunity system, but in those who referred, dermatitis, rough, dry and scaly skin rosacea, particularly asymmetrical papulopustular or granulomatous variants and in some cases of perioral dermatitis, blepharitis (inflammation of the eyelid margins) were observed. In this report 15 cases of demodicosis diagnosed in recent years are presented. Results and discussion: The diagnosed cases were individuals who referred to the laboratory for dermatophytosis. In sampling, slide preparation and microscopic evaluation Demodex species was observed and only in one case co- infection of dermatophytosis and demodicosis demonstrated. 7 out of 15 patients were male and 8 were female. The range of the age was from 4 to 52 year. None of the patients had any information about their disease and the cause. The physicians were ordered the examination for dermatophytosis. It is necessary that the parasitologists and mycologists consider the demodicosis during the sampling, preparation of slide and microscopic examination of cutaneous lesions.

Keywords: Demodex Folliculorum, Demodex Brevis, Demodicosis

Iranian Association of Clinical Laboratory Doctors

Laboratory and the Environment P38 - P40

P38

Evaluation Ofgiyardia Intestinal Parasitic Infection Incidence Among Health Card Applicants in Babol

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Introduction: Intestinal parasitic infection is one of the public health problems on developing contries. by everincreasing of population,providing Safe food is one of the critical and complicated problemon different Countries, especially on developing countries. Employs in the center of providing food in the case of observing hygienic principle can have important role in transferring illness By the important of epidemiologic study as the first step for recognition and control of contamination species the recent study for incidence of intestinal parasitic infection among health health card application in babol. Method: This cross sectional study started in azar 92 until azar 93 on deputy minister laboratory.1700 people health card applicants selected by Sampling method and recorded by 2 direct labratory and logol coloration and blood group gender and age variable method. Finding: From 1700 people under study were%55/3 men, %45/6 women Total frequency of giyardia parasitic infections was %40/7. The Incidence rate of contamination on men was %69/5 and women %30/5 contamination rural was %62 and urbanies was %38.The age under study 18-45.Meaningful correlation between and gender.from 693 of parasitic positive%45 had (o) blood group. %34 (a) blood group %20 (B) blood group and %1 (AB) Blood group study showed that there is meaning full correlation between (o) and giyardia parasit Conclusion Result: showed that there is high some deal incidence between food stuffs provider incumbents especially zhiyardia cyst.so that for reducing contamination among this person suggested that the cases like stool test had done every 3 month and propagation hygienic instruction controle and criteria apply on hygienic critical and rural zone water test according to this species of intestinal infection and protozoa.

Keywords: Giardia, Health Card Applicants, Parasite

P39

Wastes Management of Laboratories

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Introduction and Today, due to increasing urbanization and the expansion of urban population, an increasing number of healthcare centers and laboratories, the laboratory features of infectious hospital waste and dangerous toxic, are very important and is a major focus of environmental pollutants are considered. Therefore without the need for laboratory risk of infectious hospital wastes before disposal of non-fuel technologies, particularly the central nervous system of sterilization by autoclave machines Its given the high rates of infectious waste and the high cost of disposal of these wastes, and risks of spreading infectious diseases (HBV, HCV) Due to the non-hazardous and unsanitary waste disposal system for the efficient elimination of hospital waste with regard to health issues and economic environment is important. Method: This study documents the types of waste at the hospital laboratory references refer to the Scientific and Statistical, Ministry of Health, Treatment and Medical Education, Environment and Waste Management, It is intended to explain and describe them. Discussion and result : Urban health care providers, including major issues that must be considered, particularly for health system planners and managers, The trustees of the hospital and laboratory waste management is one of the main factors determining the effectiveness of a community is very important. According to one hundred thousand hospital beds in the country, about 300 thousand Kg of daily waste and medical waste generated in the country. Therefore The lack of use of technology for non-hazardous and sanitary landfill, a major challenge faced by the people and its affiliates have, Given the high rates of infectious waste and the high cost of disposal of these wastes Cost approximately 6 to 20 times the normal cost for waste considering the risks of spreading infectious diseases (HBV, HCV). The study was conducted by the authors Today, 80 percent of the country's hospitals are equipped with the waste elimination system for small medical center laboratory is also planning an extensive In this context, it is necessary to waste management practices toward achieving healthy environment as a human right to be examined.

Keywords: Medical and Laboratory Waste, Hazardous Waste, Waste Management

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P40

Faunal Survey of Freshwater Snails in Gharehgole Spring، Kazerun County

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Introduction and objectives: Snails are organisms that exist in various ecolosystems. Snails are an important food sources for fish, turtles, and other wildlife species. Due to sensitivity to certain chemicals, many species are excellent indicators of water quality. The present study was designed to identify taxonomic status of snails in Gharehgole spring, Kazerun County, Fars Province, Iran. Methods: Collected snails were placed in 70% ethanol labeled with the collection site information inside. Snails were identified in laboratory the mostly by morphology study of the shell (Conchology) using qualified identification keys. Results and discussion: Biodiversity of freshwater snails in Gharehgole spring and Siahrood river, Kazerun conty was investigated during 6 months. A total number of 1928 live snails were collected and identified. In total, 13 species belonging to 9 Genera and 7 Family of freshwater snails includeing: Melanoides tuberculata, Theodoxus euphraticus, Melanopsis costata, Melanopsis peaemorsa, Melanopsis doriae, Physa acuta, Lymnaea gedrosiana, Lymnaea pereger, Gyraulus euphraticus, were identified. Regarding the number and distribution, Theodoxus euphraticus with 19.08% was the dominant species of while Melanoides tuberculata had the lowest dispersion of only 0.62%. These organisms improve the quality of aquatic ecosystems. by their ability of absorbing oil, heavy metals, radioactive materials and other pollutions from environment. to produce clean and healthy water environment.

Keywords: Snail, Kazerun, Faunal, Freshwater, Snails

Iranian Association of Clinical Laboratory Doctors

Law and Ethics: Civil and Criminal Responsibilities P41- P46

P41

Evaluation of Drug Abuse Diagnostic in Isfahan Health Department Laboratories in 1392

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Introduction: In Islamic Republic of Iran lows for some purpose such as marriage, employment, driver health card, licenses craft, accused of drug use and abuse and referrals from the armed forces and security units of offices, required to provide a certificate of non-addiction. When they refer to selected laboratory, their urine taken in protected environment for prevention of adulteration, and then examinated for the presence of Morphine and Meth (Glass) compounds. Since the goal is to get non addicted certificate, when addicted person have too much time to refer to laboratory, they will try to hide their addiction in different ways. Methods: This article does as descriptive – analytical article based on date from 23 selected laboratories under supervision of the Health Department Center during the year 1392 in Isfahan. In this method, the percentages of positive cases in different groups of referrals were analyzed separately. Date analysis was performed by Spss-18 software. Result: The present results indicate a 3.66 % positive of morphine and 0.55 % positive of Meth compounds in overall average of referral to these laboratories. While these amounts in referral from the armed forces, security units of offices and the judiciary that sample taken unexpected are respectively 27.87% and 9.07%. Conclusion: Vast differences in overall positive average and in referral from the armed forces, security units of offices and the judiciary indicate an error in process of drug abuse diagnosis. Because when a person has a deadline to go to the lab, he try in various forms (before, during or after sampling) to interfere and cheat in our process that will hidden from our regulatory and diagnostic systems.

Keywords: Positive Drug Abuse, Cheat, Non-Addicted Certificate

P42

Blood Donation and Medical Ethics

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Despite the progress in science and technology, human is not yet capable to produce a material or solution to compensate the blood loss, this vital material in body. Blood loss is only recovered through transfusion of blood prepared from donors. Blood safety is widely dependent on the information obtained from voluntary blood donor. It is his/her ethical responsibility to provide true information. On the other hand, the donor and the recipient have ethical issues to be considered. For this reason, International Society of Blood Transfusion (ISBT), in 1980, in Montreal, approved the code of Ethics for Blood Transfusion. According to this Code, it is emphasized on access to safe blood, free blood without need to substitute, informed consent to the blood transfusion, the right to not accept the blood and the right to be informed if they have been harmed. This article attempts to highlight some of the important points in blood transfusion medicine, ethical aspects of blood transfusion according to Islamic principles and Iran laws.

Keywords: Medical Ethics, Blood Transfusion, Blood Donation

P43

Medical Laboratory and Medical Ethics

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Clinical medical laboratory is one of the important consistent factors in communicable and non-communicable disease prevention is important. Along with the development of universal laboratory science, that's scientific position is more clear. Accuracy, speed and compliance with ethical and honest with the use of standard scientific methods, laboratory features are desirable. Staff working in a medical lab are committed to the principles of ethical and professional conducts. Because of the importance of ethics in the laboratory some guidelines, are presented by the World Health Organization and the International Organization for Standards. Data collection, patient consent, confidentiality, testing, reporting results, data archive documents, access to documents, financial and organizational set-section, some special requests, such as dissection and HIV testing important issues are the subject of ethical behavior in medical laboratories.

Keywords: Ethic, Laboratory, Medical, Diagnosis, Patient

P44

A Survey of the Awareness of Employees of Lab in Hospitals of Medical Sciences University of Tabriz Regarding the Rights Charter of Clients Referring to Medical Diagnosis Laboratories and Effective Factors on it

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Introduction and aim: Considering the human dignity rights as stated in Islam and constitution of our country is one of the priorities and necessities of formulating charter of clients' rights to medical diagnosis labs and it is approved by high council of medical ethics. Also, patients' satisfaction is one of the effectiveness features of hospital services and the requirement of achieving patients satisfaction is observing their rights. This study aimed to evaluate the awareness of employees of laboratory of hospitals in Tabriz medical Sciences University regarding the rights charter of clients referring to medical diagnosis laboratories and effective factors on it. Method: In a descriptive study, a questionnaire is completed randomly with supported content validity and reliability among 60 employees of labs in Tabriz medical Sciences University hospitals and is completed by them. The data are evaluated by SPSS software as mean, standard deviation, frequency distribution, chi-square and Pearson correlation. Findings: The awareness of full employed employee of patient rights 0.53±0.15 is average and the awareness of other employees (including temporary and student projects) regarding patient rights is 0.46±0.13 (weak) and observing these rights in mentioned hospitals is 0.75±0.1 as good score. Discussion and Conclusion: Generally, most of the studied employees have not good awareness in patient rights and as awareness is the performance basis, to improve this issue we can consider some programs regarding patient rights charter in medical labs including at-service tests and installing this charter in labs can be proposed.

Keywords: Laboratory, Patient Bill of Rights

P45

Ethical Issues and Considerations in Molecular Diagnosis of Diseases

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Background: In the last century, many different technologies in biochemistry and molecular biology have been emerged and developed. Scientists generated various tools, instruments and diagnostic tests which have been widely applied in definition, diagnosis, treatment and follow up of human diseases. Parallel to advances in molecular techniques and methods and their incorporation into medical practice and research purposes, the world of science and medicine faced with different ethical issues related to molecular diagnosis, specially molecular genetics and genomic testing. Furthermore, laboratory professionals and clinicians were challenged to establish approaches and protocols for protecting and informing patients and research participants. The aim of this article is consideration of some ethical principles related to molecular diagnosis. Methods: In this study, databases and different scientific sites were searched and the articles related to ethical issues in molecular diagnosis were reviewed. Results and Conclusion: New technologies are rapidly giving rise to new abilities to diagnosis and treat, and advances in understanding of molecular basis of human diseases are expanding exponentially. However, ethical considerations of these rapidly developing technologies and molecular diagnosis tastings have remained in the past and their progression is slower than rapid advances in science. Despite some dilemma and controversial problems, we discussed some ethical considerations of molecular diagnosis which have resulted in relatively welfare of patients and research participants.

Keywords: Ethical Considerations, Molecular Diagnosis, Molecular Genetics, Genomic

P46

Evaluation of Professional Ethics In Business (Case Study: Hospital Laboratory staff Semnan)

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The present study aimed to vision applied Descriptive research and data collection is part of the survey, which was conducted a cross-sectional mannerThe study population included all laboratory personnel are 100 hospitals in Semnan province. As well as a stratified random sample is determined. A questionnaire with 22 questions 6 and in the area of the current situation and the desired components have been developed separately. To analyze the hypotheses of software SPSS19 to check the hypotheses of tests, paired-sample sign test, Friedman test was used. Assess the current situation shows that all employees adhere to professional ethics. The analysis showed that the gap between existing and desired gap between the two conditions is very low. The priority of the highest priority component tolerance and humility and compassion have the lowest priority.

Keywords: Professional Ethics, Laboratory, Patient

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Medical Laboratory in Present and in Future P47- P54

P47

The Role of the Clinical Laboratory Control of Communicable Diseases in Border Areas

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Background: Despite significant advances in the field of combating the disease, it is still important in the epidemiology of infectious diseases and public health, especially in the border areas of the country. Today, with a new understanding of ways to spread knowledge about the disease and ways to prevent the development of pathogens and disease control concept has changed and is broader and more comprehensive Diagnostic and preventive measures as a first line of defense against invading pathogens and infectious embankment and be deemed to include all the actions that must be met is to prevent the entry of a pathogen. Method: Implementation of the method in this paper can only understand the present situation and to help the decision making process. Purpose: The role of the clinical laboratory diagnosis of infectious diseases in border areas Discussion: The importance of clinical and laboratory diagnosis of infectious diseases prevention and control to limit the time the infected area and prevent the spread of disease to other areas has led. The importance of diagnosing and more important to be sensitive border areas. Currently, the diseases can be very harmful As can be seen every day in the world are ready to fight some of these factors And some countries have prepared a complete list of factors that have to deal with the planning.

Keywords: Clinical laboratory, border

P48

Recommendation Screening Test for Elderly People in Iran

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The Iranian nation is growing older. During the past two decades, the population over 65 has grown more than twice as quickly as the rest of the Iran population. The number of functionally impaired elderly is already large and is expected to grow rapidly. As the population ages and becomes more impaired, concern for the prevention of disease and promotion of good health increases. Studies have documented the potential contributions of preventive health care programs in world economic country. Advocates assert that preventive programs would result in a healthier and more industrious older population that could assist in reducing the nation's expenses for medical care and social support and contribute to the gross national product. Investigators have documented a high prevalence of undetected, correctable medical conditions among older adults living in the community. Little information is available, however, regarding the screening tests that should be an integral component of a public health program for older persons and public health programs do not focus on treatment but, instead, emphasize referrals and prevention. To identified laboratory screening tests, periodic medical review, hypertension, dermatological problems, ophthalmological problems, screening for metabolic disease, diabetes, thyroid function tests, and stool guanacos. Measuring renal function and following serum electrolytes can be useful in persons on medications, such as no steroidal anti-inflammatory drugs, when renal function is known to be impaired. The purpose of the literature review was to synthesize current knowledge from methodologically sound studies regarding the incidence and prevalence of selected undetected disorders in the elderly and the effectiveness of screening and early treatment. We suggested as well as findings from the literature, a Preventive Services and experts in geriatrics, gerontology, and health policy research to identify screening services that are appropriate for public health programs conducted by screening laboratories.

Keywords: Screening Test, Elderly People, Geriatric Medicine, Metabolic Disease Prevalence, Geriatric Health

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P49

The Role of Microrna-21 and Microrna-10b as A Biomarker in Different Steps of Polymorphism Glioblastoma

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Glioblastoma is the most common and most deadly brain tumor and still resistant to treatment. Multiform glioblastoma (GBM) is one of a class of common and deadly brain tumor. Common treatments include surgery, radiation, and chemotherapy with drugs such temozolamid, and relapses are often continue treated with further surgery or anti- angiogenes drugs such as bevacizumab. Even in the best treatment only is approximately 15 months after diagnosis for the patient's survival .microRNA plays a role in oncogenesis, tumor suppressor effect and can be used in prognosis of glioblastoma and also as a new therapeutic approach . A microRNA (abbreviated miRNA) is a small non-coding RNA molecule (containing about 18 to 25 nucleotides) found in plants, animals, and some viruses, which functions in RNA silencing and post-transcriptional regulation of gene expression. miR-21 is a target as an oncogene , programmed death of cells, Phosphatase and tensin homolog (PTEN), Myosin 1 alpha. miR-10b is another strong oncomiR on glioblastoma cell that has impact of survival and prognostic. microRNA can be used as a biomarker in glioblastoma and other cancers. Thus, the presence of glioblastoma is possible with a bit of microRNA in serum and cerebrospinal fluid without surgery. Up regulation or down regulation of microRNA in the patients with glioblastoma can be considered as targets in alternative method of treatment . The new biomarkers can be used in early diagnosis, target therapy, prediction, and prognosis type of glioblastoma.

Keywords: Glioblastoma Microrna-21, Microrna-10b, Oncomir

P50

Estimation of Manpower in the Laboratory of Fattemieh Educational-Medical Center of Semnan Using WISN Method

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Introduction: Estimation of manpower for the future is one of the necessary measures in health systems. Workload Indicators of Staffing Need (WISN) has been designed based on the actual work performed by health care workers. For each workload, a standard can be determined. Method: The method of the present study was applied, descriptive-survey. "Workload" was the independent variable and "manpower" was the dependent variable in this study. Statistical population included all procedures performed in a laboratory. According to WISN technique, the samples involved 72 processes including all tests and duties of a secretary. All the activities and tests of this laboratory were timed 1800 for times. The required data were collected by completing the "Analysis of time" tables. Alons: The amount of time allowed for leave, vacation, sick leave, and so on. Results: The results indicate the shortage of manpower in this center. Discussion: The findings showed that 14 personnel and a secretary are serving in this laboratory. Comparison of the current manpower (actual) with the calculated manpower indicated that this laboratory needs a mean manpower of 18.89 people, 180.05 people in the best working condition and 19.73 people in the worst working condition. In addition, a mean of 3.91 secretaries is needed in this laboratory, 3.70 people in the best working condition and 4.13 people in the worst working condition. Therefore, it can be concluded that this laboratory is faced with the shortage of manpower.

Keywords: Estimination of Manpower, Method OD Wisn, Standard of Work, Workload

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P51

Analysis of Problems and Challenges of Managers of Labs and Solutions: A Qualitative Study

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Introduction: The present study aimed to evaluate the management problems in labs of state hospitals in terms of managers of these centers and an analysis was made of its reasons and a vivid image of these problems is presented. Method: By a qualitative approach and content analysis as abstract, 15 managers and authorities underwent non-structured interview for one year by purposeful sampling method in Tabriz city hospitals. The data are analyzed by MaxQ Software. Results: The major problems and challenges: 1- Equipment purchase trend (cheap, unqualified without qualitative approval of consumer, the lab) 2- Absorbing human resources without considering technical skill, 3- Inactivation and lack of interference of technical authorities of sectors in solving the problems of lab and directing the problems to management, 4- The lack of physical space design of lab in development of hospital and increasing hospital beds, 5- Dependence of state labs to temporary forces leading to the low quality and increase of hidden costs of lab, 5- The lack of motivation of the staffs of the difference of income of employees of labs of hospitals of a city. Discussion: To solve these problems: Absorbing effective force can increase quality and reduce consumption cost and increasing screening equipment quality in equipment purchase and consideration of technical authorities and involving them with the problems can be proposed to avoid irresponsibility. To avoid job burn-out and difference of income of employees, lab staffs of hospitals in their service duration can work in the centers with various income levels to apply all of the benefits of a hospital and they can avoid the repetition of environment and job burnout leading to the low quality.

Keywords: Lab Managment

P52

Nano Lab-on-a-Chip: a Future Novel Approach for Medical Diagnosis

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Background and purpose: The ability to perform laboratory operations on small scales using miniaturized (Nano lab-on-a-chip) devices has many benefits. Nano lab-on-a-chip technology enables the performance of several different experimental tasks in combination with automated data analysis in one process on a single instrumental platform. In this study, we review the advantages of lab-on-a-chip technology. Materials and Methods: Articles with significantly high citation where retrieved from reliable databases (PubMed, Embase) using keywords such as "nano lab-on-a-chip" and" "medical diagnosis" were used to write this article. Results: previous studies have shown, that this new technology has several advantages compared with conventional techniques; these include minimal sample requirement, ease of use, quick analysis times, high reproducibility and most importantly, this technique is capable of early diagnosis of some cancers. Conclusion: Nano lab-on-a-chip technology is about to revolutionise the methodology used in pharmaceutical, biochemistry, molecular biology laboratories and medical diagnostics.in addition, the technology provides the tools to increase experimental throughput significantly.

Keywords: Nano, Lab-on-a-chip, Medical Diagnosis

P53

Development the Tetra-ARMS PCR Method for Genotyping the rs10882273 and rs10882283 Mutations of RPB4 Gene in type-2 Diabetes Mellitus Patients

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Introduction: Diabetes mellitus is a group of metabolic diseases in which there are high blood sugar levels over a long period. If left untreated, diabetes can cause many complications include cardiovascular disease, stroke, kidney failure, foot ulcers and damage to the eyes. Insulin resistance and progressive β-cell failure are the key factors in the pathogenesis of type 2 diabetes mellitus (T2DM). The role of RBP4 in obesity and insulin resistance was first discovered by mice with an adipose-specific knockout of GLUT4 (adipose GLUT4-/- mice). These studies support a primary role of RBP4 in insulin action and suggest that genetic variationswhich alter the expression levelof RBP4 might influence the risk of T2DM. Foot ulcers are significant complications of diabetes mellitus and often precede foot amputation. Ourpurpose of this study is developing an efficient،rapid،economical and careful SNP genotyping method to assay correlation of rs10882273 and rs10882283 mutations with diabetic Foot. RESEARCH DESIGN AND METHODS: Under supervision of physician,T2DMpatients were selectedfrom Tehran Shariati hospital in two groups،with and without grade 1 or 2 ulcer.DNA was extracted with salting out method. Then, Tetra-ARMS PCR was performed on collected samples. Finally, some of the samples were sequenced for confirmation. RESULTs and Discussion: We developed the Tetra-ARMS PCR for the first time for genotyping the rs10882273 and rs10882283 SNPs. Our results showed that the developed method is reliable, accurate and economical for genotyping the mentioned mutations in T2DM patients.

Keywords: Diabet, Mutation, Tetra ARMs

P54

An Overview on the Study of Urine and its Sediments in the Diagnosis and Treatment of Diseases in Iranian Traditional Medicine

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Background: Research under the direction of Study of urine sediment examination of Iranian Traditional Medicine At the sight of the elders of the profession Such as Abu Ali Sina, Avicenna, Seyed Esmail Jarjani, Mohammad Mahmoud Alchaghmeyny and other well-known Iranian physicians in the diagnosis and treatment of diseases. Methods This study browse by using library traditional medical books of Al-Qanun fi al-Tibb by Ibn Sina, Avicenna and khofi alai by Seyed Esmail Jorjani and ghanoonche fi Tibb by Mohammad ibn Mahmoud Alchaghmeyny studies were performed in the urine and the information was gathered after simplification. Findings: Abnormal results of urine tests The Professor of Iranian Traditional Medicine Although it may not be a significant feature But the good sensitivity of parenchymal kidney and urinary tract diseases are showing. An abnormal urinary sediment should never be ignored unless it has been found to be an acceptable explanation. Color and abnormal sediment can be a sign of liver disease and jaundice, and tabs infections, diabetes and other diseases is. Conclusion: Urine examination is an important diagnostic method in traditional medicine of Iranian. Considering to the tetraploid digestion theory of Iranian Traditional Medicine can be used to check of urine the general condition of the body, the second digestion (liver digestion) and prognosis of many diseases are discovered and before the disease develops as possible to treat it.

Keywords: Traditional Medicine, Diabetes, Urine, Urine Frequency

Iranian Association of Clinical Laboratory Doctors

New Methods in Diagnosis of Inherited Metabolic Diseases P55 - P61

P55

Implications of Next Generation Sequencing for Genetic Diagnosis of Inherited Metabolic Disorders

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Background: While molecular diagnosis of inherited metabolic disorders is traditionally based on targeted analysis of genes known to be related to clinical features by using methods like linkage studies, there are still numerous cases remain without specific diagnosis. Therefore, it is necessary to use new strategies which have the potential for identification of mutations underlying such cases. Since 2005, next-generation sequencing (NGS) technology is developed as a fast, high-throughput and cost-effective approach to accelerate the identification of genetic causes of inherited disease. The purpose of using this technology is to employ it as a fast, comprehensive tool for diagnosis of inherited metabolic disorders. Since clinical and allelic heterogeneity has complicated the diagnosis of these disorders, therefore many inherited metabolic disorders could be diagnosed by using this technology.recent NGS-based studies have aimed detection of genetic causes of inherited metabolic disorders.They have proved it as a powerful diagnostic tool for investigating genetic causes of rare unknown cases, particularly variants located in noncoding regions. This method is also useful in determination major cause of disease in cases which several mutations in different genes lead to a same disease. This study suggesting that these approaches are capable to be used in routine diagnostic plans.

Keywords: Inherited Metabolic Disorders, Genetic Diagnosis, Next - Generation Sequencing

P56

Next Generation Sequencing in Genome: Illumina Method

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Nowadays new cost effective methods of sequencing have been introduced in which the sequencing of a large section of genome could be detected in a short period of time. These methods are known as the new generation of sequencing detection. It is possible to detect hundreds of millions short sequences (35-100bp) only in one test. Principles of these kinds of sequence detection methods were explained in the previous review article. In the current review article, details of next generation of sequencing detection in the illumine method will be explained. In this method whole genome is broken into double strand DNA fragments first, then these fragments with 3' and 5' overhang are repaired and finally blunt-ended DNA are made. At the next stage 3' ends are enlarged by Adenine and 5'ends of fragments are phosphorylated too. Now the adaptors are attached to two ends are fragments and purified on gel. These DNA fragment samples are attached to the surface of flow cell using these adaptors with help of hybridization. Then at the next stage centralized colonies of fragments (clusters) are formed from Amplification of samples with the bridge method. After this stage, 4 types of base which are attached to reversible terminator colors are added after connecting one of four base to the correct place, amplification stops and then other material omitted. At the next stage with photography of fluorescent, nucleotide will be read correctly. The growth of 3' ends will be taken by the deletion blocking material with chemical reactions. Therefore this stage is continued until the sequence of whole cycle of the fragment is detected. By adding these sequencing fragments together the sequence of whole genome is detected using the original sequence. This former stage is performed by computers and processors.

Keywords: Next Generation Sequencing (NGS), Illumina, Flow cell, Adapter

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P57

Pharmacogenetic Prediction of Clozapine Response in Treatment-Resistant Schizophrenia Patients Improves the Line of Therapy

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Pharmacogenetics studies in schizophrenia patients illustrated variable response to antipsychotic treatment. Moreover, most of patients will require long-term use of atypical antipsychotic medications. It may lead to drug side effect or cause treatment-resistant. Clozapine is the best choice in the treatment of refractory patients, although it is not effective in all of them and also have its side effect, so it is routinely employed not for first-line treatment. Therefore any information that help the prediction of outcome each of antipsychotic drugs in a particular patient will, be valuable for to reduce side effects. According former studies, we analyzed Taq1A (rs1800497), T102C (rs6313) and His452Tyr (rs6314) polymorphisms as effective SNP which associated with clozapine response in schizophrenia patients in ethnic group of Iranian population. Our data confirm these relations. We also hypothesis that carrying C allele for rs1800497 (p=0.04) and rs6314 (p=0.00) and T allele for rs6313(p=0.03) might be helpful for determining response to clozapine in first line therapy resistance patients .our data showed 37% of patients who had good alleles together , illustrate improvement response to clozapine versus 1.6% of patients who hadn't good allele and response to clozapine. With regarding our results and in attention with long-term use of atypical drug and its side effect or treatment-resistant to first line therapy, so we suggest that genetic screening of these three effective SNP, it have advantageous predictive clozapine response in Iranian treatment-resistant schizophrenia patients.

Keywords: Clozapine Refractory Patients, Taq1A, T102C, His452Tyr, Variants, Iranian

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The Negative Association of Oxidative Stress and Serum Phenylalanine Level in Phenylketonuria

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Introduction: Phenylketonuria (PKU) is an autosomal recessive disease caused by deficiency in activity of phenylalanine hydroxylase (PAH). PAH is involved in the conversion of phenylalanine to tyrosine. Therefore the decreased activity of PAH leads to hyperphenylalaninemia in the PKU patients. Oxidative stress may also contribute to the brain damage in the PKU patients. The purpose of this study was to evaluate the serum level of oxidative stress markers including malondialdehyde (MDA), ischemia modified albumin (IMA) and uric acid levels in PKU patients and their association with the level of serum phenylalanine. Methods: Fifty patients with PKU and fifty age and sex matched healthy subjects were included in the study. The blood samples were obtained and the serum level of phenylalanine was measured using reverse phase HPLC method. The level of MDA, IMA and uric acid were determined using colorimetric methods. Results: Compared to the control group, serum phenylalanine concentration, IMA and MDA were markedly increased in PKU patients ($p<0.001$, $p<0.001$, $p<0.01$, respectively). However, the level of uric acid was not different between the groups ($p=0.66$). There was a negative correlation between the level of MDA and IMA and serum phenylalanine levels. Conclusion: The results of present study indicate that oxidative stress was higher in the PKU patients compared to healthy subjects. The inverse association of oxidative stress with serum phenylalanine.level suggests that oxidative stress in PKU patients may be related to dietary restriction.

Keywords: Phenylketonuria, Oxidative Stress, Ischemia Modified Albumin, Malondialdehyde

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The Application of Tandem Mass Spectrometry for Newborn Screening of Inherited Metabolic Disorders

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Introduction: Newborn screening has initiated in the 1960s with the aim of diagnosing phenylketonury. Early intervention and preventing mental retardation were the first aims of newborn screening. The introduction of tandem mass spectrometry (MS/MS) enables us to measure more than 40 analytes in a few minutes with the use of single assessment. Objective: The objective of this study was to describe MS/MS and discuss its clinical applications in diagnose and screening inherited metabolic disorders. Methods: In this study, we searched Pubmed and Sciencedirect with suitable key words (mass spectrometry, tandem mass spectrometry, metabolic disorders, inherited metabolic disorders, newborn screening) Results: The electronic search retrieved 97 articles. 66 of which were excluded for not meeting the criteria. 31 of them were evaluated in details and finally 21 of articles were selected. Discussion: Most of the articles were about the clinical applications of tandem mass spectrometry and some of them talked about the difficulties of this method. Conclusion: Screening at the time of the birth reduces the morbidity, mortality, and social burden on the population. Some features such as high throughput, exclusivity and easiness of sample preparation has introduced tandem mass spectrometry as a reliable method for screening fatty acid oxidation defects, amino acid disorders and organic acidemias. MS/MS provides ways to diagnose a large number of metabolic disorders in a single analytical run. So it can be used for newborn screening program as a fast and highly specific diagnostic technique for screening of a great variety of inborn metabolic disorders.

Keywords: Mass Spectrometry, Tandem Mass Spectrometry, Metabolic Disorders, Inherited Metabolic Disorders, Newborn Screening

P60

Implications of Next Generation Sequencing for Genetic Diagnosis of Inherited Metabolic Disorders

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Background: While molecular diagnosis of inherited metabolic disorders is traditionally based on targeted analysis of genes known to be related to clinical features by using methods like linkage studies, there are still numerous cases remain without specific diagnosis. Therefore, it is necessary to use new strategies which have the potential for identification of mutations underlying such cases. Since 2005, next-generation sequencing (NGS) technology is developed as a fast, high-throughput and cost-effective approach to accelerate the identification of genetic causes of inherited disease. The purpose of using this technology is to employ it as a fast, comprehensive tool for diagnosis of inherited metabolic disorders. Since clinical and allelic heterogeneity has complicated the diagnosis of these disorders, therefore many inherited metabolic disorders could be diagnosed by using this technology.recent NGS-based studies have aimed detection of genetic causes of inherited metabolic disorders.They have proved it as a powerful diagnostic tool for investigating genetic causes of rare unknown cases, particularly variants located in noncoding regions. This method is also useful in determination major cause of disease in cases which several mutations in different genes lead to a same disease. This study suggesting that these approaches are capable to be used in routine diagnostic plans.

Keywords: Inherited Metabolic Disorders, Genetic Diagnosis, Next-Generation Sequencing

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P61

Prevalence of Phenylketonuria in Newborns in Ardebil by Screening and Analyzing the Results

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Introduction PKU is an inherited metabolic disorder caused by a deficiency of essential amino acids phenylalanine catabolism that lead to the increased concentration of phenylalanine in the toxic range. This condition has irreversible effects on brain development that can include mental retardation and severe developmental delay. The high prevalence of this disorder among Iranian ethnic group had been shown. In recent years, systematic screening program in Iran provinces is the major reason of increased the number of infants identified with PKU and effective treatment strategies caused to reduces the development retardation and complications of PKU in infants. Method At the first 72 hours after birth, of all children a blood sample taken from the heel and send to the laboratory for testing to Guthrie immediately. Then the test repeated for the positive results infants. Then the positive repeated samples send to Pasteur Institute of Iran for test further and reject the malignancies. Results and discussion Of the 44232 births in 21 months in Ardebil province 13 cases with phenylketonuria were detected by screening. Among them 61.5 % of the patients had the classic phenylketonuria and 38.5 % had mild phenylketonuria. The prevalence of phenylketonuria in Ardebil was 1:3402. The prevalence of consanguineous marriages among patients was 85%. Conclusion Given the high rate of consanguinity among patients seems to be a necessary requirement for genetic counseling before the marriage. Besides raising awareness and knowledge in relation to genetic disorders can have positive results in reducing the incidence of this disease.

Keywords: Phenylketonuria, Ardebil, Screening Test

Iranian Association of Clinical Laboratory Doctors

Pathology of Clinical Laboratory Education and The Related Curricula P62 - P63

P62

How do Nursing Students in their Curriculum Perceive Basic Sciences Courses at Shahid Beheshti University of Medical Sciences?

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Background and Objectives: There is growing concern among medical educators that traditional programs of teaching nursing students have not provided better outcomes of learning. The inclusion of detailed basic science courses in nursing school curricula has been a concern of students, as well. The main objective of this study was to explore the opinions of nursing students towards basic sciences courses taught to them in curriculum and the applicability of these courses to current clinical practice. METHODS: This descriptive study was performed on all 427 nursing students at Faculty of Nursing & Midwifery, Shahid Beheshti University of Medical Sciences. Data were collected with a semi-structured questionnaire for basic science courses. Face and content validity were checked. The reliability of the questionnaire was determined using the Cronbach s Alpha-test. Data were analyzed by SPSS (version 18) and descriptive statistics. RESULTS: Mean age of students was 21.6. 59.2 percent was female. 41.3 percent of students agreed with coverage of content of basic science courses with nursing practice courses. Also, 25.1 percent of students believed that relation and presentation of basic science theory with practical courses was the strengths of nursing education. CONCLUSION: Current opinions of nursing students towards their basic science courses indicate a need to reform the curricula so as to maximize the benefit of these courses.

Keywords: Nursing Students, Basic Science Courses

P63

Evaluation of Training Programs Based on the Rating Period Clerkship Students

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Introduction: Evaluation is a systematic process for collecting, analyzing and interpretation of the obtained information for the purpose of investigating how many the objectives in mind can be achieved. Education in an academic educational system means bringing about proper and increasing changes that affect the outcome of this system, that is affecting the students, and the aim of such evaluation is promotion of the quality of an education process. Methods: 19 laboratory medicine students, active in hospitals laboratories work concerning in Hamedan University of Medical Sciences have made this study in the year 2014 and their aim was to remodel and adjust educational system with the society's needs and promotion of the quality of such educations. This piece of research work has been done on the basis of 13 sections and 205 procedural steps dealing with evaluated factors such as sampling, quality control, peripheral blood smear, clinical chemistry and auto-analyzer, hematology, urinalysis, chemical sector, microbiology, parasitology, the blood bank, the hormone and serology. Questionnaires during 2 periods, the beginning of the semester (first week of classes) and final (one week to the end of the term), the study population was distributed and then complete them by individuals were collected. Findings: The results show that the departments of microbiology and parasitology are of the highest and lowest changes which reflects the fact that the instructor in the department of Microbiology and increase the success of the program (approximately 22.9% of the trainees' knowledge) and lecturer in the department of parasitology and no significant change was to increase awareness of trainees. Conclusion: Evaluation of educational programs at the school and at the university level can be subsequently expresses support for staff training in the use of resources to achieve organizational objectives and contribute to achieving the reference potential of the area is protected.

Keywords: Evaluation, Rating Period, Training Programs

Iranian Association of Clinical Laboratory Doctors

Research in Laboratory Sciences: Clinical Biochemistry P64 - P106

P64

Comparative Study of the Oxidative Stress Markers and Antioxidant Profile in Primary Open Angle Glaucoma Patients and Healthy Subjects

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Purpose:Primary open-angle glaucoma (POAG) is the leading cause of irreversible blindness. The serum oxidant/antioxidant profile is reportedly altered in ocular pathologies. This study was designed to evaluate Comparative of the oxidative stress markers and antioxidant profile in Primary glaucoma patients and Healthy Subjects. Materials and Methods:We conducted a study of 56 PCAG patients (30 women, 26 men), 84 POAG patients (40 women, 44 men) and 80 healthy subjects (43 women, 37 men) to determine the total antioxidant capacity (TAC), malonyl dialdehyde (MDA), glutathione (GLT) and advanced oxidation protein products (AOPP). Results:The serum concentrations of TAC in POAG compared with healthy subjects were significantly decreased($p<0.025$). while the levels of MDA in patients decreased significantly ($p<0.001$). Also, the red blood cell of glutathione levels in POAG was significantly increased compared with healthy subjects ($p<0.016$). Conclusions: In conclusion, our results indicate that an excessive enhancement of lipid and protein oxidation and an excessive diminish of the total antioxidant capacity in POAG and PCAG patients compare to healthy subjects, that had a pathogenic role in primary glaucoma with rising oxidative damage.

Keywords: Primary Glaucoma, Primary Open-Angle Glaucoma, Oxidative Stress

P65

Comparative Assessment of the Antioxidant Defenses Enzymes in Primary Open Angle Glaucoma Patients and Healthy Subjects

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Purpose: Primary open-angle glaucoma (POAG) is the leading cause of irreversible blindness. The serum oxidant/antioxidant profile is reportedly altered in ocular pathologies. This study was considered to evaluate comparative of the variability of antioxidant defenses enzymes in primary open angle glaucoma patients (POAG) patients and Healthy Subjects. Materials and Methods: We conducted a study of 84 POAG patients and 80 healthy subjects. Activities of the antioxidant enzymes were measured in red blood cell spectrophotometrically. Superoxide dismutase (SOD) was determined by inhibition of the rate of adrenochrome formation at 550 nm. Catalase (CAT) was evaluated by decrease of H (2) O (2) absorbance at 240 nm. Glutathione peroxidase (GPx) and Glutathione reductase (GR) were determined following NADP oxidation or reduction at 340 nm. Glutathione S-transferase (GST) was determined by increase of the absorbance of CDNB and glutathione conjugation at 340 nm. Results: The antioxidant defenses enzymes: A significant decrease in CAT ($p<0.036$), SOD($p<0.048$) and GPX($p<0.001$) activities was show in red blood cell of POAG patients as compared to control patients. A relative decrease of GR and GST activities in red blood cell of POAG patients compared with healthy subjects was insignificantly showed (0.05)

Keywords: Primary Glaucoma, Primary Open Angle Glaucoma, Antioxidant Enzymes, Oxidative Stress

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P66

Serum Levels Variations of Granzyme H with Reproductive and Related Hormone Receptors in Breast Cancer Patients

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Background: Breast Cancer (BC) is the most common cancer in Iranian women and Iranian patients are relatively young. GranzymeH (GZMH) is a functional cytotoxic serine protease of NK cell granules, which expands the cell death-inducing repertoire of innate immune system. GZMH is constitutively and highly expressed in human NK cells and to possess chym otrypsin-like (chymase) enzymatic activity. The purpose of this study was to determine GZMH level in BC and healty women.Methods: 30 breast cancer patients and 30 control women in premenopausal status, participated in this study. GZMH and Estrogen levels and ER, PR were measured in cancer and healty women subsequently using ELISA and Radioimmunoassay, Immunohistochemy methods.Results: Mean GZMH value was lower in BC than healty women ($p<0.0001$). Conclusions: our study implicates existance of suppressor or problem for producing of GZMH in patients group and levels of estrogen can't affect on making positive ER,PR.

Keywords: Breast Cancer, Estrogen, Granzyme H

P67

The Effects of Drug Intraction in Lab Results

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One of the most important of Quality Assurance system is to decreased the internal and external agents that impressed laboratory results. Drugs are most important agent which cause laboratory errors and produced false and positive laboratory results. They could interfere laboratory tests lonely, synergisticly and antagonistly. Drug interference are classified into four groups: physical, chemical, pharmacological, and cross mechanisms. The purpose of this survey is to study Drug interference impressed to misunderstand laboratory results interpretation and analyse laboratory tests. Therefore, Physicians, clinical laboratories directors and employees should recognize how drugs interference impressed laboratory tests and results interpretation.

Keywords: Drug, Intraction

P68

Investigation of Isolated Low HDL and High LDL Levels in Subjects with Normal Triglyceride & Cholesterol Levels in Bushehr Province, Iran

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Background: Coronary heart disease(CHD) is related to dyslipidemia, abnormal total cholesterol, triglyceride, HDL and LDL levels. Isolated low HDL and isolated high LDL are defined dyslipidemia with normal serum level of TG and cholesterol. Recent studies showed relationship between cardiovascular complication and low and High HDL, LDL respectively. This study was done to assess prevalence of these two parameters in subjects of Bushehr province. Methods and materials: This cross-sectional study was done on 456 subjects (158 male and 298 female). Blood samples were obtained, and then serum was separated and preserved until performance of test. HDL and LDL were evaluated by Biotech kit and auto-analyzer system. Data were analyzed by prism-Demo program. Results: our data showed that 14.2% of subjects were isolated high LDL (about 24.6% male and 8.7% female). 43.4% patients were also Low isolated HDL (about 37.7% male and 46.6% female). Low isolated HDL data showed significant differences between male and female. Conclusion: This is the first study to examine the prevalence of isolated low HDL and high LDL dyslipidemia in Bushehr, which demonstrates the high prevalence of the two mentioned dyslipidemia. Therefore it seems necessary to treat an isolated low HDL.

Keywords: Dyslipidemia, Isolated Low HDL, Isolated High LDL, Cardiovascular Disease

P69

Comparison of Manual Elisa Method and Autodelfia System for the Measurement of TSH in DBS Newborns Samples

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Introduction: Congenital hypothyroidism is the most common cause of preventable mental retardation in newborns. The incidence of CH in the world, one in every 3000- 4000 live births and in studies conducted in iran this ratio is 1 in 1000 live births. When Retardation appears treatment is useless. But on the third to fifth of birthday This disease has been detected easily with a sampling of the heel and perform a simple test (as the Newborn screening for congenital hypothyroidism, is running in our country) .Considering the importance of accurate measurement of TSH, requires different methods for measuring these parameters are consistent with each other. So In this study, two measuring methods of TSH were compared . Methods: total of 85 neonatal DBS samples were evaluated . TSH levels of Samples were measured by ELISA Kit and Autodelfia System. Results: TSH concentration range of samples in Elisa Kit was 0.1 to 14.2 and in Autodelfia System was 0.1 to 17.4. The mean concentration in Elisa kit is 1.502 . The mean concentration in Autodelfia System 1.842. Statistical comparison of results was performed by SPSS software and The results indicate a high correlation between samples is evaluated.
$r = 0.949$
$r^2 = 0.900$
$Y = 0.781\ X + 0.846$
Confidence interval = 95%
According to the analysis results (P= 0.6296), Difference in HbA1c levels in whole blood and DBS samples were not significant. Conclusions: Correlation studies show that These two methods are consistent with each other and Reference interval of two methods is the same so It is available in laboratoriesThat Manual ELISA Kit replace the Autodelfia system. According to the great importance of TSH Neonatal testing in the prognosis of various complications of Hypothyroidism, It is necessary to consider other methods of measurement.

Keywords: Hypothyroidism, Neonatal Screening, TSH, DBS

P70

Cdse Effects of Endocrine-Disrupting Chemicals in Adult Male Mice

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Objective: Quantum dots (QDs), tiny light-emitting particles on the nanometer scale, are emerging as a new class of fluorescent probes for cancer cell imaging and molecular profiling. but there is little information about their toxicity especially in vivo toxicity. Studies about this subject are the most important investigations for using these nanoparticles in medical applications. Materials: Mentioned quantum dots were injected in 10, 20, and 40 mg/kg doses to some male mice, 10 Days after CdSe, the blood and serum /sample of rats for biochemical analyze of AST and ALT provided. Results: Mean concentration of AST showed a statistically significant increase in 20 and 40 mg/kg dose ($p<0.001$). But ALT hormone didn't show any difference with control group. Conclusion: Based on results obtained it can be said that quantum dots are capable of inducing Disruptors/adverse effects on the endocrine system of male mice and Mice as models of quantum dots-induced endocrine disruption. Considering lack of any previous study in this category, our study can be an introduction to more studies about effects of quantum dots toxicity on development of male sexual system.

Keywords: AST, CdSe, Endocrine

P71

Effect of Danazol on Liver Function Tests (LFT), and Histological Effects in Adult Female Rats

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Aim: The metabolism of many drugs and toxins in the liver is done, During the metabolism of these substances , many of them can cause liver toxicity, Therefore knowing the drugs that cause liver injury will be important. In this study the effect of danazol medication commonly used for the treatment of various diseases by people has been investigated on the liver of female Wistar rat. This study was conducted to evaluate the toxicity of this drug on rat liver. Method: In this practical study, 50 female Wistar rats divided into 5 groups of 10 rats given doses of the experimental group 1, 2 and 3, the values mg / kg 400,200,100 Drug received. The control group received nothing the sham group that received solvent(1/6H2O+0/4 ethanol). The drugs were given to adult female rats mouth for 28 days. After the 28 day period, all animals were weighed. They were killed by ether anesthesia, after opening their abdomen, the liver was removed and weighed, Typical histopathological slides and stained with H & E method was used. The were samples for tests of liver enzymes ALT, AST, ALP, albumin and protein changes. Results: Comparison test results show that among the experimental groups received different doses of the drug and control groups, a significant increase in the liver enzymes ALT, AST, ALP was shown. The results suggest that changes in protein and albumin and liver weight and the weight of adult female mice in the experimental group than in the control group receiving the drug are not significant. ($P<0.05$) necrosis was seen in the liver of experimental groups Conclusion: The toxic effects of danazol It is also used with devastating effects on the liver tissue And its use should be made with caution.

Keywords: Danazol, Female Rats, Tissue Liver, Liver Enzymes

P72

Is There Augmented Relationship between Urine Culture and Urine Analysis Parameters; WBC, Nitrite, Bacteria, Separately?

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Background: Urinary tract infection (UTI) is one of the most common infections diagnosed in the clinical laboratories. UTI is the mostly seen bacterial infection in young women and in the elderly. The most frequently determined microorganisms in UTI is E.coli. Although medical history and symptoms are sufficient for diagnosis, culture should be made for precise diagnosis and bacterial identification. In urine analysis WBC and bacteria are 2 indexes for UTI. The aim of this study was to identify correlation between urine analysis parameters and urine culture. Method and Materials: 970 sterile urine samples were examined randomly. After urine culture in blood agar and EMB, Dipstick urinalysis was performed and microscopic analysis for WBC and bacteria. Statistical analysis was performed by SPSS, version.15 software. Results: there was relationship between positive culture and bacteria count of microscopic urine analysis. In the other hands, 15% of positive culture had negative bacteria and 52.5% of positive culture had many bacteria in microscopic observation. Moreover there was relationship between WBC count in microscopic urine analysis and positive culture.90% of sample with negative nitrite had positive culture. Discussion: in urine analysis, nitrite+, WBC count >10 and bacteria are not predictor of positive culture separately. Also there is not linear association between these 3 parameters and culture. It is better to evaluate these 3 parameters in compound together.

Keywords: WBC, Urine Analysis, Nitrite, UTI

P73

Sustained Zolpidem Tartrate Release Using HPMC: A Novel Drug Delivery Approach to Increase Gastric Retention Time

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Background: Zolpidem tartrate is a non-benzodiazepine, sedative-hypnotic, which finds its major use in various types of insomnia. The present work relates to development of floating drug delivery system to prolong the gastric residence time and to increase the overall bioavailability. The gastroretentive drug delivery systems can be retained in the stomach due to low bulk density. This assist in improving the oral sustained delivery of drugs that have an absorption window in a particular region of the gastrointestinal tract. These systems release the drug content before reaching the absorption site and provide optimal bioavailability. Several approaches are currently utilized to prolong gastric retention time. These include floating systems, polymeric bioadhesive, and swelling and expanding systems. The objective of this study was to develop and characterize gastroretentive floating matrix tablets from Zolpidem tartrate. Materials and methods Zolpidem tartrate floating matrix tablets, containing HPMC 4000 and gas-generating agent were prepared using direct compression method. The in vitro floating characteristics of these tablets were explored in Hcl 0.01 (N) Results: The release rate decreased when the amount of polymer increased. The drug release also increased in the presence of gas-generating agent. Interestingly, adding gas generating agent to the formulations modified the floating properties of matrices. Conclusion These results proved the effect of HPMC4000 cps and floating agents on drug release profile. The use of HPMC 4000 and gas-generating agents can lead to suitable floating formulation of Zolpidem tartrate.

Keywords: Zolpidem Tartrate, Gastroretentive, Sustained Drug Delivery

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P74

Determination of PON1 Gene Polymorphisms in Iranian Individuals with High LDL/HDL Ratios

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Objective(s): Elevated LDL/HDL ratio is an important risk factor for predicting atherosclerosis. Paraoxonase-1 (PON1), an enzyme related to HDL, protects LDLs from oxidative modifications and has a protective effect against atherosclerosis. Two common polymorphisms, Q192R and L55M, in PON1 gene can affect PON1 levels and function. The aim of this study was to evaluate the frequency PON1 polymorphisms in individuals with high and normal LDL/HDL ratios. Materials and Methods: To evaluate Q192R and L55M polymorphisms in Iranian case group (n=70) with high LDL/HDL ratio, and control group (n=80) with normal LDL/HDL ratio, we used PCR-RFLP method. In addition, lipid profile includes HDL-C and LDL-C was determined by immunoturbidimetric method. Results and Discussion: Genotype frequencies for Q192R were 52.2%for QQ, 46.3% for QR, and 1.5% for RR in case group (P=0.003). However, Genotype frequencies in case group for L55M were 17.5% LL, 75.3% LM, and 7.2% MM (P=0.001). PON1L55M polymorphism was associated with high LDL/HDL ratios in case group. So, the L55M polymorphisms can contribute in reducing the antioxidant function and decreasing level of HDL particles. In conclusion, PON1 L55M polymorphism can affect lipid metabolism and may be related to atherosclerosis in Iranian individuals.

Keywords: Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL), Paraoxonase-1 (PON1), Polymorphism, Polymerase Chain Reaction- Restriction Fragment Length Polymorphism (PCR-RFLP)

P75

Evaluation of Expression Pattern of HE4 and COX2 Genes in Breast Cancer

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Introduction: Nowadays breast cancer is the most common solid tumor and the second cause of death related to the cancer among women population. In this research, over expression of HE4, recently considered as ovary tumor marker, accompanied by expression pattern of COX2 and finally the correlation between the expression of these two genes and other clinical factors in women with breast cancer were investigated. Material & Method: Of total 33 women with breast cancer referred from Namazi hospital (Shiraz province), the tumor and their adjacent normal tissues were obtained by pathologist. Clinical histopathology diagnosis elements like age, tumor size, tumor type and its grade were collected. The immunohistochemistry (IHC) analysis of HER2 protein and the receptor of estrogen & progesterone were done. Real-time PCR technique determined the HE4 & COX2 expression pattern. Results: This study demonstrated that a total of 13 of 33 cases (39.3%) were over expression of HE4 and a total of 15 of 33 cases (45.5%) were over expression of COX2. No correlation between HE4 and clinic pathological or IHC factors was detected, however; there was a significant correlation between COX2 expression and IHC and clinic pathological factors were found. No correlation between HE4 and COX2 expression was found by RT-PCR. (P>0.05) Discussion: According to the above information, although there was over expression of HE4 in cancer tissues of some patients, it cannot be a suitable marker for screening and detection of breast cancer at the early phase based on statistics. (P>0.05) On the other hand, over expression of COX2 can be considered as a good marker of detection in cases affected breast cancer.

Keywords: Breast Cancer, Tumor, HE4 Gene, COX2 Gene

P76

Study the Necessity of G6PD Screening Test in Infants 3 – 5 Days

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G6PD deficiency is the most common red cell enzymopathy estimated to affect 400 million people worldwide. A recent systematic review showed a global prevalence of 4.9% for G6PD deficiency. There is significant association of G6PD deficiency with neonatal hyperbilirubinemia in the immediate prenatal period. Though rare, significant hyperbilirubinemia poses a potential threat for permanent neurological deficit or kernicterus. Studies indicate that insufficient hepatic metabolism of unconjugated bilirubin rather than increased haemolysis is the major contributor to neonatal hyperbilirubinemia. G6PD-deficient patient lacks the ability to protect RBC against oxidative stress from certain drugs, metabolic condition, infections. G6PD deficient person are unable to scavenge free radicals, resulting in haemolysis especially that underwent cardiac surgery and are need anesthesia medication management. However, few reports have investigated the relationship between G6PD variants and the severity of neonatal hyperbilirubinemia, while others focused only on identification of G6PD variants in icteric infants. National literature review indicated a higher prevalence [4 to 14%] of G6PD deficiency in jaundiced neonates. Unfortunately up to 22% suffered from acute bilirubin encephalopathy and their mortality was as high as 4%. Also, confounders were observed in some percent G6PD deficient infants, including sepsis, prematurity and Rh incompatibility. Despite extensive study of G6PD deficiency in neonates, there has been no national interest in molecular characterization of G6PD gene. Occasionally, cases of G6PD deficiency are missed by optional newborn screening. The panel acknowledges that many areas of G6PD deficient research are still inadequately explored even more than few years after newborn screening began. Thus, a compulsory G6PD test should be necessary performed in newborn screening. Also, a multidisciplinary approach to lifelong care of G6PD is required. If the child needs additional testing or diagnostic evaluation, make certain the parents understand the importance of following the pediatrician's and/or the specialist's recommendations for additional testing and referrals.

Keywords: G6PD Deficiency, Néonatal Screening, Jaundice

P77

Studying Ratio of Diabetes Influence on other Diseases

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Diabetes is known from long ago, and it is considered as a most common metabolic disease. Side-effects of the disease may lead to physical disorder and pre-mature death of the patients. Objective of this research is determining relation of diabetes with other diseases and its influence on creation of other diseases as its pre or post-mature side-effects. For this purpose, samples were taken from among 100 patients suffering from diabetes who have referred to medical centers of Alborz province within winter 2013 - spring 2014. Then an individual questionnaire was filled by each of the testee. Finally the results were analyzed through Chi-Square & SPSS software. The result $p<0.05$ indicates significance of the differences. Among 100 patients suffering from diabetes, 61 were women and 39 were men and average age of the women was 53.7 and men 60.51. Also average illness period (regardless of the gender) was 8.26 years. As the results show there is a significant relation between kidney diseases and cardiovascular diseases and diabetes. Concerning that the diseases is common within all strata of the community and regarding significant relation between the disease and mentioned illnesses, periodic diabetes tests are reconnected for controlling it. Also testing blood glucose level of the first grade relatives is important, since there is a significant relation between the disease and genetics. According to the results community health planners and medical society should pay more attention to the issue.

Keywords: Diabetes, Side-Effects of Diabetes, Vascular Endothelia, Cardio Disease, Kidney Diseases and Eye Disease

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P78

Expression Profile of CYP24A1 in Normal and Malignant Breast Tissue

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Introduction About 1 million new cases of breast cancer diagnosed annually in the world. There are different risk factors caused the development of breast cancer like environmental, genetic and dietary factors. One of the dietary factors to reduce the breast cancer is an adequate vitamin D intake. In addition to regulating calcium and phosphorus homeostasis, the active form of vitamin D, 1,25-dihydroxy vitamin D3, has antiproliferative and apoptotic effects that mediated by vitamin D receptor (VDR). Also, anabolic and catabolic enzymes of vitamin D metabolic pathway play the important role in regulating the function of vitamin D. CYP24A1encodes Vitamin D 24-hydroxylase metabolize Vitamin D to produce calcitroic acid. The aim of this study was the investigation of mRNA expression of CYP24A1 to assess a profile of vitamin D catabolic process and local access of cells to this vitamin in breast cancer. Material and Method In this study, we collected thirty tumoral and normal breast tissues from patients in Imam Khomeini hospital. Total RNA was extracted from tissues, then after cDNA synthsis, mRNA expression of CYP24A1 gene was detected by Real-Time PCR. Results Real-Time PCR analysis showed CYP24A1 gene expression was significantly increased in tumoral tissues in comparison with normal breast tissues. Discussion There are the alterations in vitamin D signaling pathway in Breast Cancer. Upregulation of vitamin D catabolizing enzyme (CYP24A1) might play an important role in involvement of breast cancer tumorigenesis. Also, the combination of vitamin D with inhibitors of CYP24A1 may be useful for prevention and treatment of Breast Cancer.

Keywords: Vitamin D Receptor, Breast Cancer, CYP24A1

P79

Anticancer Effects of Extracts of Endemic Sesame Different Varieties in Iran

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Background and Objectives: In the recent years, several plants were studied in the treatment of cancer and anti-cancer effects of most of these plants have been demonstrated, including flavonoids, carotenoids, various vitamins, alkaloids, terpenes, and Lygnans in different plants had most cell cytotoxic effect in nature. Approximately sixty four percent of anticancer drugs obtained from natural sources, which some anticancer drugs can be obtained only from plant sources. Method: Three varieties of sesame (Darab, Oltan and non-branching Naz) were collected from different parts of the country. After separation of the oil using n-Hexane, the residue were incubated for 48 h in pure methanol and then extracted. After that solvent evaporation was done by rotary, and drying in freeze dryer machine. Finally the extract was collected. In order to assessment the potential of cytotoxic effect, extracts in different concentration(2000-31.25 µg/ml) were cultured for 24 and 48 hin RPMI media andwereIn thevicinity ofMCF7breastcancercellsthencancer cells viabilityevaluatedwithMTT assay. Findings: In the previous studies, different varieties ofsesamehaveanti-cancerpropertiesbutamongthese cultivarsnon-branching Naz in 48 h had morecytotoxic effectwithIC50 = 125 µg/ml. In this study the extracts cytotoxic effects withincreasingin each of two parameters, doseandtime, show significant increase. Conclusion: According to the results, different varieties sesame extract reduced the breastcancersurvivalatdifferent concentrations. These cytotoxic effects are time and dose dependent. Based on thefindings ofthisstudysuggest thattheplant extractsthat are affecting incancerin IN VITROcondition should havemuch useasdietary supplementsorpreservativesin thefood industryandagriculture.

Keywords: Cytotoxic, MTT Assay, Sesame

P80

Radioprotective Effect of Vitamin C on Liver Lipid Peroxidase and Glutathione Level in NMRI Mice

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Background: Nowadays, the use of radioactive substances and ionizing radiation such as gamma and X ray significantly expanded. ionizing radiation penetrates into biological tissues, produces the free radical and these radicals damages the macromolecules such as DNA, protein and lipid membrane. Free radicals are the most causes of oxidative stress and could react with biomolecules and initiating lipid peroxidation in membrane.lipid peroxidation is one of the most important factors of damage of membrane from irradiation.final result of oxidative stress is produces of harmful aldehyde substances such as malondialdehyde. vitamin C is an antioxidant molecule and prevents lipid peroxidation in plasma and inside the cell and could mitigate cytotoxic effects of gamma ray on mouse liver. In this study, three doses of Vitamin C (50,100,200 mg.kg-1) were tested with gavage method along 2,4 gray of gamma ray. Materials and methods: doses of the tested drugs have been feeded to mice, three days before exposure,every 12 hour and 2-3 hour before irradiation to NMRI mices based on mg.kg-1 for body weight.then the liver got out.and the lipid peroxidase was measured by spectrophotometer method,and the glutathione was measured by HPLC method. Results: The results showed that vitamin C decreased the lipid peroxidation and increased the reduced glutathione level in doses 2,4 gray Conclusion: vitamin C neutralize the harmful oxidizing radicals,such as hydroxyl radical,by donating of electron to them.so it prevents the oxidizing critical molecules and lipids and also oxidative stress in body.

Keywords: Radioprotector, Gamma Irradiation, Vitamin C, Lipid Peroxidase, Glutathione

P81

Radioprotective Effect of the Combination of Vitamin C, Cimetidine, Famotidine on Liver Lipid Peroxidase and Glutathione Level in NMRI Mice

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Background: Indirect ionizing radiations, such as gamma and X ray, don't creat a chemical damage, but with transfering energy to biological tissues and produces free radical, damages to DNA and lipid membrane. Lipid membrane is so sensitive to lipid peroxidation and the damage of it leads to destraction of functional and cell life. final result of lipid peroxidation is produces a malondialdehyde.it is an indicator for measurement of lipid peroxidase enzyme.some of radioprotector compounds are anti oxidants(vitamin C),combinations(famotidine,cimetidine)and enzymes.tripeptide glutathione is one of the most abundant intracellular nonprotein thiol and protect the cell against the damage of free radicals. In this study, three druges of Famotidine (1/5 mg.kg-1), Cimetidine (15mg.kg-1), Vitamin C (100mg.kg-1) as double and triplex combination were tested with gavage method along 2,4 gray of gamma rays. Materials and method: doses of the tested drugs have been feeded to mice, three days before exposure, every 12 hour and 2-3 hour before irradiation to NMRI mices based on mg.kg-1 for body weight.then the liver got out and the lipid peroxidase was measured by spectrophotometer method,and the glutathione was measured by HPLC method. Results: The results showed that the combination of cimetidine and vitamin C was better than two others combination, and it decreased the lipid peroxidase and increased the glutathione level in doses 2,4 gray. Also the combination of three drugs had the best radiation protection properties. Conclusion: Radioprotective effect of famotidine and cimetidine is attributed to the presence of sulfur in their structure.vitamin C is also a potent antioxidant compound.

Keywords: Radioprotector, Gamma Irradiation, Famotidine, Cimetidine, Vitamin C, Lipid Peroxidase, Glutathione

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P82

Preparation and Effect of Nanoliposomal form of Lyophilized Ecballium Elaterium Seed Extract on Gastric Cancer Cell Line (AGS)

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Background and objectives: the main goals of any thrapy are increasing thrapyotic index of the drug and decrease its side effects. Liposomes due to having two layers of phospholipids are effective in increasing the efficiency of drugs. Ecballium elaterium (EE) is a wild medicinal plant which its anti cancer and toxicity effects has been demonstrated. The aim of this study was prepare nanoliposomal form of EE seed extract and to compare its cytotoxicity with EE aqueous extract on human Gastric adenocarsinoma (AGS) cell line Material & Methods: nanoliposomes containing lyophilized aqueous extract of the Ecballium Elaterium were prepared using ultrasonic methods. Antitoxidant levels of crude extract and nanoliposomes form of nanoliposomed form of EE extract for 24 hours. Cytotoxicity of the crude extract and EE extract encapsulated with the nanoliposom on AGS cells was examined by MTT. Neutral red and Frame assays and IC50 was determinedResults: The IC50values for the crude extract using MTT. Neutral red and frame assays were 0.98, 1.08 and 0.38 µg/ml, respectively Conclusion: The results showed that the crude extract and nanoliposomal form extract of E. elaterium have cytotoxic effect on AGS cells line and AGS cells were significantly more susceptible to E. elaterium encapsulated with nanoliposome compared with the crude extract.

Keywords: Ecballium Elaterium, Nanoliposomes, AGS Cell Line

P83

The Study of Nitricoxide Histopathologic Effects on Splenic Tissue in Male Rats

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Background and goal: Nitrite and nitrate are common additives in meat processed products. In spite of all technological advantages of nitrite, creation of nitrosamine carcinogenic substances causes a lot of concerns for use of these additives. In this study, the histopathologhcal effects of sodium nitrite on the splenic tissue in adult female rats were performed. Material and method: In recent studies, 30 adult male rats strain Vistar, divided in 3 groups of 10. They were examined for 60 day, and they were divided in 175 mg/kg/day dose recipient group, 350 mg/kg/day dose recipient group and control group which was absorbed nitrite through drinking water. At the end of day 60, the spleen was taking out of body, and then tissue sections were prepared for testing tissue changes. The samples were stained with Hematoxilin Eozin method. In both sex factors like morphometric and morphologic from arteries, body weight changes before and after test and blood NOx level was checked. And at end, obtained results were analyzed through spss 17 software. Result: The results showed that consume of sodium nitrite, cause background inflammation type of Mononuclear in both sexes, especially around the pulp. Also, in both sex NOx levels in the blood of animals in the group receiving 350 mg kg and group receiving 175 mg of sodium nitrite per kg compared with the control group, significantly increased in level of $p \leq 05/0$. Conclusion: Considering of this study existence of nitrite in foods, can affect the spleen tissue in consumers and nitrite can be considered as a threatening factor in this organ.

Keywords: Sodiom Nitrite, Spleen, Inflammation, Nitric Oxide

P84

Prevalence of Gestational Diabetes in Pregnant Women, Patients in Birjand Health Center During the Second Quarter, 93

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Introduction and Objective: In accordance with the guidelines of the country, the World Health Organization Vkargrvh of pregnancy International Association of Diabetes IADPSG in 2013 to test a stage GTT hour with 75 g glucose officially for screening, diagnosis of gestational diabetes recommended .lza for all pregnant women to non-diabetics, the natural Vprh Diabetic this testing should be performed at 24 and 28 weeks gestat Methods: In this study of 334 pregnant women in the second trimester, 93 laboratories Birjand health center referred to gestational age between 24 and 28 weeks, respectively. First on all of FBS was then 75 g Glvkzkhvraky Dextrose Co. of whom Shdvsps a Vdvsat after taking glucose blood sugar content was measured by autoanalyzer according QC A15 in medical faculties interpreted their results.

Keywords: Diabet, Oralgulokos, GTT, Perediabetic

P85

Assessing the Effect of Fasting on the Influential Factors of the Coronary Artery Diseases: Evidences from Clinical Network in Bahar City

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Introduction and Objectives: As many studies argue, non-communicable diseases are increasingly recognized as serious, worldwide public health concern. In particular, Coronary artery diseases are known as the leading cause of mortality and morbidity in Iran. The purpose of this sturdy is to assess the effect of Islamic fasting on the influential factors that contribute to Coronary artery diseases. This paper tries to shed light on the effect of fasting on some of the main causes of Coronary artery diseases. Methodology: This cross sectional research is treated on 170 healthy volunteers who have fasted at least 20 out of 30 days of Ramadan, that detected HDl, LDL, Cholesterol and Triglyceride in before and after that month. Results: The results suggest that fasting is related with 6.3% and 3.9% decline in triglyceride and cholesterol respectively. Moreover, it accounts for 6.1% decline in LDL as well. However, no significant reduction in HDL was found in our evidences. Conclusion: We provide evidences that fasting has an overall significant effect on the main causes of Coronary artery diseases. These results suggest conducting more researches to shed light on different aspect of such causality.

Keywords: Coronary Diseases, Fasting, HDl, LDL, Cholesterol, Triglyceride

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P86

Evaluation of Serum Levels of Magnesium and Gama-Glutamyl Transferase in Gestational Diabetes

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Introduction and aim: In gestational diabetes, decreased serum levels of magnesium may be associated with insulin resistance. Increased gamma-glutamyl transferase (GGT) may be useful as a sensitive and early marker in prediction of diabetic or pre-diabetic conditions. Methods: In this cross sectional study, from the pregnant women that refer to Imam Ali Hospital Laboratory in Andimesh city in 1392, at 24-28 weeks of gestation, after done of glucose tolerance test (GTT) and diagnosis of their diabetics or non-diabetics and obtaining informed consent, 145 individual from each group were enrolled to the study. After 10-12 hours of fasting and preparation of venous blood, serum samples in less than 2 hours away by centrifugation at ×1500 for 10 minutes, remove and until full collection of samples were kept at -20 °. The experiments were performed with Pars azmun company kits. Results: The mean serum levels of magnesium and GGT in diabetic and non diabetic pregnants in order 1.75±0.25 and 26.4±9.8 Vs. 1.29±0.28 ($p<0.001$) and 18.6±6.3 ($p<0.001$), that this difference was statistically significant. Conclusion: Decreased serum levels ofthe magnesium and increase the GTT is probably involved in the development of gestational diabetes. Measurements of these parameters can be important in the prevention and early recognition of gestational diabetes and improve maternal health during pregnancy time.

Keywords: Magnesium, Gama-Glutamyl Transferase, Gestational Diabetes, Third Trimester

P87

Green Tea Supplementation for Safer Life for Women

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Background: Osteoporosis and hyper lipidemi are both important diseases predominantly in women aged over 47 years and postmenopausal women. Green tea has been shown to be beneficial on human health. This study examined the efficacy of Green tea on serum Calcium, 25 OH vitamin D3, Total Cholesterol, HDL Cholesterol, LDL Cholesterol and Triglyceride levels in women aged over 47 years postmenopausal women. METHODS: A 2-month randomized and placebo-controlled clinical trial was conducted in 30 women aged over 47 years and postmenopausal women with, who were lived in Tehran. These participants were treated with placebo, Green tea (200 ml two times daily). Their blood samples were collected at the baseline, and 2-months during intervention for assessing levels of serum Calcium, 25 OH vitamin D3, Total Cholesterol, HDL Cholesterol, LDL Cholesterol and Triglyceride. Results: The elevated concentrations of serum Calcium and 25 OH vitamin D3 demonstrated a good adherence for the trial. A significant reduction of serum concentrations was found in treated group during 2-month ($P<0.001$) intervention, as compared to the placebo group. CONCLUSION: Our study demonstrated that Green tea interventions were effective strategies of reducing the levels of Total Cholesterol, HDL Cholesterol, LDL Cholesterol and Triglyceride, a putative mechanism for heart diseases in women aged over 47 years and postmenopausal women, and more importantly, working in an additive manner, which holds the potential as alternative tools to improve health in this population.

Keywords: Green Tea, Postmenopausal Women, Heart Diseases

P88

Evaluation of the Performance of TSH Hormone in Pregnant Women Refer to Zanjan Hospitals in 1391-1393

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Background and Aim: Thyroid gland problems during pregnancy are common in women and may have bad effects on embryo. This study will determine the performance of the level of thyroid hormone as one of the hazardous factors in pregnant women. Methods: This study has been done on 70 pregnant women without previous history based on clinical trial that had referred to the Zanjan hospitals since 1391-1393. After isolation of their blood serum, the level of TSH hormone (Thyroid stimulating hormone) was evaluated based on ELIZA and analyzed by T test and SPSS software. Results: Normal level of TSH hormone has been 0.39 -5.95 by this procedure. In this study the minimum and maximum level of hormone were 1.2 and 3.0, respectively. The average level of TSH hormone in pregnant women was 1.24. In this study 84% of samples were healthy and about 16% had disorders. Of that 16%, 9% had hyperthyroidism and 5% hypothyroidism. Conclusion: The results show that there were no significant differences in TSH hormone in pregnant women. But as a result of low number of studied persons, we need to more extended studies.

Keywords: Thyroid Stimulating Hormone, Pregnancy, Zanjan

P89

What about you for Prevention of Error Lab in Metabolic Diseases as P.K.U. & Hypothyroidism? Rechek Rapidly? Or Only Holding Samples in Deep Freezer?!

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Background: In creased concentration of plasma amino acids and specially their urinary excretion rates are of considerable medical importance.Particularly in new borns (neonats) &childeren.more than fifty hereditary syndromes of aminoacids metabolism have now been described.Mostof which P.K.U. & hypothyroidism have an outosomal recessive mode of heritance. In our country check two tests of above .Hypothyroidism results from lack of thyroid hormone action on tissues signs include cold sensivity, dry skin,…. But in adults cretinism is the term employed for functional period.InP.K.U. (phenyl ketone uria) is the result of the herriteddificency or absente of phenylanine hydroxylase which is necessary for metabolic of it .P.K.U. can be several types of syndroms occur varing in severity but unfortunatly mental retardation clinical findings has shown good. Method:The aim of this description study is recheck the sample is more important than holding in freezer…; Results&conclution: cretinism is the term employed due to functional period in Hypothiroidism&also mental retardation due to P.K.U.Soletsreckek them as quickly as passible even random by refrencelab in provinces .holding in freeze without rechek is not Useful. P.K.U.

Keywords: P.K.U., Hypothiroidism, Mental Retardation, Rechek

P90

The Prevalence of Glucose-6-Phosphatase Dehydrogenase Deficiency in Infants Referred to the Health Center of Qir and Karzin

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Introduction and objectives: Glucose-6-phosphate dehydrogenase (G6PD) is the first enzyme in the pentose phosphate pathway, which played an important role in the production of NADPH. G6PD deficiency is a genetic disorder and assessment of newborn for presence or absence of this defects is one of the effective components in evaluation of public health in different countries. The purpose of this study was to determine the prevalence of G6PD deficiency in neonates who were born in Qir and Karzin city during March 2012 to March 2014 and its relation with gender newborns. Methods: A cross-sectional study has been done on 2403 newborns that referred to the Health Center in Qir and Karzin city for screening tests during March 2012 to March 2014. Evaluation of enzyme was performed with method of fluorescent spot test by using of Kimia Pajohan. Results: Of the 2,403 babies were examined 394 (16.4%) cases were diagnosed as G6PD deficiency that of them 175 (28.7%) infants were boys and 219 (8.8%) infants were female. Conclusion: The prevalence of G6PD deficiency in Qir and Karzin, one of the country's in southern regions of Iran, is high. The symptoms of G6PD deficiency can be reduced with screening and early detection and education to families of children. However, unlike other studies, the prevalence of the disease in the infant girls was 1.25 times higher than the infant boys that need further studies in this field.

Keywords: G6PD Deficiency, Neonatal Screening, Qir and Karzin

P91

Determination of Serum Zinc and Copper in Iranian Patients with Multiple Sclerosis

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Multiple sclerosis (MS) is one of the common diseases of the central nervous system characterized by demyelination in the brain and spinal cord. Findings from contradictory reports regarding the amount of trace elements in biological fluids of the patients, and their correlation with disease etiology, the purpose of this study was to determine serum levels of zinc and copper in Iranian patients with multiple sclerosis. Thirty-three patients (8 males, 25 females) with MS and 43 healthy sex-matched and age-matched control participants were assessed for serum Zn and Cu content by atomic absorption spectrophotometry. The results were analyzed using Generalized Linear Model (GLM) and Analysis of Covariance (ANCOVA). The results showed that while serum copper of the patients increased significantly compared to the healthy group ($p<0.01$), the serum zinc levels were lower significantly ($p<0.01$). According to the results of pairwise comparisons in the analysis of covariance of the mean difference between zinc and copper in men and women, was not significant. Increased serum levels of copper could be related to the copper-containing enzyme such as cytochrome oxidase and the low serum zinc levels lead to poor superoxide dismutase and high levels of superoxide. Therefore it is probable that alterations in essential trace elements Cu and Zn may play a role in the pathogenesis of multiple sclerosis.

Keywords: Copper, Multiple Sclerosis, Zinc

P92

Determination of Serum Zinc and Copper in Iranian Patients with Schizophrenia

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Schizophrenia is a central nervous system disorder that is associated with abnormal social behavior and poor emotional responsiveness. Findings from contradictory reports regarding the amount of trace elements in biological fluids of the patients and their correlation with disease etiology, the purpose of this study was to determine serum levels of zinc and copper in Iranian patients with schizophrenia. Thirty-four patients (21 males, 13 females) with schizophrenia and 43 healthy sex-matched and age-matched control participants were assessed for serum Zn and Cu content by atomic absorption spectrophotometry. The results were analyzed using Generalized Linear Model (GLM) and Analysis of Covariance (ANCOVA). The results showed that serum copper and zinc of the patients increased significantly compared to the healthy group ($p<0.01$). According to the results of pairwise comparisons in the analysis of covariance of the mean difference between zinc and copper in men and women was not significant. Increased serum levels of copper could be related to the copper-containing enzyme such as cytochrome oxidase. Therefore, it is probable that alterations in essential trace elements Cu, and Zn may play a role in the pathogenesis of central nervous system disorders such as schizophrenia.

Keywords: Copper, Schizophrenia, Zinc

P93

Evaluation of DISC1 Rs3738401 Polymorphism in Iranian Patients Affected by Alzheimer and Normal Individuals

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Introduction: Alzheimer's disease is definitely an irreversible, progressive brain illness that slowly destroys memory and thinking ability and eventually even the capacity to carry out the simplest tasks. Generally in most people who have Alzheimer's, symptoms first come into view after age 65. Estimates differ, but specialists claim that up to 5 million Americans age 65 and older might have Alzheimer's disorder. Alzheimer's disorder is the most frequent cause of dementia between adult people. Dementia is the increasing loss of cognitive functioning-thinking, remembering, and reasoning-and behavioral abilities, to this kind of extent that it inhibits a person's everyday life and activities. In this study, the evaluation of the DISC1 rs3738401 polymorphism in Iranian patients affected by Alzheimer and individuals was investigated. Methods: In the present case-control study, the polymorphism of DISC1 rs3738401 has been investigated in 60 Alzheimer patients and 100 healthy subjects by using ARMS-PCR method. Then, the data were evaluated by SPSS software. Results & Conclusion: In summary, the end result of present study shows considerable relation between DISC1 rs3738401 polymorphism in Iranian patients affected by Alzheimer and individuals. It could be a significant genetic predisposition factor.

Keywords: Polymorphism, Alzheimer

P94

Evaluation of Vitamin D Deficiency Prevalence in Children

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Background: Vitamin D helps the body absorb calcium and phosphorus from the intestine and cause the application of these materials in building bones and teeth as rickets Shvd.kmbvd vitamin D, the curvature of the legs Rashynysm to be seen. Also during puberty to stop growth. Materials and methods In this cross-sectional study of 90 children under 15 years who were referred to the laboratory to determine anemia blood 2cc addition to CBC, 2cc to check vitamin D blood were taken. Diasours test kit and by Alayzarydr Stat fax machine was designed. Vitamin D levels less than ng / ml10 was considered as Defficient. Vitamin levels between -25 ng / ml10 was considered as Insufficient. Vitamin D levels above 25ng/ml were considered as normal. Findings: Of this amount, 45 percent were male and 55 percent female. Average vitamin D in boys 27.4 ± 6.2 ng / ml and the girls 18.4 ± 5.1 ng/ml is. 5% of boys and 29 percent of girls in the group were Defficient. 50% of boys and 49 percent of girls in the group were Insufficient. And the rest were normal. Conclusion: According to this matter that only 45 %of boys and 22% of girls had normal level of vit D with measuring of vit D and in time treatment can prevented complications vit D reduction.

Keywords: Vitamin D

P95

Studying of Congenital Hypothyroidism of Newborn in Qazvin State during Year 1392

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Foreword and goals: Thyroidal hormones are one of the most important hormones that held duties like metabolism, growth and maturation and also cholesterol, triglycerides and carbohydrate metabolism. No clinical diagnostic of congenital hypothyroidism in begging, Make it one of the dangerous disease and due to this all medical scientist in the world recommended that new born screening for this disorders. Method and materials, This study has been done from scentedbabies' samples to this center on blood card gather from their feet. Then, done by cooperators with Elisa machine (AWAKENESS) and biochemical kit for measuring TSH. Results: during year 1392 from 9392 babies. All cases were suspicious were 332 cases (%3.5) and real positive cases were 32 ones (%0.31). Discussion and conclusion, In this study %68 of babies were boy and %32 were girls, and the incidence of disease in boys was tow time of girls. In point of familial relationship between parents %22 of the have grade 3, %13 grade 4 and %65 without any kind of relationship. We didn't find any meaningful link between familial relationship and incidence of disease in babies. In the view of the living place %68 were urban and %32 was mural. In order to confirmed positive cases and importance of thyroidal hormones in growth and metabolism, Lack of this hormone has a lot of effects on growth organs of a baby. So, measuring of thyroidal hormones in first week of birth must be considered important as vaccination.

Keywords: Hypothyroidism, Elisa, Metabolism, TSH

P96

Lipid Lowering Effect of Garlic via LXR Alpha Expression in the Intestine of Hypercholesterolemic Mice

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Background: In this experiment we investigated the effect of garlic on serum lipid, glucose and liver X receptor α (LXRα) expression in intestine of mice. Methods: N-Mary mice were randomly divided into 3 groups (n = 8),1: received chow + 2% cholesterol + 0.5% cholic acid, 2: chow + 4% (w/w) garlic extract + 2% cholesterol + 0.5% cholic acid, and 3: normal diet. After one month of treatment, animals were anesthetized, blood was collected and small intestine was removed. Glucose was measured by a glucometer; other biochemical factors were measured by enzymatic methods. LXR expression was checked by RT-PCR and western blotting. Results: Compared with hypercholesterolemic animals, treatment with garlic extract significantly decreased total cholesterol, LDL-C, triglycerides, VLDL-C, atherogenic index, ALT and AST (all of them $P < 0.05$). Change in HDL-C levels was not significant in garlic-extract treated animals compared with hypercholesterolemic group. LXR protein and mRNA in the intestine were increased in garlic-extract treated group compared with chow group ($P < 0.05$), Conclusions: The present study showed that garlic extract increased LXRα expression in the in the intestine. These effects probably have an important role in reducing serum triglyceride and cholesterol.

Keywords: Cholesterol, Garlic, LDL-C, LXR

P97

Evaluation of Hepatoprotecive Effects of Ethanolic Extracts of Lycium Ruthenicum Murry Fruit Plant Against Carbon Tetra Chloride Induced Liver Damage in Rats

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Aims: The present study aims are evaluating the hepatoprotecive potential effect of ethanoic extract of fruits of Lycium ruthenicum murry plant in carbon tetra hydrochloride Induced hepatotoxicity in Rats. Methods: Hepatic injury was induced by oral administration of 1ml/kg body weight of carbon tetra hydrochloride in corn oil in male Rats. Rats were divided in into six Groups (1 to 6). Group 1 as healthy control and 2 as treatment gavaged with normal saline. Group's 3 to 5 gavaged with ethanoic extract at doses 100, 200 and 400 mg/kg body weight respectively for 7 days. Results: The level of serum aspartate amino transferase (AST) and alanine amino transferase (ALT), total protein were analyzed by auto analyzer prestige system using standard kit. The results showed that all doses of plant extract significantly decreased levels of AST, ALT in compared to control groups but the levels of total were changed. Conclusion: the ethanolic extract of fruits of Lycium ruthenicum murry plant can protect the liver against of liver damage induction materials.

Keywords: Carbon Tetra Hydrochloride, Rat, Lycium Ruthenicum Murry, Hepatotoxicity

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P98

Comparative Study of Serum Zinc and Copper in Iranian Patients with Multiple Sclerosis and Schizophrenia

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Multiple sclerosis and schizophrenia are central nervous system disorder that are associated with motor and behavioral disorders. Findings from contradictory reports regarding the amount of trace elements in biological fluids of the patients and their correlation with disease etiology, the purpose of this study was to determine serum levels of zinc and copper in Iranian patients with multiple sclerosis and schizophrenia. sixty-seven patients (29 males, 38 females) with multiple sclerosis or schizophrenia and 43 healthy sex-matched and age-matched control participants were assessed for serum Zn and Cu content by atomic absorption spectrophotometry. The results was analyzed using Generalized Linear Model (GLM) and Analysis of Covariance (ANCOVA). The results showed that while serum copper of the both patients increased significantly compared to the healthy group ($p<0.01$), serum Zn levels were lower and higher significantly ($p<0.01$) in patients with multiple sclerosis and schizophrenia respectively than control group. Zinc means difference between MS and schizophrenia groups was also significant ($p<0.01$), but Cu mean difference was not significant between the both patients. According to the results of pairwise comparisons in the analysis of covariance of the mean difference between zinc and copper in men and women was not significant. The level of serum zinc could be a marker of superoxide dismutase and superoxide status which their significant differences between the two diseases may reflect the state of oxidative stress in disease. Increase serum levels of copper in the both disorders could be related to the copper-containing enzyme such as cytochrome oxidase. Therefore, it is probable that alterations in essential trace elements Cu, and Zn may play a role in the pathogenesis of central nervous system disorders such as MS and schizophrenia.

Keywords: Copper, Multiple Sclerosis, Schizophrenia, Zinc

P99

Survey of Effect of Hydroalcoholic Extract of Cyperus Rotundus L. on Expression of Bcl-Xl Antiapoptotic Gene in Hippocampus Tissue of Rat Following Global Ischemic/Reperfusion

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Introduction Ischemia-reperfusion injury is the tissue damage caused when blood supply returns to the tissue after a period of ischemia or lack of oxygen. Ischemia-reperfusion brain injury initiates an inflammatory response involving the expression of adhesion molecules and cytokines. Material&Method 18 male Wistar rats (250-300 g body wt) were used in this study. The animals were divided into three groups of 6 rats each: I: Control group that was without ischemia-reperfusion, II: Ischemia-reperfusion group that was subjected to all surgical procedures, III: extract injection group that received Cyperus rotundus L after ischemia. Seventy two h after ischemia-reperfusion, the hippocampus was taken for studying the changes in bclxl gene expression. We used quantitative real-time PCR for the detection of bclxl gene expression in ischemia and extract groups and then compared them to normal samples. Result Our results showed that gene ration of0.6233 and 0.23 and 0.9933 for control and ischemia and ischemic extract groups,respectively. The results also showed the bclxl gene expression declined in ischemia group as compared to the extract group. we observed a significant difference in the bclxl gene expression between ischemia and extract groups. Conclusion These findings are consistent with anti-apoptotic properties of bclxl gene. Furthermore this method provides a powerful tool for the investigators to study brain ischemia and respond to the treatment extract with anti-apoptotic agents.

Keywords: Ischemia, Reperfusion, Apoptosis, Bclxl, Real-Time PCR

P100

Distinguishes of Abuse Drugs in Urine Samples of Abusers in Iran

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Fifty urine samples of abusers were examined for the presence of alkaloid substances in urine. In this study all abusers were male and their ages were Mean±SD:48.89±10.10 and filled questionnaire forms too. First all Fresh urine samples confirmed to morphine, codein, heroin, cannabis, methadone, tramadol, presence by strip brands and TLC methods. The limit of detection was a concentration of these drugs were 300ng/mL in urine samples.The quantities equal or above 300ng/ml alkaloids in abuser urines considered to positive results.Urine extracts were prepared with SPE (solid phase extraction) or LPE(liquid phase extraction) methods. All fifty urine samples were confirmed by two tests. All data analyzed with one way Anowa Turkey and $P<0.05$ was considered significant. The Pvalue of this study was $P=0.000$ before and after detoxification course. The results in Tabriz/Iran welfare organization was showed that approximately all of study populations had positive results by rapid tests,so all positive results were confirmed with TLC tests too. We conclude that between all drug analytical methods the cheapest and easiest tests of opioids and drugs in biological samples is strip test for rapid diagnosis and thin-layer chromatography (TLC) is appropriate confirmation method to drug abuse distinguishing.

Keywords: Abusers Urine Samples, Strip Test, Thin-Layer Chromatography (TLC), Abuses Drugs

P101

Calcium Assay for the Screening of Infants with Williams's Syndrome

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Background and Aim: In addition, a feature of congenital abnormalities such as peripheral pulmonary artery stenosis, dental and show themselves. Mode of inheritance of the disease in the following forms: 1) Are sporadic mutations that's Found in many cases. 2) Often is a rare autosomal dominant transmission of micro deletion syndrome accompanied by conflicts in the Horn Hiroshi Wolf. In connection with the failure of the elastin gene in the disease is caused by the displacement of chromosome 7q11.23. Due to the narrowing of the aorta. The first sign for Williams syndrome is a chromosomal deletion fine. Been deleted in the elastin gene (ELN) have also been reported. These connective tissues, causing symptoms such as: a) loose joints, b) premature aging of the skin, c) stretching joints, d) and a rough voice, e) are often hernia. Material and methods: This study was performed on 17 (10 male and 7 female) with suspected syndrome was in the Najmieh hospital. Serum calcium test on 17 sample by Cresophtalein Complex method was performed, to confirm the samples on a random test cases were performed cytogenetic test such a fish. Results: The medical history revealed that about 60.5 % patients had aortic defect. Due to the normal range for calcium in infants, approximately 17% of calcium showed no particular reason. Cytogenetic testing is performed on a person who has been determined eligible patients displacement is 7q11.23. Conclusion: According to previous studies, our study demonstrated that calcium can be used as an auxiliary factor in Williams syndrome is a diagnosis. But it requires a series of additional factors also. Therefore, further studies on genetic factors and other biochemical screening to identify patients with this disease, even during embryonic done.

Keywords: William, Elastin, Aorta, Calcium

P102

The Prevalence of Phenylketonuria (PKU) in Infants Referred to the Health Center of Khonj

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Introduction and objectives: Deficiency of the Phenylalanine hydroxylase (PAH) due to mutations in the PAH gene results in hyperphenylalaninemia which is associated with the phenylketonuria (PKU) disease. This enzyme deficiency is diagnosed by newborn screening. Dietary restriction of phenylalanine is the treatment and should be started immediately. The aim of this study was to evaluate the prevalence of PKU in infants referred to the health center of Khonj. Methods: A cross-sectional study has been done on 6399 newborns that referred to the Health Center in Khonj city for screening tests during March 2007 to March 2014. During the days 3 to 5 after birth, heel blood samples were taken and then the PKU was screened by Fluorometric method. Results: Totally of 6399 newborns were screened for PKU, 2 (0.031%) cases were diagnosed as PKU that of them 1 (0.015%) infant was boys and 1 (0.015%) infant was female. Conclusion: The prevalence of the PKU in our study is 1:3200 that is higher than average was reported in previous study in Fars province (1:4698). Because relatively high prevalence of PKU found in this study, it seems that screening program needs to be continued.

Keywords: PKU, Newborn Screening, Khonj

P103

Effects of Resveratrol on the Activity of PAD2 in the Cortex of The Rat Brain

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Introduction and Objective: Demyelination is the hallmark feature in multiple sclerosis. The mechanism of demyelination is a complex multi-faceted process, part of which involves deimination of myelin basic protein. Peptidylarginine deiminase (PAD) family of enzymes catalyse the conversion of protein-bound arginine to citrulline. The 2 isoform of PAD is present in the myelin sheet of both the CNS and the PNS. Resveratrol is a polyphenol with neuroprotective effects. This compound unexpectedly has shown to exacerbate demyelination in models of multiple sclerosis. The purpose of this study was to evaluate the effects of resveratrol on the activity of PAD2 in the brain of rats. Materials and methods: 39 Rats were divided into 3 groups (13 rats/group) and were fed with resveratrol orally for 3 weeks. Control group was treated with water, the ethanol group was treated with ethanol 0.25 mg/kg (as a vehicle of resveratrol) and the resveratrol group was treated with resveratrol 120 mg/kg. Cortical tissues were kept at -80° C until assayed for the PAD2 activity. Results: The activity of PAD2 was significantly increased ($P<0.05$, Tukey's test) in the brain of resveratrol treated group as compared to the control group. Conclusion: The finding that oral resveratrol induces the activity of PAD2 in the cortex of rats is in line with the adverse effects of resveratrol on the multiple sclerosis.

Keywords: Peptidylarginine Deiminase, Multiple Sclerosis, Demyelination, Deimination, Resveratrol

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P104

Effects of Vitamin D on the Activity of PAD2 in the Rat Glioma C6 Cell Lines

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Introduction and Objective: Multiple sclerosis (MS) is the most common CNS-demyelinating disease of humans. Hypercitrullination (or deimination) is known to promote focal demyelination through reduced myelin compaction. Peptidylarginine Deiminase2 (PAD2) deiminates arginyl residues involved in a peptidyl link into citrullyl residues in a calcium dependent manner. Environmental factors contribute to the etiology of multiple sclerosis. Epidemiological studies have shown that vitamin D reduce the risk of this complex disease. We aimed to investigate the effects of vitamin D on the activity of PAD2 in the rat glioma C6 cell lines. Materials and methods: C6 cells cultured in DMEM (FBS 10%) media were treated with either vitamin D (10 and100 ng/mL) or ethanol 0.1% (vehicle of vitamin D) for 24 h (n=9). Cells were harvested and their lysates were subjected to PAD2 assay. Results: The activity of PAD2 was significantly decreased ($P<0.05$, Tukey's test) in both groups of vitamin D treated (10 ng/ml and 100 ng/ml) cells as compared to the vehicle group. Conclusion: Our finding that vitamin D decreased the level of activity of PAD2 in a line of glioma cells is consistent with the epidemiological data on the inverse relationship between the plasma levels of vitamin D and the risk of multiple sclerosis.

Keywords: Peptidylarginine Deiminase, Multiple Sclerosis, Vitamin D, Hypercitrullination

P105

Effects of Polyunsaturated Fatty Acids (PUFAs) on Global DNA Methylation in Liver of Rats

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Introduction and Objective: Epigenetic alterations especially DNA methylation play an important role in carcinogenesis. Recent studies have indicated that DNA hypermethylation has a key role in the progression of liver fibrosis in hepatocellular carcinoma. Epidemiological studies have shown that PUFA might have a preventive effect on cancer incidence. The aim of this study was to investigate the effects of PUFAs on global DNA methylation in liver of rats. Materials and methods: 30 Rats were divided into 3 groups (10rats/group). The rats were fed with PUFA orally for 3 month. Control group was treated with water, second group was treated withn-3 PUFA (Eicosapentaenoic acid, Docosahexaenoic acid, 300mg/kg) and third group was treated with a mixture of PUFAs (Eicosapentaenoic acid & Docosahexaenoic acid, gamma linolenic acid, Linoleic acid, oleic acid, 300mg/kg). Liver was surgically removed from rats. DNA was extracted from liver using phenol-chloroform standard protocol. Analysis of Global DNA Methylation was performed by 5-mC DNA ELISA kit. The color absorbance of samples was read at a wavelength of 450 nm with ELISA reader. Graphpad Prism and Microsoft Excel software were used to analyze the obtained data. Results: The results of our study revealed no significant relationship between PUFAs and Global DNA methylation of treatment groups compared with control group ($P > 0.05$). Conclusion: our results showed that PUFA consumption did not have any effects on Global DNA methylation in liver of normal rats.

Keywords: Liver, Global DNA Methylation, PUFA

P106

Study the Breast Cancer Gene (BRCA1) in Obesity and Diabetes: A Review Systematic

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Background and Objective: Gene and its relationship with Talent Developing to the Cancer Breast Discovery by Is, BRCA1 is called a critical role in the metabolic function of skeletal muscles. Mutations in the BRCA 1 gene could increase Risk Developing to the Diseases Metabolic like Overweight and diabetes Type2. Results: Researchers University Maryland For the The first Load Discovery They That Protein 1 BRCA That In the Muscle The Skeletal Mouse And human Production To The Role Key In the Store The Fat, Reply To the Insulin And the Operation Mitochondria In the Cells Muscle The Skeletal There. Certain mutations in the gene BRCA 1 May increase Risk Developing Individuals to the Illness By Metabolic Like Overweight And the Diabetes Type 2. Without BRCA 1 Cell The higher the amount of fat stored in muscle and begin to rise properties Diabetic to They Our Believe Importance Gene BRCA 1 Over risk Breast cancer. Discussion: BRCA 1 protein in Muscle the Skeletal Mouse and And the Man Existence There. The first Evidence of the Expression This Gene Confinement by Muscle The Man In the 1994 gathering In. Then, With the Research Most of Specified Was Protein That By the BRCA 1 gene product To To To the Protein That Role Very Important In the Metabolism Fat Confinement By Muscle The There The ACC (acetyl - CoA - carboxylase) connected To The. After Of the Period Sports BRCA 1 protein binds to the ACC By And the The cause Power off To become It To A. Non Active ACC of use Acids Fatty By the Muscle To Stimulation To The. After Of the Discovery Relationship This Two Protein With the Also, Scientists For the Reply To the Role Vital BRCA 1 in Regulation Metabolism Muscle And Research To Designing Respectively. For This Purpose BRCA 1 gene To Power off They To the This Order This Protein Other In the Cell By Muscle The Cultivation By That Of the Individuals Female Slim, Healthy And the Active From By That was, Production Not Out. The The work With the Use Of the Technology (short hairpin RNA) shRNA specific For BRCA 1 in By Human (cell By Fiber Muscle The Skeletal) do. Results Show The That Cell By Muscle The Absence Production BRCA 1 Patient To Are. Removal of BRCA 1 That Similar With the Event Is That On Effect Mutation This Gene In the Man Is, Cause Increase Store The Fat, Reduction Message Updates Insulin, Reduction Operation Mitochondria And And the Increase Stress Aksydaytv To A. All this Events Factors Key Developing To the Illness By Metabolic Like Obesity, Diabetes Type 2 Illness By Heart - Vascular Are.

Keywords: Gene, BRCA1 Cancer Breast Obesity Diabetes

Iranian Association of Clinical Laboratory Doctors

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P107

HNA-1 in Blood Donors

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Introduction: HNA-1 antigens are located on the human neutrophil Fc gamma-receptor IIIb (Fcγ RIIIb). The glycoprotein is constitutively only expressed on neutrophils in mean copy numbers of 190,000 (range 120,000-400,000). HNA-1 has three alleles (HNA-1a, -1b, -1c). Neutrophil alloantigens are involved in a variety of clinical conditions including immune neutropenias, transfusion-related acute lung injury (TRALI), refractoriness to granulocyte transfusions and febrile transfusion reactions. The aim of this study was to evaluate HNA-1a, -1b among blood donors. Materials & Methods: HNA-1a and HNA-1b alleles frequencies in 130 Iranian blood donors (in Tehran Blood center) as evaluated by using PCR-SSP method. Results: The HNA-1 gene frequencies were identified as HNA-1a=0.41 and HNA-1b=0.59. The heterozygosity (HNA-1a+/1b+) and homozygosity (HNA-1a-/1b+,HNA-1a+/1b-) were 68 and 62 respectively . HNA-1a* HNA-1b Crosstabulation HNA-1b Total - + HNA-1a - 0 46 46 + 22 62 84 Total 22 108 130 Conclusion: The present data showed that the HNA-1 allele frequencies in these were similar to other studies described in others populations.

Keywords: HNA-1, Fcγ RIIIb, TRALI

P108

Frequency and Identification of Cryptosporidium Species Isolated from HIV Infected in Dividuals in Khuzestan Province

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Background: Cryptosporidium is a protozoan parasite that causes diarrhea a today a sone of the most talented individuals, and especially those known to be HIV +. Determine the genotype of the parasite species identification using molecular methods in each region can also resources understanding, mode of transmission, pathogenesis, treatment and control of parasitic infections are common in assessing affect human and animal. Clinical demonstrators in HIV+ patients developing parasite levels downgraded their safety is more affected. The purpose of this study was to determine the prevalence and genotypes of Cryptosporidium among HIV + patients in Khuzestan province. Materials and Methods: In current study stool samples were collected from250 HIV+ patients from the Khuzestan province. The first step was to identify the appropriate parasite sedimentation prepared by deposition of a second step, after extraction of DNA from all samples; PCR and Nested- PCR tests on all samples were performed. Finally Cryptosporidium species were determined using RFLP and sequencing. Results: Of the 250 HIV+ patient samples that were tested, 27 (10.8%) were found to be infected with Cryptosporidium. After determining the molecular species of parasite processing, 19 isolates (70.37%) of the species parvum, 7 isolates (25.92%) of the species hominis and one (3.7%) isolate of meleagridis were identified. Conclusions: The results of this study indicated a high prevalence of parasitic infection in HIV+ patients and its important ceasa health problem. Given that Cryptosporidium parvum and hominis as the dominant species in these patients were diagnosed. It seems that contaminated water and animals may play as a majorre sources and transmissions of infection in the region. Besides, HIV+ patients, due to decreasing low immunity levels are important to disease spreading. Therefore, prevention, control and monitoring of these patients needs more work to be done.

Keywords: HIV+ patients, Cryptosporidium, PCR-RFLP, 18s rRNA, Ahvaz

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P109

Evaluation of Hyperlipidemia in HIV-Positive Patients Treated with ART in Isfahan

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Introduction: In order to more effectiveness of anti-retroviral therapy (ART) and prevention of disruption or decrease adherence to treatment in AIDS patients, it is necessary to avoid medicinal complications through continuous care during treatment. Hyperlipidemia is one of the major side effects of Zidovudine and Efavirenz as two main drug in basic diet of these patients. Therefore, we decided that check the status of Hyperlipidemia in this group. Methods: This is a cross-sectional descriptive study and its target population is included new patients undergoing ART in Isfahan province. The total number of subjects were 60. Data analysis was performed through descriptive statistics by using SPSS-20 software. Results: Subjects were 42 males and 18 females with an average age of 32 and 29. 21 of men and 10 of females were in the clinical step 3 and 4 from the beginning of treatment. Among women there were 3 cases of hypertriglyceridemia and one case of hypercholesterolemia, these statistics between men were 7 and 2, respectively, that they all were treated with Zidovudine, lamivudine and Efavirenz. All patients had normal lipid status before starting the treatment. Conclusion: Although the prevalence of Hyperlipidemia in patients treated with ART wasn›t common in this study but regarding that Hyperlipidemia increases the risk of cardiovascular diseases, we need to pay more attention to this subject and patients Should be advised to refer to the service provider centers, continually, also necessary training is provided to patients about self - care such as diet observance, exercise, maintaining a balanced weight and reduce smoking. It is nesessery to provide LLDL/HDL testing in service provider centers to promote patient care.

Keywords: AIDS, ART, Hyperlipidemia

P110

Evaluation of Co-Infection HIV and Hepatitis B, C in Detected HIV/AIDS Patients in Isfahan

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Introduction: Hepatitis B, C and HIV are included blood-borne diseases and one thing that is very important to expand prevalence of them is sharing needle and syringe between IV drug abusers. In Iran, the prevalence of HIV among IV drugs abusers is 14.5% and the prevalence of Hepatitis C is about 50%. Co-infection with hepatitis in HIV/AIDS patients is noticeable for care and treatment. Therefore, it is necessary to evaluate hepatitis in HIV/AIDS patients. Methods:In Isfahan, we performed a survey (cross – sectional) for all 208 HIV-positive cases. Hbs Ag and HCV Ab tests were performed by ELISA on patients who had completed the risk factors questionnaire. The data was gathered by questionnaires. Results:In study of 208 HIV/ AIDS patients with the mean age of 32, the prevalence of hepatitis C was 56% that the majority of them were IV drug abusers (94%). The prevalence of hepatitis B was 2% that all of them were IV drug abusers and the prevalence of hepatitis B & C was 8% that all of them were IV drug abusers. Marital status, level of education and age were not related to the intravenous addiction. Conclusion:The survey shows it is necessary to notice hepatitis in HIV/AIDS patients with history of IV drug abuser. For prevention and control of AIDS and hepatitis between IV drug abuser, expanding harm reduction programs (methadone therapy and distribution syringes, needles, condoms) for intravenous drug abusers is necessary and it is important to provide hepatitis vaccination for IV drug abusers. We should notice that the hepatitis is 100 times more contagious than AIDS and increase awareness about HIV and hepatitis should be a priority in drug abusers.

Keywords: Hepatitis B, Hepatitis C, Hiv, Iv Drugs Abusers

P111

Effects of Scrophularia Striata Extract against Leishmania Major: in Vitro and in Vivo Studies

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Cutaneous leishmaniasis is a parasitic disease causing public health concern. Pentavalent antimonals, exhibit various toxicities and side effects. Moreover, unresponsiveness and resistance against anti-leishmanial drugs have been recently reported in Iran and some endemic areas of the world. In this regard attempts to find herbal remedies are increasing. In this study, the effect of the ethanolic extract of Scrophularia striata (S. striata) on the Iranian strain of Leishmania major (MRHO/IR/75/ER) was assessed under both in vitro (promastigote and amastigote forms) and in vivo (BALB/c mice) conditions The results showed that 10% S. striata extract could significantly reduce the size of the skin lesions produced by L. major in BALB/c when compared with that in the control groups ($p < 0.05$). In addition, the number of parasites was significantly decreased in the group subjected to 10% S. striata extract when compared with that in the control groups ($p < 0.05$) under both in vitro and in vivo conditions. Our findings showed that 10% ethanolic extract of S. striata could produce better anti-Leishmania effects when compared with other concentrations of the extract under both in vitro and in vivo conditions. Further investigations on various animal models are suggested to confirm these findings.

Keywords: Leishmaniasis, Scrophularia Striata, In Vitro, In Vivo

P112

Purification of Mouse IgG by Ion Exchange Chromatogeraphy for Basic Research

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Introduction: Antibodies are routinely used in biochemical and biological researches and have led to many medical advances. Mammalian sera represent a remarkable and economical source of immunoglobulins widely used in diagnostic and therapeutic applications. MATERIALS AND METHODS Blood samples were collected from 50 clinically healthy mice. Sera were collected and precipitated by 50% ammonium sulfate. After dialysis against PBS and tris-Phosphate buffer (40 tris and 25 mM phosphate, pH 8.2), ion-exchange chromatography was done on a DEAE-Sepharose fast flow in a laboratory made column at a flow rate of 0.25 mL/min. The column was washed in two steps using Tris-Phosphate buffer for first washing step and Tris-phosphate buffer containing 100 mM NaCl for second washing step. The eluted proteins were collected in 5 mL fractions and analyzed by SDSPAGE. Results: In reduced SDS-PAGE analysis of purified IgG two bands were seen in 50 & 25 KDa MW positions and in non-reducing conditions only one band was seen in about 150 KDa. We purified mouse IgG with purity higher than 95%. Purification by Ion-exchange yielded about 25mg of mouse IgG. We obtained highly purified mouse IgG. Conclusion: Due to the obtained high purity we concluded that Ion exchange chromatography cuolde be a suitable method for purification of mouse IgG with high quality. Our product is an economical product that could be used for animal immunization in research.

Keywords: Purification, Mouse IgG, Ion Exchange, Chromatogeraphy

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P113

The Immunotherapeutic Effects of Pentoxifylline on Expressions of Peroxisome Proliferator - Activated Receptor Gamma (PPAR?) Gene in Type 1 Diabetic Mice

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Background: Pentoxifylline is an immunomodulatory and anti-inflammatory agent and is used in vascular disorders. It has been shown that pentoxifylline inhibits proinflammatory cytokines production. PPAR? is a member of a class of nuclear hormone receptors intimately involved in the regulation of expression of myriad genes that regulate energy metabolism, cell differentiation and apoptosis. Recently, emerging evidence indicates that PPAR? And its ligands are indeed important for the modulation of immune and inflammatory reactions. The purpose of this study was to investigate the therapeutic effects of pentoxifylline on expressions of peroxisome proliferator-activated receptor gamma (PPAR?) gene. Methods: Diabetes was induced by multiple low-dose of streptozotocin (MLDS) injection (40 mg/kg/day for 5 consecutive days) in male C57BL/6 mice. After induction of diabetes, mice were treated with Pentoxifylline (100 mg/kg/day i.p.) for 21 days. Further investigations on immune changes in spleens were tested by semi-quantitative RT-PCR (BcaBEST RNA PCR Kit Ver.1.1 (Takara, Japan)). The semi-quantitative measure of gene expression was using the ratios of PPARγ/β-actin absorption density of bands on a gel. Results: Pentoxifylline treatment also significantly upregulation of peroxisome proliferator-activated receptor gamma (PPARγ) gene expression in spleens as compared with those in diabetic control group ($p< 0.05$). Conclusion: In conclusion, these findings indicate that Pentoxifylline may have a therapeutic effect against the autoimmune destruction of the pancreatic beta - cells during the development of MLDS-induced type 1 diabetes in mice.

Keywords: Type 1 Diabetes, Pentoxifylline, PPAR γ

P114

Evaluate Proliferation of the Amniotic Fluid Derived Stem Cells (AFDSCs) in Different Condition at Cell Culture

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Background: Up to date researches have illustrated that amniotic fluid may be unique and alternative source of stem cells for regenerative medicine and therapeutic application. The aim of this study is optimization of the growth conditions for the amniotic fluid derived stem cells (AFDSCs). Method and material: In this study after obtaining the patients' written consent, 5 ml amniotic fluid was obtained by amniocentesis from 5 pregnant women between 16 and 20 weeks and 20-45 age of gestation. Samples were centrifuged, cell pellet were seeded in 24 well plates and 2 samples in Amniomax and 3 others in M199 supplemented with grow factors. After 1week of primary culture the supernatant was collected and seeded in another well .From primary culture to passage 3, samples were evaluated in 3 conditions during more than 2 months. AFSCs in each condition after 1 week was attached the culture dish. In supernatant just 2 samples showed proliferation. AFSCs showed adherent properties in plastic surface and no need for feeder layers. They had fibroblast-like cell morphology and formed colonies. Results: The best of amnitic fluid stem cell growth was showed in Amniomax, also cells have good morphology and higher rate of growth. In supernatant, cells have minimum rate of growth. conclusion:The present study up to now demonstrated that AFDS cells could be isolate and culture in special media condition presenting better outcome.Specific culture medium and growth factors in this medium have key role to elevate rate of cell growth and their prolifration.

Keywords: Amniotic Fluid Derived Stem Cells (AFDSCs), Growth Conditions

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P115

A Study of Congenital Hypothyroidism Screening Project in Golestan Province – 1391-1392

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Summary: Congenital Hypothyroidism is one of the major causes of mental retardation in children which can be prevented if treated immediately. The incidence of the disease is estimated to be 1 in 3000-4000 live births in the world, 1 in 3801 live births in Europe and according to available statistics 1 in 1000 live births in Iran. The aim of this study was to evaluate the recall rate in Congenital Hypothyroidism Screening Project using the standard method of measuring TSH and T4 levels and comparing the results with each other and other societies. Materials and Methods: From Farvardin 1391 to Esfand 1392 the heel blood samples of 3-5 day old newborns, referred from all maternity wards in Golestan. Were collected for the first TSH level measurement and in the next step venous blood samples were taken to measure TSH and T3, T4 and T3 up levels both using ELISA method. Newborns with TSH = 5-10 IU/ML in first measurement or TSH> 10 0 IU/ML in second measurement recalled and with TSH>10-20 in first test and T4<6.8 in second test they were considered Congenitally Hypothyroidic and underwent treatment. Results: 45360 newborns were in the study with the following results: 45082 (%99.4) newborns → normal TSH level 278 (%0.6) newborns → ab normal TSH level. Then 49 (0.11%) were confirmed. According to the above figures the incidence rate of Congenital Hypothyroidism is 1.1 in 1000 in Golestan. Conclusion: The results indicate nearly the same incidence rate in comparison with the nationwide average rate. Regarding some delay referred cases causing a newborn to show symptoms of the disease, an effective surveillance system to check the quality of the laboratory methods seems crucial. Although Ethnic diversity may contribute to the spread of the disease.

Keywords: Hypothyroidism, Golestan

P116

Assessment of the Prevalence of Phenylketonuria and its Diffrent forms in Golestan Province

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Background: Phenylketonuria (PKU) is an inherited newborn metabolic disease caused by deficiency of phenylalanine hydroxylase (PAH). This enzyme is necessary to metabolize the amino acid phenylalanine to the amino acid tyrosine. PAH deficiency leading to accumulation of phenylalanine in blood. Untreated PKU can lead to sever mental retardation in newborns. Material and methods: Blood samples were collected on filter paper Watman 903 from 74000 newborns in Golestan province in 1391-1392. The concentration of phenylalanine was measured with colorimetric method. The samples with high phenylalanine concentration are approved by HPLC (high pressure liquid chromatography) method. Results: The results of this study showed that the prevalence rate of PKU in Golestan province is 1 in 18500 birth. The number of newborns with confirmed PKU is 4. And all the detected newborn were live in the East of Golestan consist of Gonbad(2),Kalale(1) and Minoodasht (1) =. The frequency of classic PKU and hyper phenylalalinemi (HPA) is respectivel in the east of Province is Higher and it seems that research on the impact of race, marriage, family and environmental factors to this disease appears to be necessary.

Keywords: PKU, Metabolic, Phenylalanine Hydroxylase

P117

Production of Polyclonal Antibody against Influenza Virus (A /H1N1/2009) Matrix2 Conserved Protein in Rabbit in Order Serological Methods Development

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Influenza virus is cause of acute respiratory illness and has ability to create a pandemic among human societies that occasionally lead to death of high risk people in worldwide. This virus has different envelope proteins such as hemagglutinin (HA), neuraminidase (NA) and matrix protein2 (M2). Recently, most of researcher focused on conserve domain of antigenic proteins for vaccine production. M2 is a proton selective ion channel. Extracellular domain of M2 can lead to immune system stimulation and produce antibody which, these antibodies has application for vaccine production, serological and diagnostic methods development. For M2 polyclonal antibody production, the purified recombinant M2 protein with Freud's adjuvant (intramuscularly and subcutaneously) was injected into two rabbits. Titer, function and efficiency of rabbit serums were evaluated using indirect ELISA, SRID, DRID and western blotting (WB) assays. In this ELISA, plates were coated with commercial M2e peptide (0.1µg/ml). Also, the M2 antiserum (1:100 dilution) was used in WB test. ELISA results showed that anti-M2 titer was raised after one months. Titer of M2 antiserum (1:128000) was obtained using an ELISA checker board. In DRID and SRID, sedimentary line and halo due M2 protein-anti-M2 interaction were observed. Also, the results of WB was positive for M2 protein. These results showed that the recombinant M2 protein has stimulated humoral immune response which lead to produced M2 polyclonal antibody in rabbits. So these antibodies is able to identify M2 protein and it is good for serological methods such as western blotting.

Keywords: Influenza Virus, M2 Protein, Polyclonal Antibody

P118

Immunomodulatory Effect of IFN-β on Brain Tissue Cell Lines

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Astrocytes actively play a pivotal role in inflammatory disease intensity of central nervous system especially multiple sclerosis (MS). Although IFN-β is a selective therapy for MS but the role of IFN-β in stimulating the astrocytes to produce cytokines is not clearly revealed. Therefore, it is encouraging to assess the modulatory role of IFN-β on astrocytes of brain tissue. The aim of our study was to analyze the molecular mechanisms of recombinant IFN β-1a directly affecting IL-10, iNOS, MMP-9 and TIMP-1 expression in central nervous system for the first time. In this way in vitro procedures conducted by human astrocytoma A172 and 1321N1 cell lines as a model system. The total RNA from A172 and 1321N1 cells treated with IFN-β and LPS/ IFN-γ/ IFN-β and untreated cells were extracted and evaluated for IL-10, iNOS, MMP-9 and TIMP-1 expression by real-time RT-PCR. We found a significant dose-dependent increase in IL-10 gene expression in A172 and 1321N1 cells treated with IFN-β or LPS/IFN-γ/IFN-β. Moreover, a significant decrease was observed in iNOS expression suggesting a similar mechanism of action for both cells. Eventually there were no significant changes concerning the modulation of the MMP-9 and TIMP-1 in response to IFN-β treatment. In part, the immunomodulatory effect of IFN-β may be due to increase of IL-10 and suppression of iNOS expression in astrocytes of brain tissue.

Keywords: Astrocytoma Cells, IFN-β, IL-10, Inos, MMP-9, TIMP-1

P119

Seroepidemiology of Hepatitis A and Relationship with Demographic Properties, 2013-2014

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Background and aim: The prevalence rate of HAV is due to properties such as various geographical areas, age, and socio-economic factors. The aim of this research is defining of Seroepidemiology of HAV in the basis of various factors and HAV Ab rate. :Materials and Methods: In a cross- sectional study, Blood samples of 280 people, who were referred to the lab with hepatitis likelihood, were collected. After serum preparation, HAV IgG and HAV IgM were calculated by ELISA method. Also the questionnaires that included some variants such as age, settlement, consumer water, educational rate of candidate and his or her parents, were completed. SPSS software was used for analysis details. Results: The results showed the presence of HAV IgG and HAV IgM in 104 people (37.1%) and 8 people (2.9%) respectively. There was no significant difference between HAV prevalence and genus (P>0.05). The antibody rates were more in elder people (P<0.05). Also, there was a significant difference between positive Ab rate and educational rate of individuals and consumer water (P<0.05).: Discussion: There was a marked regional variation in anti-HAV prevalence. The low Ab rate in present study and previous researches can be proof of HAV pattern alteration in Iran. HAV Ab measurement and vaccine and immunoglobulin use for prevention are suggested.

Keywords: Hepatitis A, HAV IgG, ELISA, HAV IgM

P120

Hbsag Prevalence in Pregnant Women Incity Birjandrywar 1392

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Introduction: One of the most common pathogens inchronic hepatitis B virus prevalence in the world economic condition sare different Vajt may Bashdaksrafrady who are infected during in fancy and early infection in adult chronic liver disease who areat risk of cancer liver Methods: The study of 3200 pregnant women referred to on of laboratory year 1392 srm their blood using the ELIS Atechnique for HbsAg V bad stgahawernese examined Results: of the study population (3200 mothers) of 22 patients (0.68%) had positive results from these results, 16 patients (72.7%) participants and 6 (27.3%) they were in their second pregnancy. Them inimumagewas 19 years and mostold 42 years Conclusions: Given that the majority of the population are healthy. The above findings indicate that the population may be at risk of infection. In order to prevent contamination of infected mothers before pregnancy can bediag nosed with congenital heart.

Keywords: Hepatitis , Hbsag, Pregnant Women

P121

A Survey Errors Diagnostic Addiction with Rapid Test and TLC (Thin Layer Chromatography) from 24915 Referral Persons to Central Lab of Qazvin City in 1392/6 until 1393/6

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Addiction is a problem for all of the world and it damages many things for example economic to families, to their countries, behaviors and damages to other people, etc. Due to this addiction, thus the rule of labs diagnostic play a very important role for prevention from injuries. The aim of this study was a survey errors diagnostic condition with rapid test and TLC 2495 referral person over a year (1392/6 until 1393/6). The method of this research was prospective cross sectional during 1 year material: At first the samples (urine) check rapid test with farafan kit of samples results were wrong and had to be rechecked with TLC the result was 726 positive rapid (%29) and total by TLC 121 positive(%0.48). In 24915 of course without drug interferences. Conclusion: Thus for prevention of pseudo positive or negative obtained results separation of them by TLC is recommended.

Keywords: Diagnostic Addiction, TLC

P122

Evaluation of Serum PSA Levels in Patient 40-60 Years Men Referred to Tehran Hospitals in 1392-1393

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Background and aim: Prostate cancer is a disease in which malignant cells are derived from the tissues of the prostate which are proliferated irregularly and increase the size of each cellular components of prostate gland after lung cancer, and common cause of cancer mortality in male population.The prostate-specific antigen (PSA) test measures the blood level of PSA, a protein that is produced by the prostate gland. The PSA test has been widely used to screen men for prostate cancer. The high PSA level may indicate prostate cancer. We studied the prostate-specific antigen concentrations in 40-60 year old men without prostate cancer. Materials and Methods: In this study, the files of 300 patients referred to a clinical laboratory in Tehran were studied during 2013-2014.These patients were blood sampled then using Elisa prostate-specific antigen (PSA) was determined. Results: During 2013, 2014, 300 patients admitted for prostate-specific test(PSA) 42 (14%) men among the 300 men had serum PSA concentrations greater than 4.0 ng/ml(narmal range) some of whom were patients having symptoms of the illness and 258(85.7%) had normal range. The level of PSA increased in men along with age and lifestyle related to them. Conclusion: According to the results of the conducted studies it is observed that prostate cancer can have ascending trend in Thran, which this resulted from unknown factors such as including immobility ,air pollution ,poor nutrition ,genetic, and ... The blood level of PSA is often elevated in men with prostate cancer, and the PSA test was originally approved by the FDA in 1986 to monitor the progression of prostate cancer in men who had already been diagnosed with the disease.

Keywords: PSA, ELISA, Cancer

P123

Assessment of Tissue Transglutaminase Antibody in Celiac Disease

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Celiac disease (CD) is characterized by a life-long intolerance to gluten from barely or rye. The classical presentation of CD includes gastroiontestinal symptoms and an increased risk for developing osteoporosis and intestinal lymphoma about half of the CD patients don't show the typical gastrointestinal symptoms, so the prevalence of CD has been underestimated for a long time. The diagnosis of celia disease consist jejuna biopsy and serological tests that detect antibodies deamidated gliadin peptid (DGP), issue transglutaminase (TTG). Antibodies levels should fall when gluten is removed from the diet. Methods and patients: We collected laboratory data on 155patients who admitted to our laboratory during last 6 month of 2014 in mashhad.The test including anti TTG were done by Elisa method using by eurou immune from Deutschland. Resalts: Among 155 patients, there were 93 women (%60) and 62 man (%40). The mean TTG level was 24.33 in women and 6.43 in men.In wemen 11 case and in man 4 case was abnormal. (TTG normal level is less than 20 iu/ml) Conclusion: Our study showed that frequency of abnormal TTG function test are noticeable among patients who referd to us.

Keywords: Celiac, Tissue Transglutaminase Antibody, Diagnosis, Method

P124

Immunogenicity Evaluation of High Density Influenza a Virus M2e Peptide in Mice Model

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Introduction: Influenza epidemics and pandemics occur worldwide which result in immense mortality and morbidity every year. Although a vast variety of influenza vaccines is available, because of antigenic drift (changes in Hemaglutinin and neuraminidase proteins) and antigenic shift (reassortment of influenza genome segments) there is an urgent need for a more immunogenic and heterosubtypic vaccine to reduce resurfacing pandemics. The N-terminal of influenza virus matrix protein (M2e) is conserved among all subtypes of influenza A viruses, therefore it can be considered as a potential candidate for a universal vaccine. Material & Methods: Herein, three tandem repeat of M2e sequence was cloned in pET28 and expressed in E.coli BL21 host. The prokaryotic peptide was purified by using Ni-TED column and injected both alone or with different adjuvant (Alum, CpG and Alum-CpG) to BALB/C mice. ELISA assay was used to measure specific total anti-M2 IgG and subclasses (IgG1 and IgG2a).Results: Results showed that 3M2e with and without adjuvants induced humoral immune responses and level of total IgG was higher in 3M2e protein supplemented with Alum-CpG compared to other formulation. IgG subclass measurement revealed that both TH1 and TH2 cells were involved in that improved antibody responses. Conclusion: According to limitation in 3M2e potency, it seems that the immunogenicity of 3M2e can be increased in combination with complex adjuvant. Applying Alum-CpG as an adjuvant induced a more balanced immune responses comprising both arms of immune system. The efficacy of 3M2e in protection of mice against lethal influenza challenge is ongoing.

Keywords: Influenza, 3M2e Protein, Alum, Cpg

P125

Influenza Virus Hemagglutinin Stalk Domain and Lm HSP70 Protected Mice against Lethal Challenge

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Introduction: Influenza virus is a member of Orthomixoviridae family with high variable antigenic surface proteins which can lead to epidemics and pandemics. Hemagglutinin (HA) is the most important and variable viral surface antigen. Herein, to make a vaccine which would protect against multiple strains we use a novel immunogen comprising the conserved influenza HA stalk domain, HA2. Materials and Methods: In this study recombinant HA2 protein was expressed in Escherichia coli, purified using Ni chromatography columns under denaturing condition, refolded and desalted by step-wise dialysis. Three doses of HA2 either alone or together with leishmania major HSP70221-604 as an adjuvant were injected interdermally to Six-week-old BALB/c mice in different groups. After two weeks mice were challenged with one lethal dose (LD90) of PR8 virus. Results: Results showed that mice vaccinated with HA2 peptide with HSP70 adjuvant offered higher level of protection against lethal H1N1 (PR8) challenge compared to other groups. Conclusions: Recent studies have alters the existing dogma that influenza virus neutralization is mediated solely by antibodies that react with the globular head of the viral hemagglutinin. It has proved that HSP70 can induce Ab response and innate immunity by stimulating CD8+ T-Cells, CD40, TLR2, TLR4 and cytokine secretion. Our results showed that HA2 alone or supplemented with HSP70 protected mice against lethal influenza challenge and could be considered as a universal vaccine.

Keywords: Influenza Virus, Hemagglutinin, HA2 Protein, Leishmania Major HSP70

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P126

Human Papillomaviruses and Human Murine Mammary Tumor Virus – Like Virus in Women Breast Cancer

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Objective: Viral etiology has been suspected but not yet proven for human breast cancer. Mouse mammary tumor virus (MMTV) is the well-established etiologic agent of mammary tumors in mice. Some studies have revealed a possible role for the human Papillomavirus and human murine mammary tumor virus-like virus (HMLTV) in the pathogenesis of human breast cancer. Methods: The aim of the present study was to investigate the presence of MMTV-Env gene like sequences and HPV- DNA in a group of Iranian women with or without breast cancer. A total of 65 breast cancer and 65 non-cancerous breast specimens Were collected from Department of Pathology in the city of Tabriz, in the East Azerbaijan in Iran, and analyzed by Nested-PCR. Results: All breast cancer and benign breast samples were negative for MMTV- Env gene like DNA.but we found HPV- DNA in 22 (33.8%) of the breast cancer specimens. All non-cancerous specimens were negative. Low and high-risk HPV types, including HPV-6 (26.2%), HPV-16 (1.5%), HPV-35 (1.5%), HPV-52 (1.5%), and HPV-11 (1.5%) were detected in our study. HPV-6 was the most prevalent type in the breast cancer specimens. Conclusion: These results indicate that MMTV-Env gene like virus and high- risk HPV types may not play a significant role in the etiology of breast cancer among Iranian women. The data presented in this study indicates a strong need for epidemiological studies correlating role of viruses in human breast cancer.

Keywords: Mouse Mammary Tumor Virus, Human Murine Mammary Tumor Virus-Like Virus, Breast Cancer, Human Papillomavirus

P127

Frequency of Positive Blood Cultures in Pediatric Sepsis, Booali Hospital, 2011-2014

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Objective: This study was performed to determine the frequency of blood cultures in pediatric sepsis cases in Booali hospital from 2011 - 2014.Materials and methods: In this descriptive - analytical cross - sectional survey, 204 children with sepsis attending to Booali hospital from 2011- 2014 were evaluated. Results: The results demonstrated that blood culture was positive in 12 cases (5.9%) that 41.9% the related germ was pseudomonas in 42%, enterobacter in 50% , and E.coli in 8%. Conclusions: According to the findings, it may be concluded that empiric therapy usually used in sepsis workup for the children is a logical step because of this matter that if performed, only 6 out of 100 cases are positive.

Keywords: Blood Culture, Children, Sepsis

P128

The Prevalence of Enteric Pathogens Isolated from Acute Diarrhea in Takestan

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Background: Diarrheal diseases in many countries, especially developing countries, are considered a major cause of morbidity and mortality. The major contribution of intestinal bacteria into account the incidence of these diseases .This study aimed to determine the prevalence of bacterial pathogens causing diarrhea in cases of acute diarrhea in these patients. Methods: 45 patients with acute diarrheal stool samples from patients referred to takestan health center during the May to October in 1392 and then collected by standard methods was studied in the laboratory .Samples prepared in the present study cultured in selective and specific media, was done biochemical tests and determining serotypes were identified using specific Antiserum. Results: of the total 45 cases, E. coli in 17 cases (37.7%) as the etiologic agent causing acute diarrhea were identified. The 5 cases (11.1%), E. coli reacted with E.coli Antiserum poly Group 3(O44, O125, O128) and 4 cases (8.9%) reacted with E.coli Antiserum poly Group 4 (O20, O114) and 8 cases (17.8%) did not reacted with any Antiserum grouping. The other main pathogenic agent that isolated was staphylococcus aureus. This organism isolated from 4 cases (8.9%). Conclusions: correct information about the epidemiology and prevalence of diarrheal pathogens and the use of rapid diagnostics can reduce the burden of diarrheal infections and very helpful are in promoting public health. The high presence of diarrhea-causing E. coli isolates indicated the importance of bacteria as a cause of acute diarrhea.

Keywords: Intestinal Pathogens, Diarrhea, Diarrhea-Causing E. coli

P129

Identification of the Most Common Bacterial agents Forming Conjunctivitis in Neonates Referred to Farabi Hospital Laboratory from March 2004 to 2014

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Objectives: Conjunctivitis is considered as one of the most important eye disease in neonates that can occur within the first 28 days of life. This disease appears with signs of purulent discharge, conjunctiva redness and swelling of the eyelids. Disease may be caused by bacterial, viral infection or other non infectious agents (chemical means). The disease can result in blindness in low-income countries such as Africa or where the treatment is not well taken. This study aimed to identify the most common bacterial agents forming this disease. Methods: The specimens (n = 880) were taken from patients whom were referred to Farabi hospital laboratory of Tehran University Medical Sciences due to infection caused by Neonatal conjunctivitis during March 2004 to 2014. Bacteria isolated from cultures were identified according to laboratory standards and antibiotic sensitivity test was performed by disk diffusion method. Results: Totally 645 bacteria were isolated in this study. From these numbers, gram - positive bacteria isolates were 474(73.49%) and the numbers of gram –negative bacteria were 171(26.51%). The most bacterial frequency were resulted from the species including Staphylococcus aureus (n= 176, 27.13±4.16 %), Streptococcus viridans (n= 135, 21.44 ± 5.97 %) and Staphylococcus epidermidis (n= 73, 11.37± 4.17 %). There was also one case of fungus isolated from the specimens which was Candida albicans. Conclusion: The results showed that, the most infections in the neonatal conjunctivitis are related to the bacterial agents. And among bacterial caused conjunctivitis, the bacterium Staphylococcus aureus and Streptococcus viridians were respectively dominant strains.

Keywords: Neonatal Conjunctivitis, Staphylococcus Aureus, Gram Positive Bacteria

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P130

Prevalence of Influenza A/H1N1 Viruses among Patients Admitted to Hospitals in North of Iran- Guilan (Bahman 88-Tir 89)

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Introduction: Influenza is an acute respiratory illness that undergoes genetic changes and then the new subtype can harshly affect the community. The first outbreak of A/H1N1 viruses appeared in Mexico City on year 2009, until July a total of 77201 cases have been reported in 103 countries in the world with mortality rate % 0/43. The aim of study was to investigate the prevalence of influenza A/H1N1 viruses among specimen received from patients who admitted to region education and training hospital during Bahman 88 until Tir 89 in north of Iran – Guilan - Rasht.Materials and Methods: The study was descriptive cross-sectional analysis on specimen from patients with influenza symptoms using Real - Time PCR technique. Results: out of 108 patients admitted to hospital with influenza symptoms 60 (55/5%) were female and 48 (44/4%) were male. The age of patients was between 1-78 years old. In total only 4 (3/7%) patients were shown A/H1N1 positive (3 (75%) male and 1(25%) female), which one male was deceased. Conclusion: Influenza viruses' mutations are constantly occurring and new subtype can re-infect the community. So it is imperative that people vaccinate or administer new drugs against novel strains of influenza.

Keywords: Influenza Virus, A/H1N1 Virus, Real Time PCR, Acute Respiratory Illness

P131

L-Asparaginase Production as Anti-Leukemia Enzyme by a Streptomyces Strain

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Introduction and objective: Asparaginase is clinically known as anti- lymphoblastic leukemia mainly in children. Whereas the most of soft tumor cells have been lost the pathway of asparagine synthesis, thus they are depended to uptake external asparagine. The enzyme actually inhibits growth of tumor cells through removing asparagine from blood. Therefore, the use of asparaginase as inhibitory factor against tumor cell development has made a major strategy in treatment of cancer diseases. The aim of the research is to isolate, characterize asparginase producing Streptomyces and evaluate enzymatic activity in order to use in cancer treatment after passing laboratory and clinical experiments. Methods: To select L-asparaginase producing bacteria, several bacteria isolated and cultured starch Casein agar (SCN). Isolation was then, performed on M9 medium agar as a modified method to select the best LAse producing Streptomyces. Assessment of LAse activity is also done by measuring ammonia released using Nessler reagent and protein assay by Lowry method. Results: Out of some isolates, only 4 isolate showed ability to produce L-asparaginase via changing color media from yellow to red on M9 agar. One isolate was selected as the best LAse producing Streptomyces based on having widest hallo around its colony. Identification of the isolate was showed similarity to Streptomyces achromogenes with 98%. Optimization of the enzyme production and activity for this isolates is in under process. Conclusion: So far in the investigation, we suggest that isolate bacteria have good potential to producing of enzyme. Therefore, we are hopeful to isolate bacteria that it can produce new enzyme whit less side effect, favorite and potent.

Keywords: L-Asparaginase, Streptomyces, Acute lymphoblastic leukemia

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P132

Comparison of Methods for the Detection of Platelet Products Contaminated with Strains of Staphylococcus Epidermidis and Klebsiella

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Background & Objectives: Given that microbial contamination is the third cause of mortality among blood transfusion center. The examination of the level of contamination in platelet concentrates is essential in blood transfusion centers.the purpose of this study is to achieve a rapid test for bacterial contamination of platelats concenteration. Method: This laboratory study was conducted. 14 bags of platelet concentrates prepared from Yazd Blood Transfusion Center. 6 units of platelet bag with bacteria Staphylococcus epidermidis and unit 6 with bacteria Klebsiella detecting 150.15 and 1.5 mg/ml were injected and two bag used as control. in the time, the bags were sampled aseptically. The samples were examined by the following four practices; culture, gram stain, smear, measuring the level of glucose and PH measurement. Result: Due to the presence of dextrose above 300 mg/dl, the initial glucose level of platelet bags was recorded. showing a decline in the average amount of glucose in contaminated platelet bags over 5 days; so that on the final day it decreased to 60 mg/dl. Moreover, the level of PH had a declining during the study and it averagely decreased from PH 7.3to PH5.2. (P=0.017) The results of culturing and microscopic examining the smear of the bacteria were diverse according to the concentrations used in the study. Conclusion: Given the importance of examining the contamination of platelet bags in transfusion centers. We can detect the contamination of platelet bags by measuring the level of glucose and PH level of the bags in less time at blood transfusion centers.

Keywords: Platelet, Contamination Bacterial, Ph

P133

Study on the Prevalence of Trichomonasvaginalis Infection in Humans Referred To Central Laboratory of Tabriz, Iran, Since April-January, 2012-2014

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Introduction: Trichomonasis is a unicellular infection in the lower urinary tract-genitals in men and women that usually occurs during the reproductive years.Pretty much way of its transition is through sexual contact. Spread of Trichomonasvaginalis is globally. The infection rate varies from 90-2% in the world.Diagnosis of Trichomonasis is a warning to the other sexually transmitted diseases that can simultaneously exist. Thus it is necessary to identify individuals who have the symptoms. As a result, this study was to investigate the prevalence of Trichomonasvaginalis in patients with symptoms of urinary tract infections, which most of them had burning and frequent urination. Materials and Methods: Methods in this study, 67000 urine samples were collected from men and women admitted to the Tabriz central laboratory during 34 mounths; Most patients had symptoms of urinary tract infections, especially burning and urinary frequency. In this study, the patients were asked to a morning urine samples. After centrifugation and preparation of urine sediment examined microscopic examination of samples immediately. Results: In this study, the following results were achieved in to determine 67000 samples of a morning urine survey: 69 cases (0.1%) were positive for TrophozoiteTrichomonasvaginalis, that positive cases among women were 51 cases (0.07 %)which 39 cases were low - literacy and Suburbs, that The highest prevalence was at ages 27-43. positive cases among men were 18 cases (0.02 %) which11 cases were low - literacy and Suburbs, that The highest prevalence was at ages 26-55. According to a survey of patients, mostly people with lowliteracy andrural areashad thehighest prevalence. The most prevalent was in the summer and fall season (October-September). Conclusion: Since the correctdiagnosis, can helpcorrect treatment, Therefore, accuratediagnosis and the results obtained, Prevalence of the disease accounted for a large percentage among people with low education and those living in the suburbs.Thusthe inclusion oftraining incommunity health centerswill control andplay a rolein disease prevention.

Keywords: Trichomonasvaginalis, Tabriz, Central labratory

P134

Study of Escherichia Coli, Escherichia Froundii Bacterial Contaminating in Swimming Pools of Sarein in Ardabil in 1985-1993

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Background & Objectives: Coliforms include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste. Escherichia coli (E. coli) is the major species in the fecal coliform group. Of the five general groups of bacteria that comprise the total coliforms .The mineral waters are part of human environment that have a direct relation with human health. Water used for drinking and bathing should have high quality. Human life depends on healthy and germless water. Ardabil province have many natural spas that could be precious assets. In this research, by considering that Sarein spas have therapeutic effects, we studied coliforms of Sarein spas that produce contaminations. Methods: water bacterium experiments were performed to determine contamination rate or disease producing potential. coliforms are used as an index in the contaminated waters. Sampling from mineral waters were performed in different seasons and to determine probable coliforms amounts, most probable number (MPN) was used. Then confirmative, complimentary and differential tests (IMVIC) were performed to identify coliforms; also to analyze the data variance analysis was used. Results: in this study 55% of samples were contaminated with coliforms and maximum contamination was in summer especially in August (mid summer). In contaminated samples microorganisms such as Escherichia coli, Escherichia froundii, Aerobacter aerogenes were observed. Discussion: From the ancient turn over today the Sarein Spas have been used for the treatment purposes and in many cases good results were obtained. Therefore it is necessary by obeying hygienic condition to keep these waters clean and healthy. Most of Sarein spas are contaminated with coliforme in some seasons. Therefore, they are not safe for bathing and swimming and they must be free from these contaminants. The important factors playing role in the contamination of these spas with coliforms including misuse of mineral water, over population and crowding, lack of proper and standard instillations in a few spas, in some of them which is roofed and require continuous control by the regional health authorities. The results of the this research concerns the1385 to 1388 years .But after 1389 to 1993 years, Is better health status the mineral waters in Ardabil. It is so good now health status of Sarein in Ardabil.

Keywords: Contamination, Spas, Sarein, Escherichia Coli, Escherichia Froundii

P135

Isolation and Identification of Cadmium Removal Bacteria from Water and Sediment

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Introduction, purpose: Cadmium is a kind of toxic and heavy metal. Industrial uses of this toxic metal cause pollution of environment. Bacterial communities residing in the cadmium polluted can miss and omit this metal through making cadmium sulfide and in different ways resist to cadmium. So one of the best ways for missing cadmium from industrial waste water is using of these bacteria. Tashk lake in Fars province always supports different environmental pollution like pollution of cadmium. The purpose of this research isolation and identification of cadmium removal bacteria from water and sediment of Tashk lake. Materials, Methods: In this research, we examined the specimens of water and sediment of 4 stations in Tashk lake in 2 seasons. for richness, we used the culture of LB broth and for separation of cadmium resistant bacteria.we used the solid culture of Nutrient Agar. Then recognition of bacteria was done through biochemical tests. With using of different concentration of cadmium in MIC test, we recognized the most resistant bacteria in each season. Then we examined the growth kinetic of the most resistant bacteria in the concentration of cadmium chloride (about 5 mg/lit) and also these examinations were done under the culture of control. Conclusion and Results: Some bacteria like Pseudomonas sp., Bacillus sp., E.coli sp., Serratia sp., Staphylococcus sp., are cadmium resistant bacteria. Some bacteria can tolerate the concentration of about 1000 µgr/ml .Isolated bacteria from cadmium contaminated areas have enough potential for treatment of factories effluents.

Keywords: Cadmium Resistant Bacteria, Cadmium, Heavy Metal, Tashk Lake

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Comparison of Urease Activity of Helicobacter Pylori on SP2/O and Vero Cells Layer Disruption

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Bckround and Objectives: More than 50% of the world's population harbor H. pylori in their upper gastrointestinal tract. Infection is more prevalent in developing countries, and incidence is decreasing in Western countries.helicobacter pylorus is the most common cause of gastritis the world over. However, this organism plays an important part in the development of gastric ulcer and duodenum ulcer in particular. Helicobacter pylori the cause of one of the most common infections in the world witch involves at least half of the population in most communities. This bacterium, witch is seen in mucousal layer and in vicinity of epithelial cells causes, mucousa changes, cell disorders, tissue Lesions, and inflammation. In this study, the role of mechanisms of Urease activity of Helicobacter pylori on SP2/O and Vero cells layer disruption was investigated. Methods and Materials: The study was carried out on 60 biopsy specimens. A speedy urea test was performed in endoscopy theatre, for all these samples. The biopsy samples were transferred to the laboratory in transport medium and were cultured in the selected medium. Then, The identification of bacteria was done by microscopic examination and biochemical tests. The direct effect of supernatant containing urease enzyme extracts from 50 bacterium samples on SP2/O and Vero cells was investigated. To investigate the factors causing cell Lesions, ammonia was used in PBS with different concentration. Results: in the presence of Urease enzyme and a different concentration of Urea, the color of the culture medium turned in to purple. This change was a sign of the production of Layer amounts of ammonia. Intracellular vacuoles were formed as well. In this study, in concentration over 8 m. molar the cyptopathic effect was observed in the vacuoles, and in the concentration of 40 m. molar of ammonia the full erosion of SP2/O and Vero cells layer occurred.

Keywords: SP2/O and Vero Cells, Urease, Cytopathic, Helicobacter Pylori

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Differentiation of Mycobacterium Tuberculosis Isolater Using of RFLP with the Polymorphic Guanine-Cytosine Rich Sequence in Border of Iran

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Background: Determining and clustering of Mycobacterium tuberculosis strains is of great application in control programs of tuberculosis. Identification of transmission type and tracking the infection source is also highly necessary. The present study was performed aiming to track and determine the type of Mycobacterium tuberculosis infection, as well as its relationship with demographic factors, using PGRS-RFLP.Methods: In this cross-sectional study, 84 smear-positive patients from 5 frontier provinces (East Azerbaijan, West Azerbaijan, Ardebil, Kurdistan, and Kermanshah) were investigated according to PGRS-RFLP. Demographic data were collected using a questionnaire. The results were analyzed by SPSS-18 and G-Box.Resualt: Based on clustering, recent transmission was 66%. Most clusters were obtained from Kurdistan and Kermanshah. Vaccination record (p=0.49) and treatment group (without previous treatment) (p=0.004) had a significant relationship with clustering. Other demographic factors including age, gender, religion, drug abuse, smoking, history of migration, and marital status did not show a significant relationship with clustering.Conclusion: Genetic variation of Mycobacterium tuberculosis is high in this region. The rate of recent transmission based on clustering was unexpected (global average is 30-40%). Recent transmission was more dynamic in the west than the northwest Iran. The strong relationship between the treatment group 1 (without previous treatment) and clustering based on PGRS-RFLP can demonstrate the high correlation between molecular and classic information. In addition, the significant relationship between vaccination record and clustering highlights the necessity to conduct more extensive studies.

Keywords: Mycobacterium Tuberculosis, RFLP, Guanine-Cytosine, Iran

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Determination of Correlation between RFLP-IS6110 and RFLP-PCR Techniques in Genotyping of Mycobacterium Tuberculosis

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Introduction: Selecting the most efficient and suitable method for genotyping of tuberculosis isolates in the developing countries may be determinant in recognizing the type of transmission and the subsequent control of tuberculosis. This study aims at determining correlation between the standard technique of Restriction Fragment length polymorphism insertion sequence 6110 (RFLP-IS6110) and Repetitive Sequence based_PCR (RFLP-PCR) technique. Materials and Methods: HIV-negative patients with tuberculosis in 5 frontier provinces of Iran were evaluated in a cross-sectional study using standard techniques RFLP_PCR and RFLP_IS6110 during 2012-2014 in terms of endogenous and exogenous type of transmission.Results: Based on RFLP-PCR technique, 34.5% (29 patients) of the subspecies were in unique stains and 65.5% (55 patients) had clustered isolates. Therefore, eight 2-member clusters (19.06%), five 3-member clusters (17.86%), three 4-member clusters (14.29%), and two 6-member clusters (14.29%) were obtained of 84 patients. However, according to RFLP-IS6110 analysis, of 63 patients under study, 14 had isolates less than 6 bands, 12 isolates (24%) were unique, and 38 (76%) had clustered isolates. Classification of the isolates in each cluster was as ten 2-member clusters, three 3-member clusters, four 4-member clusters, and one 6-member cluster. A strong correlation was observed between the clustering results of both techniques (p=0.02, tau-b correlation=0.8). The correlation was stronger in the clusters with more than 2 members. Discussion: Need to execute relatively easy, cheap, and accurate techniques for genotyping of mycobacterium tuberculosis isolates in the developing countries is inevitable. Here, it seems that RFLP-PCR technique, as an efficient and relatively accurate method, may be considered for genotyping of MTB isolates.

Keywords: RFLP-PCR, RFLP-IS6110, Correlation, Genotyping, Mycobacterium Tuberculosis

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Evaluation and Comparison of the Antimicrobial Activity of Bifidobacteria Bifidum and Bifidobacteria Infantis as Probiotic Bacteria against Salmonella Enterica Serotype Enteritidis

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Background: During the last decades, the prevalence of foodborne diseases due to contaminated food as well as demand for natural and healthy foods has increased. Using probiotics for this purpose and for inhibiting growth of food pathogens is an interesting topic. Objective: The aim of this study was to investigate the antibacterial effects of Bifidobacterium bifidum and Bifidobacterium infantis against salmonella enterica serotype Enteritidis by three different methods namely spot on lawn assay, agar well diffusion assay and agar disk diffusion assay and to compare the methods by the means of SPSS program. Material and methods: Supernatant and sediment of the two probiotic bacteria culture was tested in three different assays (spot-on-lawn, well diffusion and disk diffusion) against salmonella. Results: results showed that in all three assays, sediment and supernatant of Bifidobacterium infantis culture had a greater inhibition effect on salmonella than Bifidobacterium bifidum but the difference was not significant from statistical analyses point of view. In this study Well diffusion assay was the best method to identify the antagonism of microorganisms and spot- on lawn method was the worse. Also in all three methods, the supernatant was significantly more effective than sediment in inhibiting the pathogen. Discussion: This inhibition could be related to metabolites such as Acids, Diacetyle, Hydrogen proxide, Bacteriocins,…produced by probiotics. Better functioning of Well method could be explained by high accuracy and volume of supernatant used in Well method.

Keywords: Probiotic, Bifidobacterium Infantis, Salmonella, Well Diffusion Assay, Antagonism

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A Review to the Candida Africana

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The fungal species belonging to the genu candida reperesent the aetiological agents most ferequently recoverered from fungal infections occurring in immunocompromised patients including HIV-positive individuals and AIDS patients. Candica albicans is the most important pathogen in this group. The first time such a researcher by the name of ”Tietz” samples have been collected from patients with vagenitis introduced from Africa. At first named researchers such as “unusual vaginal isolates of c. albicans from africa”.Different views about toxonemi of this kind in researchers exists because some of the candidates are new biovarite of candida albicans till new specieos. According to several studies show that candida africana sensetive to fluconazol. itraconazol, vorioconazol and 5- flucytosine. In connection with candida africana adhision ability to HeLa cell and biofilm formation on polyvinyl choloride strips studies also show that adhision ability to these cells is less than candida albican and candida dublinensis. Candida africana unable to attract N-acetyleglucoseamiens and glucoseamine and also attract disaccarid trehalose and organic acid DL- Lactat. In general the methods that include Miccronaut-candida-candidatest is almost 21-AnagnosTec-MALDI-TOF-VITEK 2 and chromogenic methods will be to identify candida africana study based on philogenic sequence of the area D1, D 2 Ribosomal RNA found 26 that the area has been done of course can be the sequence region was 18 small subunit gene Ribosomal on. As for serotyping the candidate can be infections RFLP-PULSED-FEIE GEL ELECTROPHORESIS-RANDOM AMPLIFIED POLYMORPHIC binds DNA -RAPTD HWP protein 1. Of course today is based on bind DNA methods like commercial carpegen are used according toprobe marked themselves have nucleic acid region ribosomal fluresance study based on light is this method name manufacturing chips puckered microarry.

Keywords: Candica Africana, Candida Albicans, Fungal Infection

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Comparative Seroepidemiological Study of Toxoplasmosis in Diabetic and Non-Diabetic People of Boukan City Using ELISA Method

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Background & Objectives: Toxoplasma gondii is an intracellular opportunist worldwide contaminated parasitic disease. The final host of this parasite is felines but human and large scale of warmhearted vertebrates being is intermediate hosts for this parasite. Comparative Study on diabetic people and non-diabetics will determine the risk of toxoplasma infection in diabetics. Materials & Methods: This case-control study carried out on 130 people of applicants who referred to Bokan laboratories. Consisted of 65 patients with diabetes and 65 of non-diabetics who all of them were examined for FBS at first, and then were examined for IgG and IgM titers against toxoplasma infection by ELISA. Results were analysed by chi-square statistics test. Results: According the results, the overall frequency of anti- Toxoplasma (IgG, IgM) antibodies in all of studied people were 48 (37.69%) and 2 (1.54%) respectively. This frequency for diabetics were 30 (46.15%) and 1 (1.54%) and for non-diabetics were 19 (29.23%) and 1 (1.54%) respectively. Between positive antibodies and factors such as diabetes, age, soil related jobs, cat contact and educational level Significant association was seen ($p<0.05$). But there was no significant relation between toxoplasmosis and probable related factors like sex, living places, and using raw steaks ($p>0.05$). Conclusions: The results of this study indicated that diabetes as a risk factor to ….The present study demonstrates high prevalence of Toxoplasma infection among the Diabetic people is proposed as a risk factor.

Keywords: Bokan, Diabet, Igm, Igg, Toxoplasmosis

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Consideration and Comparison of the Effect of Lactobacillus Rhamnosus and Lactobacillus Plantarum on Reduce of Contamination with Aflatoxin B1

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Mycotoxins are the fungal secondry metabolites and aflatoxin B1 is one of the strongest types of mycotoxins with properties such as immunosuppression, mutagenicity and carcinogenicity. Therefore detoxification and decrease of bioavailability of this toxin in feed and food is of great interest for increasing health level in society and avoiding economic losses. One of the newest methods of detoxification and decrease of bioavailability of toxin is using probiotic bacteria strains. Different researches have indicated that probiotic Lactobacillus strains in addition to many health giving properties are able to detoxify and decrease the bioavailability of this dangerous toxin. This research has investigated the ability of Lactobacillus rhamnosus and Lactobacillus plantarum in decreasing contamination by aflatoxin B1. The experiment was conducted on the Lactobacillus rhamnosus and Lactobacillus plantarum bacteria in spray dry form, revival microbial actions were performed in MRS broth medium and bacteria were cultured in both aerobic and unaerobic conditions in this medium and then exposed to aflatoxin B1 solution with 5ppb concentration for one hour and finally the concentration of remaining toxin was measured by HPLC method.Both of Lactobacillus rhamnosus and Lactobacillus plantarum bacteria are able to decrease aflatoxin B1 concentration. Lactobacillus rhamnosus reduced concentration of toxin solution from 5ppb to 3.89ppb and Lactobacillus plantarum reduced the concentration to 4.39ppb. Probiotic lactic acid bacteria strains such as Lactobacillus rhamnosus and Lactobacillus plantarum are able to detoxify and decrease aflatoxin B1 concentration, and Lactobacillus rhamnosus has greater ability to decrease the concentration of toxin solution and is one of the most effective probiotic bacteria for decreasing aflatoxin B1 concentration.

Keywords: Lactobacillus Rhamnosus , Lactobacillus Plantarum , Aflatoxin B1

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Evaluation of Antibiotic Resistance and Presence of CTX-M Genes by PCR (Polymerase Chain Reaction) Method in Clinical Separated of ESBL Producing Ecoli from Urine Sampel of Pations Admitted to Babol Yahyanejad Hospital

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Introduction: General Eshershia is one of the commonest bacteria which is separated from human infections and causes the infection of urinal System (geni tourinary system) this bacterium, due to getting the plasmids which codes the vast betalactame to betalactam antibiotic such as sephalosohorine.there fore considering not studying the gene identification ctx-m in this hospital and area it has been studied phenotypically and geotypically. Procedure: This descriptive- temporary study which lasted 6 month starting july 1393 from the urin samples of patients coming to yahyaneshad medical-educational center in babol. Tested the sensitivity of antibiotic disc through circulation in the agar nutrient environment. then through phenotypical test the producers become known in ESBL producer Finding: Out of 1842 patients tested ,1278 people (69.4%) women and 564 (%30.6) men who 940 (%51) were hospitalized and 902(49%) were not hospitalized. from 84 recognized Ecoli 46 cases (54%) were hospitalized patients and 38 case (45.2%) of them were not hospitalized out of all 84 cases 26 cases (31%) reported to have ESBLwhich 15 cases were tested base on quantified pcr which (80%) reported confirmed Conclusion: Resistance forward various antibiotics of betalactam.especially the third generation Cephalosporine is a serious threat. according to the finding of the present study, the existivy genes of betalactama 2 ctxm in general Eshershia in this area is highly widespread which increases the control and stability of antibiotics to large extant. The existence of the ctx-m gene in large extant of this patients, wore phenotypical and geotypical studies in pathogene bacteria in this area is recommended.

Keywords: Esbl, Btalactamase, Eshrshiacoli

P144

Evaluation of the Immunization by Hepatitis B Vaccination in the Laboratory Staff

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Background: HBV is one of the important factors in acute, chronic hepatitis and liver cancer; thus, it is necessary to prevent the disease through vaccination. The aims of this research include an evaluation of the immunization by hepatitis B vaccination in high risk people as well as relationship of the immunization of vaccinated people with the variables of gender and age. Methods: The methodology used in this research is a semi-experimental one. The research was conducted on 252 laboratory Staff who were vaccinated three times. The research was performed through anti-HBc quality tests and anti-HBs quantitative tests ELISA method, two months after the last vaccination. Results: T-test, correlation and analysis variance tests were used to analyze the data. Five staff were deleted because their anti-HBc was positive.98.68% showed strong immunization respond (anti-HBs≥ 100 mIU/ml) and 1.32% showed no immunization (anti-HBs<10 mIU/ml). None of the subjects had weak immunization (10mIU/ml ≤ anti-HBs<100 mIU/ml). A significant statistical relationship was observed between the gender and age of subjects with the amount of their anti-HBs titer (P<0.05). A regression equation was obtained between the age and the titer of anti-HBs in the mentioned persons: re=2147.5-44.4 age. Conclusion: A regular and full vaccination (three times) will yield a high immunization and its continuation is recommended. The amount of anti-HBs titer increases in women, more than men and as the age goes up, the amount of the titer goes less. With respect to the regression equation, by having the person's age we might be able to predict his/ her amount of anti-HBs due to vaccination.

Keywords: Hepatitis B Virus, Vaccination, Immunization, Laboratory Staff

P145

Prevalence of Occult HBV Infection in Haemodialysis Patients with Chronic HCV

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Background: To study the prevalence and clinical effects of occult HBV infection in haemodialysis patients with chronic HCV. Methods: Fifty chronic hemodialysis patients with negative HBsAg, and positive anti-HCV were included in the study. These patients were divided into two groups: HCV-RNA positive and HCV-RNA negative, based on the results of HCV-RNA PCR. HBV-DNA was studied using the PCR method in both groups. Results: None of the 22 HCV-RNA positive patients and 28 HCV-RNA negative patients revealed HBV-DNA in serum by PCR method. The average age was 47.2 ± 17.0 in the HCV-RNA positive group and 39.6 ± 15.6 in the HCV-RNA negative group. Conclusion: The prevalence of occult HBV infection is not high in haemodialysis patients with chronic HCV in our region. This result of our study has to be evaluated in consideration of the interaction between HBsAg positivity (8%-10%) and frequency of HBV mutants in our region.

Keywords: Chronic HCV, Haemodialysis, Occult HBV Infection

P146

Antibacterial Activity of Punica Granatum Peel Extracts against Escherichia Coli Isolated from Urinary Tract Infections

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Background: Escherichia coli (E.coli) is an important pathogen in the Urinary Tract Infection (UTI). Increasing of antibiotic usage for E.coli infections, created antibiotic resistance. Medical herbs with anti-microbial activity have always been important role in traditional medicine. The purpose of this study was to determine the antibacterial activity of aqueous, methanolic and ethanolic extracts of Punica granatum peel against E.coli isolated from UTI in vitro. Methods: This research is a descriptive analytic study. First, samples of aqueous, methanolic and ethanolic of Punica granatum peel were prepare by maceration method. Then its antibacterial activity against 158 isolates of E.coli from 200 samples of UTI was evaluated by well diffusion and then agar serial dilution method. Also, the MIC (Minimum Inhibitory Concentration) of extract was determined. Results: The diagrams, T- test were used to compare the results. The results demonstrated that the aqueous, methanolic and ethanolic extracts of Punica granatum peel show an average inhibitory zone diameter of 22.5, 21, and 23 respectively. The ethanolic extract shows best result having ZOI greater than that of the selective antibiotics. Ethanolic extract of Punica granatum has lowest MIC of 1.45 µg/mg showing that it is most effective as compared to MICs of other extract. There was significant difference between the effects of the plant and antibiotics on E.coli ($P<0.001$). Conclusion: This study demonstrates that an ethanolic extract of Punica granatum peel have excellent antibacterial activity against E.coli isolated from UTI and its effect is even better than selective antibiotic. Further investigations will be necessary.

Keywords: UTI, Escherichia coli, Punica Granatum, Antibacterial Activity

P147

Antibacterial Activity of Curcuma Longa Extract against Staphylococcus Epidermidis Isolated from Infected Burn Wounds

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Background: Burns are suitable sites for antibiotic resistant infections. Thus search for effective drugs against this problem is necessary. Medicinal herbs with antimicrobial activity have always been important in traditional medicine. The aim of this study was to determine the antibacterial activity of an ethanol extract from roots of Curcuma longa against Staphylococcus epidermidis isolated from infected burn wounds and their comparison with selective antibiotics in vitro. Methods: First, a sample of ethanol extract of dried roots of Curcuma longa (1mg: 5ml) by maceration method was prepared and then its antibacterial activity against 65 strain of Staphylococcus epidermidis isolates obtained from 500 samples of infected burns was tested for the determination of MIC (minimum inhibitory concentration) using well diffusion and agar serial dilution (0.039, 0.078, 0.156, 0.312, 0.625, 1.25, 2.5, 5, 10, 20) assays. Also the antibacterial activity of penicillin, oxacillin, vancomycin, was tested by the disk diffusion method. Results: Statistical methods were used to analyze the data. The results demonstrated that the Curcuma longa ethanol extract had been effective against 82.3% of Staphylococcus epidermidis. The MIC of the extract was about 2.5 mg/ml. while that was often resistant to selected antibiotics (100% and 54.5% resistant to penicillin and oxacillin respectively).There was significant difference between the effects of plant and antibiotics on Staphylococcus epidermidis. ($P<0.05$) Conclusion: This study demonstrates that an ethanol extract of Curcuma longa is effective on Staphylococcus epidermidis isolated from infected burns and its effect is even better than often selective antibiotics. Further investigations will be necessary.

Keywords: Staphylococcus Epidermidis, Infected Burn Wound, Curcuma Longa, Antibiotic Resistance

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P148

The Relationship between Helicobacter Pylori Infection and Iron Stores

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Introduction Helicobacter pylori is a curved spiral-shaped Gram-negative bacteria are the most common cause of chronic bacterial infection and the main cause of peptic ulcer, chronic active gastritis world. Also known as iron-deficiency anemia is the most common cause of anemia in the world is. One reason why that an important factor in reducing blood iron because iron was introduced to prevent the intestinal absorption of Helicobacter pylori infection. The purpose of this study was to investigate the association of serum iron, ferritin is Helicobacter pylori infection. Methods: The descriptive study of 1393 patients admitted to the Clinical Laboratory Parsa done. Serological study of Helicobacter pylori infection and measurement of levels specific IgG in serum iron and ferritin levels measured in 76 patients, respectively. Personal characteristics, serum iron, ferritin levels Questionnaire Collect. The information collected using SPSS and Glmvgrvf-Smirnov test was processed. Results of 76 patients, 14 were men and 62 were women. Helicobacter pylori infection in women, mean 50.86± 26.9, iron, 68.12 ± 32.6 ferritin was 62.41 ± 69.39 percent. Helicobacter pylori infection in men, mean 46.25 ± 26.16،iron 73.71 ±31.66 ferritin was 141.96 ± 153.0 Variables show due to increased infection rate in women than men is their average iron stores. Conclusion: There is strong evidence of an association between Helicobacter pylori infection and decrease the level of serum ferritin and iron deficiency anemia there, but some studies have failed to confirm this relationship. This relationship was also observed in the present study, however, decreased ferritin caused by Helicobacter pylori, further studies are needed.

Keywords: H. Pylori Infection, Iron Anemia, Serum Iron, Ferritin

P149

Determination of Enteropathogenic Escherichia Coli Serogroups Isolated from the Feces of Children and Investigation of Their Antibiotic Resistance

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Background: Escherichia coli is a major cause of diarrhea in children in developed and developing countries, which sometimes cause serious illness or even death. Its serogroups and antibiotic resistance pattern differ in different geographical areas. Therefore, it is essential to be aware of distribution and antibiotic resistance patterns to properly use antibiotics. This study determined the dominant EPEC serogroups isolated from children with diarrhea less than 10 years old and their antibiotic resistance pattern. Methods: In this cross-sectional study, 578 cases of diarrhea in children under the age of 10 years were collected from Shahid Madani hospital of Khorramabad and examined the presence of EPEC serogroups by bacteriological and serological tests. Their antibiogram tests were performed using 7 antibiotics by disk diffusion method. Results: Of 578 stool samples from children with diarrhea, 186 diarrheagenic E. coli strains were diagnosed and EPEC was isolated in 23 samples. The most frequency was related to children less than 2 years and serogroup IV (O20, O114) was the most common serogroup. The highest sensitivity was related to ciprofloxacin and the highest resistance Was related to amoxicillin, tetracycline, cotrimoxazol and minocycline respectively. Discussion: Geographical distribution pattern of diarrheagenic EPEC serogroups differs in worldwide. Hence, common serogroups should be identified in each region to precisely control the disease caused by them. Antibiotic resistance is increasing in the strains. It is essential to determine their antibiotic pattern for definite cure and lack of increasing resistance of pathogenic bacteria.

Keywords: Enteropathogenic E. coli, Antibiotic Resistance, Diarrhea, Children

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P150

Molecular Epidemiology Study of Suspected Meningitis Cases in Tehran and Alborz Provinces During 2010-2012

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This study was performed on 148 CSF samples collected from clinically suspected patients admitted in Tehran and Alborz province hospitals during two years 2010-2012. Samples transferred to molecular department of different private laboratories in Tehran (12 Farvardin lab, Izad dust lab) and Karaj (Amin lab in particular). Twelve common bacterial and viral causative agents of meningitis were investigated by specific primers for 16s rRNA, PCR and Real time PCR test. At first, genomic DNA were extracted from samples and investigated for bacterial infection. Specific primer for 16s rRNA was used and 38 samples showed 1000 bp band or in other words positive for Bacterial infection. All remaining samples undergo study for six different common viral causative meningitis agents by specific PCR and among them 71 samples (65%) were found positive and 39 samples (26%) showed neither 16s rRNA (bacterial) nor viral meningitis causative agents. Among 71 viral positive samples, human enterovirus isolated from 29 samples (41%), HSV 1,2 from 21 samples (30%), EBV from 8 samples (11%), CMV from 7 samples (10%) and VZV from 6 samples (8%). Main bacterial isolates from 38 positive bacterial samples were: Neisseria meningitides 11 samples (31%), Mycobacterium tuberculosis 8 samples (23%), Hemophilus influenzae 7 samples (20%) , Sterptococcus pneumonia 5 samples (14 %) and finally Listeria monocytogenes from 4 samples (12%). This study revealed viral infection still remains on top list of leading cause of meningitis infection in Iran and human enterovirus is the main viral infection.

Keywords: Meningitis, Bacterial and Viral Causative agents, Molecular Epidemiology Study

P151

Antibacterial Resistance Patterns among Acinetobacter Baumannii Isolated from Hospitalized Patients, Emam Reza Hospital in 2014

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Background & Objectives: Acinetobacter baumannii is an emerging pathogen of growing significance that has been more frequently isolated in nosocomial specimens. These bacteria have ability of gene transfer between its types and other bacteria as caused for resistance against antibiotics and resistance scattering of bacteria. The aim of research is determination of resistance for antibiotics and minimum extent of MIC concentration and separated Acinetobacter baumannii isolates in Tabriz Hospital. Methods: Sixty one clinical samples were collected within 9 months during 2013-2014 at Imam Reza medical center in Tabriz, Iran for identification of bacteria. The activity of various antimicrobial agents for 12 different antibiotics was determined with disk diffusion methods according to CLSI guideline (Hi Media, padtan teb) and MIC test carried out for imipenem, ciprofloxacin and amikacin antibiotics on samples. Results: Out of the 61 clinical Acinetobacter baumannii isolates collected, 60 (96.7%) were multi drug resistant (MDR). Respiratory tract specimens were the most common place of Acinetobacter isolation. To determine the Disk diffusion agar method, the highest levels of antibiotic resistance were seen against Imipenem, ceftazidime, ceftriaxon, and ciprofloxacin (99%). Colistin (70%), Amikacin and Tobramycin (50%) were the most effective antibiotics against Acinetobacter baumannii. MIC test among all samples shows that, 73.3% of factors have MIC ≥32 to imipenem, 93.3% of factors have MIC ≥ 32 to ciprofloxacin and 38% of factors have MIC ≥ 256 to amikacin. Conclusion: Our results confirm the high prevalence of Acinetobacter baumannii resistant isolates and the ensuing therapeutic problems in Iran and determination of the resistance patterns of these bacteria according to MIC is necessary. It would be a good idea to consider surveillance of antibiotic usage and restriction of using broad spectrum antibiotics before development of resistance to these agents.

Keywords: Acinetobacter Baumannii, Antibiotic Resistant, Minimum Inhibition Concentration

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P152

Determination of Resistance Pattern of Isolated Escherichia Coli from Hospitalized Patients with Urinary Tract Infections in Imam Reza Hospital of Tabriz

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Background: There is much evidence suggests that hospitalized patients are prone to bacteriuria. Urinary tract infection not only occurs frequently in hospitalized patients but also have severe side effects in these patients compared with non-hospitalized patients. Escherichia coli are the most common cause of urinary tract infections in hospitalized patients. Because of increase in bacterial resistance to antibiotics, determination of the bacterial resistance to antibiotics in the treatment of urinary tract infection is very important. The aim of the present study was to determine the resistancy of E. coli isolated from patients hospitalized in Imam Reza Hospital of Tabriz during to 2012-2013. Material and methods: 335 strains of E.coli were isolated from 2051 urine samples of hospitalized with urinary tract infections in Imam Reza hospital of Tabriz were screened by Disk diffusion Test as recommended by the Clinical and Laboratory Standards Institute (CLSI). The antibiotic resistance patterns of all isolates were identified by disk diffusion method. Results: According to antibiogram results, the rate of sensitive to amikacin 95/7%, Nitrofurantoin91/ 5%, tobramycin 64/7%, Gentamicin 64/1, ceftizoxim% 56/8 %, ciprofloxacin 37/6%, cotrimoxazole 31/ 4%, Nalidixic acid 23/5 % respectively were reported. Conclusion: High prevalence of drug resistance in hospitalized patients showed that overuse of extended spectrum cephalosporins and other antibiotics is one of the most important factors in acquisition of drug resistance in organisms. So antimicrobial susceptibility testing are necessary in all laboratories.

Keywords: Resistance Pattern, Imam Reza Hospital

P153

Study on Effect of Sub MIC Concentrations of Piperacilline on Exotoxin a and Exoenzyme S Genes Expression of Pseudomonas Aeruginosa Using Real Time PCR Method

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Evidence has demonstrated that sub MIC antibiotics may be able not to kill bacteria but can interfere with the expression of some virulent genes. Sub inhibitory concentrations of antibiotics have a strong effect on mutation rates, horizontal gene transfer and biofilm formation which may all contribute to the emergence and spread of antibiotic resistance. In this work, our aim was developing a real time PCR method for quantification of two Pseudomonas aeruginosa virulence genes (toxA and exoS) at the sub MIC of Piperacilline. The MIC of this antibiotic is determined by Broth Macro Dilution method. Total RNA of five strains are extracted from all sub MIC concentrations by total RNA extraction kit. After that, cDNA synthesis is performed by using reverse transcription kit. Then, Real time PCR carried out by SYBR green method. Our results show that sub MIC concentrations of piperacillin causes significant increase in the toxA gene expression but could not display any significant increase in exoS gene expression. Finally, we realized that there is no certainly and determining relationship between sub MIC concentrations of piperacillin with these genes expression. To end this, if the usage of antibiotics in patient body reach lowers than of MIC dose, it will cause increasing some of the virulent factors and aggravate the infection situation.

Keywords: Exotoxin A, Exoenzyme S, Sub MIC, Pseudomonas Aeruginosa, Real Time PCR

P154

Effect of Lactobacillus Isolated from Feces of Rats on Blood Cholesterol

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Background and objective: The human digestive tract of habitat complex microorganismHast during human evolution, microbiota lactobacilli in the gastrointestinal tract of humans living today have been isolated from normal flora of the effects of health promotion has attracted a lot of attention The aim of this study was to evaluate the effect of isolates from stool to reduce blood cholesterol. Methods: After separation Vkhals of lactobacilli from 40 samples, monoculture new isolates for 2 weeks in the control group (10 rats) after raising blood cholesterol by gavage orally fed after bloodletting straight from the heart results in the control group were compared. Results: The results of statistical tests to measure serum lipids, serum cholesterol decreased in the treatment group compared with the control group was observed. Conclusion: Increase too much cholesterol and low-density lipoprotein ((LDL in the blood and diet, an important risk factor for development of cardiovascular disease and cancer is the major new. Pharmabiotic includes the exploitation of new treatment of intestinal flora growing role of lactobacilli in hypercholesterolemic probiotic are increasingly being studied for use microorganism helpful to natural can be a major step forward in the protection of health.

Keywords: Lactobacillus, Weight, Rats

P155

Study the Effect of Sub MIC Concentrations of Imipenem on Alginat and Elastase Genes Expression of Pseudomonas Aeruginosa

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Background and Objectives: Pseudomonas aeruginosa is one of the most common gram negative opportunistic pathogens identified in the nosocomial infections. Sub inhibitory concentrations of antibiotics although unable to kill bacteria, they can interfere with some of the bacterial functions and genes expression of the virulence parameters. This study aimed to investigate the effect of sub inhibitory concentrations (subMICs) of imipenem on the expression algD and lasB genes, of Pseudomonas auroginosa isolates. Materials and Methods: This study was carried out on 5 clinical isolates of Pseudomonas aeruginosa. After identification of isolates by biochemical tests, PCR was performed to confirm the presence of virulence genes. Minimum inhibitory concentrations of imipenem was evaluated using the macro dilution broth method, according to the CLSI. The expression algD and lasB genes at subMIC concentrations of imipenem were assessed by Real time PCR. Results: The results showed that at all subMIC concentrations of imipenem the expression algD gene was decreased, wherease the expression lasB gene in some subMIC concentrations of this antibiotic reduced and in some other increased. The changes obtained were not statistically significant. Conclusion: The subMIC concentrations of imipenem can cause changes in gene expression of the virulence factors of P. aeruginosa and thus can influence bacterium pathogenesis.

Keywords: Alginate, Elastase, Imipenem, Pseudomonas Aeruginosa, subMIC Concentrations

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P156

Prevalence of Malaria in the First 6 Months of 1393

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Introduction and Objectives Malaria is a parasitic infectious disease. Causes parasite called Plasmodium, which is transmitted to humans by Anopheles mosquito. The disease outbreak in Sistan and Baluchistan, south of Kerman and Hormozgan province There are imported malaria in Isfahan Province. According to the Global Found Malaria and elimination of the disease in the year 1404 Cases of malaria in the first 6 months of 1393 were studied. Methods This cross -sectional study, 8629 patients with suspected disease are including Afghans, Pakistanis, Iranians were obtained. Blood samples were taken from the finger with a lancet is then thick and thin smear on a glass slide with a lens 100 color slides are examined . Results and Findings 18 out of 8629 patients suspected of suffering that was rang age 18-50. 15 persons of Afghan patients and 2 were Iranian, 1 was Pakistani. 15 people infected with Plasmodium vivax 2 people infected with falciparum and 1 case of individuals was mixed. Discussion The study shows that 2 % of the total patient population was positive for approximately 81 % of positive cases of non- Iranian. The Iranian people have been infected patient traveled to Tanzania. All items are imported live in Isfahan Province.

Keywords: Malaria, Anopheles Mosquito, Prevalence

P157

Prevalence and Antimicrobial Susceptibility Patterns of Bacteria Isolated from Blood Cultures in Emam Reza Hospital, Tabriz-Iran

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Introduction: The bacterien is the present of bacteria in blood stream. Bacteriema has an in creasing trend in some regions of the world. The objective of this study was to isolate bacteria from blood culture and to determine their antimicrobial susceptibility patterns. Methods: in this study 1600 blood culture sample were preformed over 6 mounth in emamreza hospita, Tabriz.bacteria species were isolated via blood culture. Antemicrobial susceptibility testing of all isolated was often performed oaccording to the standard microbiology techniques. Results: in this study 14/4% cases were positive in blood culture, the bacteria isolated from these samples were: coagulase negative staphylococci (52/2%), staphylococcus aureus (10/3), Alkaligenes (15/1), Escherichia coli (4/7%), Pseudomonas (7/7%) Acinetobacter spp (4/7%), Klebsilla (1/7%), streptococcus 1/7%. resistance rate to Ampicilin was very high (98%) and to Imipenem were low rate. Conclusion: in this study the prevalent bacteria isolated blelonged to coagulase negative staphylococci .sensitive rate to Imipenem was very high.

Keywords: Blood Culture, Antimicrobial Susceptibility, Bacteriema

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P158

Comparison of Two Different Disk Diffusion Agar Tests in Determination of Antibiotic Susceptibility for E-Coli Isolated from Urinary Tract Infection in Pediatrics

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Introduction & Objective: Urinary Tract Infection (UTI) is one of the most common infections during childhood and E-Coli is the more predominant pathogen recovered in UTI. Disk Diffusion agar test is a method of choice because it is cost effective, simple, and now routinely used for detection of antibiotic susceptibility. A rapid increase in antibiotic resistance in our region made the authors to design a study to compare this traditional method with two different disk diffusion agar tests. Materials & Methods: Our study was conducted between 2010 and 2012 in Be'sat teaching hospital on 100 pediatric patients ranged 15 days to 13 years old with positive urine culture for E-coli. Antibiogram detection was performed by disk diffusion agar test with two different kits as Padtan-Teb (made in Iran) and Mast (made in the U.K.) for Co-trimoxazol, Amikacin, Ceftriaxone, Nalidixic Acid, Cefixime, and Nitrofurantoin. Results: Co-trimoxazol obtained the lowest (23% Padtan-Teb and 26% Mast) and Nitrofurantoin had the highest (86% Padtan-Teb and 97% Mast) sensitivity in the two methods which were used in our study. The results were statistically significant for Amikacin, Ceftriaxone, Cefixime, and Nitrofurantoin. Conclusion: According to our study the results of antibiotic susceptibility were more compatible with other non national Disk diffusion agar test and thus we recommend that our manufactures in Iran should increase the quality of their products.

Keywords: Escherichia Coli, Disk Diffusion Test, Microbial Sensitivity Tests, Urinary Tract

P159

Anti-Bacterial Properties of Native Varieties of Sesame Extracts in Iran

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Background and Objectives: Due to progressive antibiotic resistance in pathogenic microbial population it is necessary to find new sources of antimicrobial agents. Previous studies demonstrate that some plants extract have the antimicrobial properties and therefore medical herbs as antimicrobial agents have found many applications. Therefore, this study examined the anti-bacterial properties of native varieties of sesame extracts in Iran. Methods: Three varieties of sesame (Darab, Oltan and non-branching Naz) from different parts of the country, after the separation of the oil using N-hexane, the remaining marinated 48 hours in pure methanol and extracted, Then were studied to evaluate level of anti-bacterial effects, by disc diffusion method, against two bacteria (Staphylococcus aureus and E.coli). Antimicrobial testing was performed with disc diffusion method. Antimicrobial activity was determined by measuring the zone of inhibition of growth. All experiments were repeated 3 times. Results: In this study, two varieties (non-branching Naz and darab) had more antibacterial properties than Oltan, so that in the non-branching Naz and darab produced zone diameter with 18 and 15.5mm against Staphylococcus aureus but Oltan was not so effective. Discussion: According to the results Iranian sesame variations had antibacterial properties, which depending on type of variation the properties are different. Therefore, further studies are needed to take advantage of them in the pharmaceutical industry and the production of antibiotics.

Keywords: Anti-Bacterial, Disk Diffusion, Sesamevarieties

P160

Identification of Beta-Lactamase -Producing Gram-Negative Bacilli from Clinical Cases Referred to the Hospital in Kazerun City

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Background and objective: A broad spectrum beta-lactamase -producing strains recently as one of the health problems in the world have been evolving. Some strains of Gram-negative bacilli, including strains of Klebsiella pneumoniae and Escherichia coli, the bacteria are known from the original broodstock. And uncontrolled infections they cause. Lactamase -producing gram-negative bacilli were ESBL detection of a wide range of bacteria isolated from hospitalized patients implemented over a period of 6 months. Methods: The samples submitted to the laboratory by standard methods of cultivation and identification of bacteria by standard laboratory methods recommended by the National Institute of ESBL were identified and isolated, and gram -negative colonies produced in the agar- 4microgram per mili liter MacCanky and were determined using a double disc. Results: The findings in this study of 125 gram negative bacilli isolated, 53 (4/48 %) and 10 cases of E.coli Pseudomonas aeruginosa and Klebsiella pneumoniae 20 are harvested. 88% of positive cases in the study of urine samples were separated. and secondly the lung samples with 10% of hospital Kazeroon most contaminated sample size, respectively. Conclusion: These results suggest that the frequency separation are Gram-negative bacilli producing Kazerun city.

Keywords: Beta-Lactamase, Producing Gram-Negative Bacill, Clinical Case, Hospital, Kazerun City

P161

Sarcocystis Hominis Species Identification in Slaughtered Cattle of Kazerun Using Light Microscope

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Background: Sarcocystosis infection is a common protozoan infections in humans and animals caused by Sarcocystis species. Sarcocystis hominis is one of three species of Sarcocystis cysts to form in bovine skeletal muscle and can also infect humans. Sarcocyst prevalence in cattle muscle around the world and Iran is very high; however, studies have not identified the species of Sarcocystis in Iran. Given the importance of this study was to identify the species of Sarcocystis hominis parasite health in cattle slaughtered in Kazerun evaluated. Methods: Fifty-one carcasses of cattle slaughtered in Kazerun slaughterhouse were study. Diaphragm muscle was use for sampling which were undergoing diagnostic tests by method of pathology. Results and discussion: The study sample with an light microscope cysts were seen in either thin or thick. Cysts of Sarcocystis hominis were studied in 14 cases of cattle. The thick-walled cysts. The cyst wall thickness of 1/11 - 5/49 was a micrometer. The thick-walled cysts were observed either flat or in the exterior wall of the cyst under an optical microscope radial protrusions or striated was observed. Sarcocystis species are common parasites that have been distributed worldwide and infect humans and many animal species. The present study aimed to identify the species of Sarcocystis hominis using light microscopy in Cattle were aimed at the Kazerun slaughterhouse to determine its importance in public health.

Keywords: Sarcocystis Hominis, Method Pathology, Cattle, Kazerun

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P162

A Survey of the Prevalence of Mycobacterium Leprae (Leprosy) In East Azerbaijan Province in Recent Decades (2004-2014): Case Study

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Background: Leprosy is a chronic granulomatous infection with two stable complications created by Mycobacterium leprae and initially skin and neurons are infected. Although Middle East and Iran are the regions in which leprosy is not a serious problem, this is important to say that new cases of leprosy are identified in Iran. Leprosy disease is endemic in East Azerbaijan province. This study aimed to evaluate the prevalence of this disease during 2004-2014. Method: This is a descriptive design conducted by registered information in clinical and epidemiological field of patients in health-therapy centers of East Azerbaijan province. The fields of all patients identified during 2004-2014 are investigated. Results: This disease was prevalent during 2004 (5 cases), 2005 (0 case), 2006 (4 cases), 2007 (4 cases), 2008 (1 case), 2009 (1 case), 2010 (1 case), 2011 (2 cases), 2012 (2 cases), 2013 (0 case), 2014 (1 case). In 10 recent years, the diagnosis of 21 leprosy cases was supported in health center disease of East Azerbaijan province. Conclusion: IN a study done by Golforushan et al., regarding prevalence of leprosy in East Azerbaijan province, in the 10 years, 157 new cases of leprosy are identified. This study showed that although the rate of this disease is low, it is not eliminated completely. Many of the cases of this disease are in grade1 (disability) and this is due to the fact that as this disease is in elimination stage, the authorities are less sensitive to eliminate this disease.

Keywords: Leprosy, East Azerbaijan Province

P163

Evaluation of Antibiotic Resistant of Escherichia Coli Strains in The Urine Samples of Pregnant Women Referred to Bokan City's Health Center Lab in 1393

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Background & Objectives: Urinary tract infection (UTI) by Escherichia coli as the most frequent causative agent, during pregnancy may has adverse effects on the mother and fetus. The aim of this study was the evaluation of antibiotic resistance in E.coli strains, there are isolated from the urine specimens of pregnant women of Bokan city for the first time. Materials & Methods: A total of 240 isolates of E.coli were identified by routine methods. The isolates were cultured in Müller-Hinton agar and, a ntimicrobial susceptibility testing was performed by Kirby Bauer disc diffusion method, according to CLSI guidelines. Results were compared with standard table and isolates were determined as resistant, sensitive, or intermediate resistant. Results: E.coli resistance rates to different antibiotics were as follows: Cefepime 7.92 %, gentamicyn 13.33 %, nalidixic acid 23.75%, ciprofloxacin 44.17%, ceftriaxone 25.46%, co-trimoxazole 57.92%, amikacin 71.25%, ampicillin 82.50%. Conclusions: Cefepime, gentamicyn, nalidixic acid are active against the great majority of UTI associated E.coli in pregnant women.

Keywords: Antibiotic Resistant, Bokan, Escherichia Coli, UTI

P164

Phenotypic Tests as Important Index of Pathogenesis in Uropathogenic Escherichia Coli (UPEC) Isolates and Their Association with Cystitis, Pyelonephritis and Asymptomatic Bacteriuria Cases

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Background & Objectives: Uropathogenic Escherichia coli (UPEC) strains are the main cause of urinary tract infections (UTIs). They encode several virulence factors closely related with pathogenesis of the bacteria at the site of infection. The aim of this study was to assess the presence of some phenotypic virulence markers in UPEC isolates and determine their association with cystitis, pyelonephritis and asymptomatic bacteriuria cases. Materials and Methods: UPEC isolates from UTI patients with different clinical manifestations were collected and screened for biofilm and hemolysin production, mannose resistant hemagglutination (MRHA) and mannose sensitive hemagglutination (MSHA). Moreover, antimicrobial resistance profile and ESBL producer isolates were also recorded as recommended by Clinical and Laboratory Standards Institute (CLSI) protocols. Results: Out of 156 UPEC isolates, biofilm formation was seen in 133 (85.3%) isolates and hemolysin production in 53 (34%) isolates. Moreover, 98 (62.8%) and 58 (37.2%) isolates showed the presence of type 1 fimbriae (MSHA) and P fimbriae (MRHA), respectively. Clinical isolates exhibited highest resistance against Ampicillin (77.6%), followed by Tetracycline (60.3%), Amoxicillin (59%), Cotrimoxazole (58.3%) and Piperacillin (55.8%). Double disc synergy test (DDST) showed that 26.9% of isolates were positive for ESBL production. Discussion: On the basis of our investigation, phenotypic methods could be noted for appropriate diagnosis of etiologic agents and better approach for treatment of UTI cases. In addition, some urovirulence markers were closely associated with a specific anatomical site of infection. Generally, investigation of the bacterial pathogenicity associated with UTI may contribute to a better medical intervention.

Keywords: Phenotypic Tests, Uropathogenic Escherichia Coli (UPEC), Cystitis, Pyelonephritis, Asymptomatic Bacteriuria

P165

Prevalence of Helicobacter Pylori Vaca Allels and Caga Genes in the Feces of Seroposetive Children in Kermanshah

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Bacground and Objectives: Helicobacter pylori is an important factor digestive disease. cagA and vacA genes of H. pylori strains cause increased risk of stomach cancer. Many studies on children who have symptoms of H. pylori infection by endoscopy indicate that more virulent strains may also have his stomach. Material and Methods: In this study, 300 children aged 2 to 9 years were examined and tested for detction of anti IgG. After DNA extraction from stool, samples tested by PCR for detection of vacA genotypes including allele frequency, (s1a, s1b, s1c, s2) and (m1a, m1b, m2) and for the presence of cagA gene Results and discussion: The findings showed that most strains of H. pylori genotypes vacA s2/m2 are isolated. But the frequency of cagA gene see in only 10 %. According to the results, the most frequent allele of the gene vacA s2/m2 this area has existing children. To ensure these wider molecular studies in other populations is recommended.

Keywords: Allel, Helicobacter Pylori, VacA, CagA, PCR

P166

Long Term Infection with Vaccine Derived Polioviruses in Primary Immunodeficient Patients; Serious Threat against Global Polio Eradication- Systematic Review of Literature

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Introduction: After initiation of poliomyelitis eradication program in 1988, millions of OPV doses were distributed all over the world annually. Occurrence of reverting mutations in live attenuated vaccine strains and increased neuropathogenicity of these strains has raised global concern in recent years. Primary immunodeficient patients are at a remarkable higher risk of both vaccine associated paralytic poliomyelitis and long term infection. These patients with chronic viral shedding may represent as a source of infection and reintroduce neurovirulent strains into the community after wild polio eradication. Herein we aim to present Iranian patients with immunodeficiency-associated vaccine derived poliovirus infection, current status of Iran and the role of national polio laboratory in this important issue. We also systematically reviewed current opinions and approaches to this purpose. Method: All Iranian patients presenting with acute flaccid paresis, were investigated for any type of polio viruses in stool using ELISA, PCR, nucleotide sequencing (CDC Atlanta) according to standard WHO protocols. We also examined immune characteristics of patients. A systematic search was performed on electronic databases using keywords related to vaccine derived polioviruses and immunodeficiency by two reviewers. Results: Iran with 15 cases has the highest number of reported cases in world. Range of shedding duration was 1week to 1.5 month in our patients. From a total of 3278 manuscripts, 33 articles presenting 76 patients and published worldwide since 1962-2014 were reviewed. Homoral immunodeficiency had the most proportion. SCID, XLA, CVID were most frequent PIDs. A significant association was found between PID type and genetic divergence and age of diagnosis. Chronic infections from 1 to 20 years were identified. Only About 22% of patients could clear the infection. Discussion: In current strategy it is crucial to reach the highest rate of OPV coverage and have an accurate surveillance of PID and AFP patients. Improving health workers' awareness about necessity of immunological investigations in high risk patients and also facilitating national polio-laboratory network around the country are two essential steps for reaching eradication strategy targets in Iran and other OPV using countries.

Keywords: Oral Polio Vaccine, Primary Immunodeficiency, Vaccine Derived Poliovirus

P167

Antimicrobial Resistance Pattern of Escherichia Coli Isolates from Urine Culture in Bou Ali Sina Hospital, Sari, Mazandaran, Iran. 2013

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Introduction and Objectives: UTA is one of the most common bacterial infections and E.coli is known as an important cause of UTAs.The present study was designed to determine the antimicrobial susceptibility of E.coli in the urine culture of patients admitted to Bou Ali Sina Hospital,Sari,Iran. Materials and Methods: This is a descriptive cross section study (2013); from 3215 positive samples, patients with urinary tract infection, referred to the Bou Ali Sina Hospital of Mazanadaran University of Medical Sciences, Sari, Iran, were assessed. 1872 isolates of E. coli from urinary tract infection were collected and antibiotic resistance pattern of them was determined for 14 antibiotics by disk diffusion method. Inhibition zone diameter was measured based on the M2-A9 protocol introduced by CLSI. Analysis of the data were performed by the SPSS V16 software and using the descriptive statistic method. Results: The most resistance to antibiotics was seen for Ampicillin (87.8%), Ceftazidin (76.7%), Cephalexin (57.9%) and SXT (50.4%), there was the most sensitivity to antibiotic for Imipenem (89.2%), Amikasin (84.8%), Ciprofloxacin (83.7%), and Ceftriaxone (82.3%). Conclusions: highest sensitivity was to Imipenem and Amikasin in this study. Also the highest resistance was to Ampicillin which explains why this drug is not recommended to treat of urinary tract infections caused by E. coli.

Keywords: E. Coli, Urinary Tract Infections, Antibiotic Profile, Resistance, Sensitivity

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P168

Prevalence of Staphylococcus Aureus Isolated from Endotracheal Tubes of Patients in Boo Ali Sina Hospital, Sari, Mazandaran, Iran

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Introduction and Objectives: Ventilator – associated pneumonia (VAP) is one of the most important problems in ICU admitted patients. Staphylococcus aureus is one of the most important factors in the development of VAP. Due to the high risk of mortality and the costs imposed to the patients, the proper treatment seems to be an undeniable necessity. For this reason the aim of this study knows the most common pathogens and the resistance pattern to the antibiotics. Materials and Methods: Samples were taken of patients with VAP who were hospitalized in the ICU of Boo Ali Sina Hospital in Sari in 2013. Samples from patients (that more than48hours had elapsed from the time of their admission) were collected and were transported to the microbiology laboratory medicine. Clinical diagnosis of pneumonia under the supervision infectious disease specialist. After cultured in blood agar and mannitol salt agar medium, bacteriological diagnosis based on gram staining, microbial and biochemical test was performed. Determine the antimicrobial susceptibility was performed according to CLSI guidelines. Result: From 478 suspicious patients, Staphylococcus aureus was found in 2.1% of samples. All isolated of Staphylococcus aureus was resistant to the antibiotic methicillin. Of all cases of Staphylococcus aureus in 50% sensitive alone by vancomycin and other positive case sensitive were as follows to antibiotics chloramphenicol, vancomycin, ciprofloxacin, Ceftriaxone, erythromycin, cotrimoxazole, oxacilin, imipenem and gentamycin, Amoxicilin, and penicillin. Conclusion: Due to the different prevalence of Staphylococcus aureus in many studies, (because of different colonization of Staphylococcus aureus in each hospital) performing this study in the ICU in each hospital seems necessary for reduce mortality and health care costs in VAP disease.

Keywords: Ventilator Associated Pneumonia (VAP), Staphylococcus Aureus, Nozocomial Pneumonia

P169

Prevalence of Microorganism in Urinary Tract Infection in Infant Refer to Hospitals in 2012 - 2013 in Zanjan

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Introduction: Urinary tract infection are the second most common type of body infection. The present study was designed to determine the Prevalence of microorganism in Urinary Tract Infection in infant refer to hospitals in 2012-2013 in zanjan. Material and Method: for this descriptive study, a total of 603 urine samples were examined during a 12-month period. They were all cultured in EMB, BA, and different madia. Antibiogram profile of the bacteria was determined by disk-diffusion test (Kirby-Bauer) according to NCCLS standards result: from 603 urine samples were examined, 295 were positive culture with different microorganism. In our study e-coli (66%), staff (17%), enterobactre (12%), Klebsiella (5%), are common bacteria in UTI respectively .Sensitively in antibiograms was for Nalidixicacid, amikacin, Nitrofurantoin was seen. conclusion: It is quite alarming to note that almost all of the isolates included in this study were found resistant to antibiotics. Antibiotic resistance is becoming a big problem for the public health which threaten the lives of hospitalized individual as well as those with chronic conditions and add considerably to health care cost.

Keywords: Infant, UTI, Staff, Kelebsiella, E. Coli

P170

Evaluation of Epidemiology Pertosis During to the Year 2013_2014

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The genus bordetella com perises three recognized species of gram negative bacilli. B. pertussis is a human pathogen incriminated HN the majority of cases of whooping cough. A common child hood infection B. paraper tusis is also occasionally found in whooping cough these organisms colonize mucous membranes of throat and nasophary, area and by producing various toxins the characteristic clinical manifestation of the disease predominantly coughing and cyanosis starts: Chorionic stages of disease lasts for several days to weeks The aim of this studywas epimic logic sur vey on clinical specimens collected from qods hospital of qazvinprovinceduring1 may 2013 to Feb 2014 Material & metod: ina retrospective descriptive cross sectional study 30 docron's samples taken from nose of children with a mean age 2.0 years. the swabs transferred to trans port media and sent to pasteur Ins. Result: From 33 sample totally 5 case were contained 4 cases positive PCR with culture and only one case was positive PCR with negative culture for b. pertussis. Discussion and conclusion: Mass vaccination for pertussis (Dept.) during last decades results total control in children in adults, and youngest however the deasease could be observered sporadically that may transmit to neo nants and pre disposed children www. ∏ ecom.com So in conclusion good health pre cautions are strongly recommended for disease control.

positive	Up to 2 years	Under 2 years	female	male	case
5	26	7	18	15	33

Keywords: Bordetella, PCR

P171

Isolation and Identification of Species Cutaneous Leishmania by Real Time PCR and RFLP-PCR Method

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Background: Leishmaniasis is a parasite disease that is seen in tropical regions. This disease is a health problem in Iran and 80 countries around the world. A true diagnosis of cutaneous leishmaniasis has an important role in treatment of the disease. Regarding to low sensitivity of common parasitological methods compared molecular methods; we aimed to evaluate the results of direct smear of smears of patients suspected to cutaneous leishmaniosis using RFLP-PCR and Duplex Real Time PCR. Material and methods In this study 200 smears of skin lesion of patients suspected to leishmaniosis frome 5 endemic regions in Isfahan province were prepared. The smears were stained with Gimsa. After DNA extraction using High pure PCR template Roche, RFLP-PCR and Duplex Real Time PCR were done with L5.8s, LTSR, HAE III enzyme and designed primer/probe respectively. Results The results of three methods in this study (microscopic, RFLP-PCR and Duplex Real Time PCR) were compared with each other. The positive results in three methods were respectively 86% (172/200), 90% (181/200), 89.5% (179/200). Of 181 positive specimens, 5 samples is L.tropica and others were L.major. The specifity of Duplex taqman Real Time PCR and RFLP-PCR is 100%. Conclusion However, the sensitivity of designed Duplex Real Time PCR in cases with low parasite was lower than RFLP-PCR, but this method can be a valuable, sensitive and fast method for diagnosis of cutaneous leishmaniosis.

Keywords: Leishmaniasis, RFLP-PCR, Duplex Real Time PCR

P172

Evaluation of Nasal Carriage of Staphylococcus Aureus among Ayatollah Bahari Hospital Therapeutic Employees in 1393

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Introduction: Staphylococcus aurues is one of the major causes of hospital infections. Studies have shown that between one third to half of the healthy people are carriers of this bactria in their noses. Hence, identification of the carries is very crucial for disease prevention purposes. Methodology: This study in conducted on 56 ayatollah bahari hospital therapeutic employees. A nasal soap was prepared from each person then identificated by katalase, manitol salt agar and dnase tests. Results: in our study, 10 persons (17.8%) was carrier staphylococcus aureus in their noses. No significant difference has been evidenced between men and women and in different wards of hospital. Conclusion: considering the significant role carriers in the infection transmission in hospitals, and the antibiotic resistance of staphylococcus aureus, hence identifying the carriers of this bactria is strongly curtail for the prevention concerns.

Keywords: Staphylococcus Aureus, Nasal Carriage, Ayatollah Bahari

P173

Determination of Phylogenetic Groups and Antibiotic Resistance of Uropathogenic Escherichia Coli (UPEC) and Commensal Isolates 2

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Escherichia coli strains are the major cause of urinary tract infections and belong to the large group of extra-intestinal pathogenic E. coli. They fall into four main phylogenetic groups: A, B1, B2 and D. The aim of the present study was to determine phylogenetic groups in uropathogenic and commensal Escherichia coli isolated. Also due to increase in the rate of antibiotic usage and subsequent drug resistance, this study was performed to evaluate the antimicrobial resistance pattern of E. coli isolated from patients with UTI. in this cross sectional study, 137 uropathogenic Escherichia coli isolates were collected from the clinical specimens of Zanjan hospitals and 50 isolates were collected from healthy adults in 2013-2014. After verifying isolates via biochemical methods and extraction of total DNA from them, Multiplex PCR was done by specific primers for phylogenetic grouping. The antimicrobial susceptibility of confirmed UTI isolates was determined by disk diffusion method against thirteen antibiotics. The distribution of UPEC phylogenetic groups typing was as follow: (68 %) B2, (20.7%) D, (11.3%) A and B1was not observed. Among the commensal samples (52%) belonged to phylogenetic group D, (24%) to B2, (14%) to A, and (10%) to B1.in this study the highest rates of resistance to antibiotics in UTI isolates were seen against ampicillin (74.45%) and aztreonam (59.12%). Also, the lowest rates of resistance were reported against imipenem (1.46%) and amikacin (10.95%). In conclusions the results indicate the higher prevalence of B2 and D phylogenetic groups in commensal and uropathogenic Escherichia coli strains in zanjan.

Keywords: Uropathogenic Escherichia Coli, Phylogenetic Groups, Antibiotic, Resistance, Commensal

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P174

Evaluation of the Organisms Isolated from Biological Fluids of Patients Hospitalized in Shahid Beheshti Hospital Medical University of Hamedan /West of Iran

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Introduction and Objective: Biological fluids from one example of regards section of the hospital to biochemical analysis and microbiologal study with attention to the importance of the issue and of sensitivity antibiotics organisms isolated from the fluids of the regards this study was done Research method this study of the first six months of 1393 was done. Descriptive study-an analysis. Biological fluid cultiveted in blood agar and maconky agar direct satainig & smear was done. This fluids included Wound. Sputum. Astitis fluid. Tracaul tube wound secration discussion and conclusions the results with the use of the spss software copies 16 assessment methods and test the two-to analysis data by using P< 0. 05 use of the total fluid 421 laboratory 165 samples positive related to 106 male patients (64%. 2) and 59 female (35. 8) The patients included 72(43.6%) patients admited to internal ward 70 patients(42.4%) in ICU parts and surgery 23(13.9%) these patients was 23(13.9%) under four years and 43(26.1%) patients between 40 to 60and the 99 patients (60 percent) were above age sixty years .organisem has been isolated including Acintobacter sp 50 (30.3%)Enterobacter sp 26(15.8%) E.coli 29 (17.6%) S.aureus 9(5.5%) s.non coaglase positive 18(10.9%) yeast 15 (9.1%) others 18(10.95) there was found significant relation between organisms and section of admited patients but no signification relation between sex and age and organism obsevation the most frequency organisms was Acintobacter and s.aureus was the least. The most antibiotic susebtibility in general werer to ciprofloxacine and gentamycine.

Keywords: Biological Fluid, Bacterial Culture, Antibiotic Susebtibility

P175

HPSAELISA Test for Demonstration of Helicobacter Pylori Infection in Childhood Recurrent Abdominal Pain (RAP) and Comparision of Symptoms among Children with and without Helicobacter Pylori Infection

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Background: Recurrent abdominal pain (RAP) is one of the prevalent gastrointestinal problems among children. Stool antigen test as a noninvasive test with high sensitivity are used to evaluate the Helicobacter pylori infection in children with stomachache and then the results of test are compared to children symptoms. Methods: this study in tow phase, first phase as cross sectional then second phase as case-control method was done between elementary school students in different districts of Ardabil city. In the first phase The schools were chosen through cluster sampling and those children with RAP confirmed by Naish and Apley's criteria were taken. The number of students examined was 1558. Among this population, 145 student has stomachache. In the second phase of study, 145 healthy children from the same area who had no clinical manifestations of RAP recruited as the control group. Both groups underwent stool antigen tests using Hp SA ELISA. The obtained data were analyzed by SPSS (version16), using chi-square and t-tests. Results: Stool antigen test evaluation in children with and without RAP showed that 85 person (58.6%) of children with RAP has positive test result. RAP characters survey showed that in children with positive Helicobacter pylori test, 61 person (42%) have 3-6 month duration of symptoms and 14 person (9.7%) 6-12 month. In the negative Helicobacter pylori test group,40 person (27.5%) has 3-6 month duration of symptoms and 6 persons (4.2%) 6-12 month, that there was no statistically significant difference between them. In the same way children was compared to location of stomachache, concomitant gastrointestinal symptoms, pain in hunger, abdominal pain subsiding after defecation, visiting physician after having abdominal pain and having interruption in daily activities due to abdominal pain, and there was no statistically significant difference between them. Discussion: As for study results in comparison of case and control group for Helicobacter pylori infection percent and no significant differences and conceder to high diagnostic power of used test, there are other reasons for RAP that it is necessary to evaluate them in other studies.

Keywords: Helicobacter Pylori, HPSAELISA Test, Recurrent Abdominal Pain

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P176

Survey of Fungal Contamination in Operating Room and ICU in Kashan Shahid Beheshti Hospital

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Introduction & aim: Recently using from therapeutic methods caused to save human line and fetal final with producing sever and resistant infections with the other hand. Fungal pathogens are considered as one of the risk factors to increase infection in Immune compromised patients. Thus, the aim of this study is, define kinds and level of fungal contamination in operating room and ICU in Kashan Shahid Beheshti Hospital. Methods: This retrospective research was carried out by open plate method, during summer of 1391. Sampling was done from environmental air and surface of instruments. Sabouraud's dextrose agar (SDA) was used for cultured of specimens. Result & discussion: In this study 78 plates were evaluated, 47.43% were positive. Totally, 190 colony of fungi isolated. Prevalence of them respectively including: Cladosporium spp 43.24%, Candida spp 40.54%, Penicillium spp 24.32%, Alternaria 18.91%, Aspergillus spp 13.51%, Fusarium spp and Rhodotorula spp 2.70%. With attention to above results, high prevalence of fungal contamination, it's needed to do some operations for controlling of this infective agents.

Keywords: Fungal Contamination, Operating Room, ICU

P177

Molecular Detection of Human Papillomavirus and Herpes Simplex Virus 1 and 2

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Background: Endometriosis is one of the most common benign diseases in women, characterized by the growth of endometrial-like tissue outside the uterine cavity. While many factors are involved in the development of this disorder the true etiology of endometriosis is unknown yet. The aim of this study was to investigate whether Human papillomavirus and Herpes simplex virus 1 and 2 are related with endometriosis. Materials and Methods: 40 formalin-fixed and paraffin-embedded endometriosis tissues, 23 normal uterus tissue from the same patients and 27 normal uterus tissues from individuals without endometriosis as controls were analyzed using polymerase chain reaction to evaluate the presence of the abovementioned infections. Results: The results showed that among the studied infections, Papilloma virus DNA was found only in one of the patient samples and in 4 (8/14%) of healthy subjects. In studying HSV infection, 5 samples (5/12%) of the endometriosis tissues, 2 samples (6/8%) of normal tissues from the patients, and 1 sample (7/3%) of healthy individuals were positive. Conclusions: findings of this research indicate that there is no significant association between papilloma virus, herpes simplex virus with endometriosis.

Keywords: Endometriosis, Molecular Detection, Papilloma Virus, HSV

P178

Bacterial Contamination of Medical Instruments, Health Care Workers and Patients' Environment in A Hospital in Tehran

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Introduction: The aim of the present study was to evaluate bacterial contamination of medical devices, health care workers and surroundings of patients hospitalized in intensive care units and other wards at Imam Hossein Hospital, Tehran. Material and Methods: A total of 180 moistened swabs were collected including 30 hand and clothes of health care providers, 40 medical instruments, and 110 environmental samples at intensive care units (ICUs) and other wards. The samples were cultured on selective media and the bacteria were identified by conventional and biochemical tests. Results: Forty (22.22%) of cultures were negative and 140(77.77%) had positive growth (some of samples had over than one growth). Among isolates, 35(23.65%) were gram negative and 113(76.35%) were gram positive bacteria. Acinetobacter baumannii was the most common isolates among gram negative bacteria and following Klebsiella pneumonia, Pseudomonas aeroginosa, A.lowfi, Enterobacter spp. and Burkholderia cepacia. Staphylococcus spp. was the most prevalent genus among gram positive isolates following Bacillus spp. The highest rate of bacterial contamination was found on the hand and clothes of staff (29;96.66%). Ninety four (85.45%) environmental samples and 17 (42.50%) medical instruments samples were positive. The highest rate of isolation of gram negative bacteria was found from medical devices. Discussion: Since A.baumannii was the most common among gram negative isolates and causes a spectrum of nosocomial infections, serious sterilization strategies must be implemented at environment, especially medical instruments and health care staff.

Keywords: Bacterial Contamination, Medical Staff, Medical Devices, Environment

P179

Evaluation of Resistance to Vancomyin Frequency among Enterococci Feacalis and Faeium Strains and Detection of Eep and ESP Virulence Factors Isolated from Genital Infection in Ahvaz Universal Hospital

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Introduction and aim: Drug resistance among Enterococci Faecium and faecalis strains are one of the genital infection in women. The purpose of this study was to evaluate vaginal infections caused by Enterococcus faecium and E. faecalis and also determine the level of resistance to vancomycin and other antibiotics effective in the treatment of infections in patients admitted to hospitals in Ahvaz. Material and methods: collected samples for6 month. Species of Enterococci were identified by biochemical and molecular tests. Sensitivity testing was carried out by standard disc diffusion method due to CLSI procedure. PCR was used for detection of vanA, vanB and vanC genes and eep and ESP virulence factors. Results and discussion: A total of 80 isolates of enterococci were isolated from vaginal samples containing 94.4 % Enterococcus faecalis and 5.6%, E. faecium. 2.5% of isolates were resistant to vancomycin and observed vanA genotype although vanB and vanC genes were not observed among the isolates. Respectively. Eep and esp all strains possess virulence factors The rates of resistance toantibiotics were as follows: tetracycline 12.5%, vancomycin 2.5% and chloramphenicol 5.6%. And All of them sensitive to Teicoplanin, linezolid, Gentamycin and Ampicilin. Increasing strains resistant to vancomycin resistance in enterococci with high-risk threat and limiting the treatment options for the patient.

Keywords: Virulance Factor, VanA, VanB, VanC

P180

Evaluation of Mycobacterium Tuberculosis and Resistant to Rifampin Using Genexpert

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Introduction and objectives: Identification and monitoring of multidrug resistant Mycobacterium tuberculosis strains (MDR) is highlighted by the high risk of their spreading in different areas. Prevalence of these strains was evaluated in Golestan province in northeast of Iran.in this study prevalence of mycobacterium tuberculosis and resistant to rifampin evaluated by Genexpert method. Method: The Xpert MTB/Rif test is a cartridge-based fully automated NAAT (nucleic acid amplification test) for TB case detection and rifampicin resistance testing, suitable for use in disease-endemic countries. 608 suspected cases of tuberculosis were evaluated by Genexpert in Golestan TB reference Laboratory Between 92 and 93. Result and Discussion: Of 608 samples, 298 (49%) sample were identified TB, Of these, 10 (3.3%) were resistant to rifampin. The length and the risk of culture and proportional methods, makes Genexpert method good candidate for the detection of tuberculosis and resistant strains.

Keywords: Genexpert, Mycobacterium Tuberculosis, Golestan Province

P181

The Level of Free Radicals in Egg-Yolk Infected by Common Food Pathogenic Bacteria

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Background: Bacteria in foodstuff are the most important agent of food-borne disease. Because in addition their infectious effects, obligate aerobes have respiratory metabolism with oxygen as the terminal electron acceptor. Therefore, they can produce reactive oxygen species (ROS) and free radicals in contaminated food. Malondialdehyde (MDA) is a product of lipid peroxidation which is used as an indicator of oxidative stress. The aim of this study was evaluated the level of free radicals that produced by two common food pathogenic bacteria in food stuff. Method: Hence, to achieve this purpose the egg yolks were inocubated with different dilution (105,106 and 107) of staphylococcus aureus and salmonella enteritidis at 37C for 20h. The level of MDA in egg yolk after incubation period, was measured by TBARS test. In this test, samples solution mixed with 20% trichloroacetic acid.Thiobarbituric acid was added to the supernatant and the samples were heated. The absorbance of the supernatant was measure at 532 nm and MDA was expressed in µg MDA/g. Results: The level of MDA of high group (107) was 1.974 (µg MDA/g) in staphylococcus aureus and 1.658 (µg MDA/g) in salmonella enteritidis as compared with control (0.909 µg MDA/g). Discussion: We concluded that common food pathogenic bacteria can induce oxidative damages in food staff addition to other problems, such as potent toxin production which is caused common food poisoning. Conclusion: Consequently, heating food or using methods of sterilization cannot protect food stuff from all of the damages caused by the presence of pathogenic bacteria.

Keywords: Bacteria, Free Radials, Lipid Peroxidation, Egg Yolk, Stress Oxidative

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P182

Human Adenoviruses: Are They Involved in Ophthalmic Pterygium Formation?

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Background and aim: Ophthalmic pterygium is a common benign lesion of unknown origin, and the pathogenesis might be vision-threatening. This problem is often associated with exposure to solar light. Recent evidence suggests that potentially oncogenic viruses such as human papillomavirus and Epstein-Barr virus may be involved in the pathogenesis of pterygia. Objectives: For the first time, we aimed to investigate the involvement of adenoviruses in pterygium formation. Patients and Methods: In all, 50 tissue specimens of pterygium from patients undergoing pterygium surgery (as cases), 50 conjunctival swab samples from the same patients, and 10 conjunctival biopsy specimens from individuals without pterygium such as patients undergoing cataract surgery (as controls) were analyzed for evidence of adenovirus infection with polymerase chain reaction using specific primers chosen from the moderately conserved region of the hexon gene. Furthermore, β-globin primers were used to access the quality of the extracted DNA. Data were analyzed using SPSS (version 16) software. Results: Of the 50 patients, 20 were men and 30 women with mean age of 61.1±16.9 years ranged between 22 and 85 years. All samples of pterygia was positive for adenoviruses DNA with polymerase chain reaction, but none of the negative control groups displayed adenoviruses. The pterygium group and the control groups were β-globin positive. Conclusions: The current results suggest that adenoviruses might act as a possible cause of pterygium formation and other factors could play a synergistic role in the development. However, further larger studies are required to confirm this hypothesis.

Keywords: Human Adenoviruses, Pterygium, PCR, Iran

P183

The Bactec 9050 Blood Culture System Usage in Diagnosis of Brucella Bacteremia in Kashan Shahid Beheshti Hospital

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Background and Objective: Brucellosis is a zoonosis infectious disease and endemic in Iran. The certain diagnosis of disease is established by isolation of brucella from blood and other normally sterile body fluids. So because of it's fastidious nature of this organism and problems of isolation in conventional methods, and attending to the high prevalence of brucellosis in Kashan, in this survey the BACTEC 9050 blood culture system has been used for diagnosis of brucella bacteremia and the advantages of this method has been discussed. Materials and methods: In this descriptive research the blood of 206 suspected patients to brucellosis in BHI broth and BACTEC 9050 blood culture system have been studied simultaneously. Results: out of 206 samples, 50 cases were positive that from which 32 cases were positive for both methods and 18 cases were positive for BACTEC, but the conventional culture in period of 5 days was negative. Continuing the incubation, 14 cases get positive but 4 cultures, were negative again, even after 30 days. The incubation period which is needed for specimens to get positive is estimated to 4 days. Conclusion: 1.The BACTEC automatic system has reduced the examination process, economizes the time and the material. 2.In case that this system was not available for diagnosis of brucella, it is recommended to keep the final subcultures for 1 month in 37 °C for more survey. 3.use of molecular method is suggested because of more sensitivity and specificity, shorter result period.

Keywords: Bactec, Bacteremia, Brucellosis

P184

Phenotypic and Molecular Assessment of Antibiotic Resistance Pattern in Uropathogenic Escherichia Coli Isolated from in Shahrekord City

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Introduction: Antibiotic resistance has been called one of the world's most pressing public health problems. Virulent strains of E. coli can cause gastroenteritis, urinary tract infections,nosomical and neonatal meningitis. Plasmid encoded beta-lactamase is responsible for the emergence of resistant strains of Enterobacteriaceae including Ecoli. Antibiotic resistance is a serious and growing phenomenon in contemporary medicine. If a microbe is resistant to many drugs, treating the infections it causes can become difficult or even impossible. Marerial and methods: A total of 130 E. coli isolates from urinary tract infection affected patient obtained from Imam Ali Lab, Shahrekord, were used in this study. Isolates were confirmed by chemical tests and molecular techniques based on tracking of 16srRNA gene.Antimicrobial resistance assessment of isolates were done using molecular methods base on (qnr, tet A, tet B, aac (3) IIa, sul1) and disk diffusion. Results: Out of 130 isolates 73were resistant to tetracycline (tet A% 80.82, tet B %75.34),of 68 isolates were resistant to Nalidixic acid%11.76,of 54 isolates were resistant to norfloxacin %14.81 and of 48 isolates were resistant to ciprofloxacin%14.58 qnr gene. Of 67 isolates were resistant to Co-trimoxazole %20.89 sul1 gene and of 23 isolates were resistant to gentamicin %86.95 aac(3)IIa gene. Conclusion: Early detection of resistant strains in order to select the most appropriate treatment options is essential to prevent the spread of resistance. It is suggested, as treatment for urinary tract infections is important, so to prevent drug resistance and treatment failure, it should be done according to the resistance pattern in the region.

Keywords: Drug Resistance, Ecoli, PCR, Phenotyping Tests, UTI

P185

Prevalence of Clostridium Difficile – Associateddiarrhea in Zahedann Hospitalized Patients

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Introduction: Nosocomial diarrhea in an important recognize cause of morbidity, mortality and cost for hospital in the developed and developing countries Clostridium difficile is a frequently identified cause of nosocomial gastrointestinal disease. It has been proved to be a causative agent in antibiotic-associated diarrhea. This study was aimed to determine the prevalence and risk factors of Clostridium difficile-associated diarrhea (CDAD) in hospitalized patients with nosocomial diarrhea in Zahedan , Iran. Materials and Methods: In this study from 100 stool samples of patients with nosocomial antibiotic associated diarrhea that were admitted in to the intensive care units (ICUs) (41), surgery (62) and organ transplantation wards (16) in emam ali, khatam,bu ali hospital were collected. All stool samples were cultured on a selective Cycloserine Cefoxitin Fructose Agar and grew isolates were analyzed by enzyme immune assay for detection and conformation of toxins. Results: from a total of 100 fecal samples, 9 samples were positive of which, 6 strains were A+B+, 2 strains were A+B-, and 1 strain was A-B+. Conclusions: Hospital transmission of C. difficile commonly occurred, supporting infection-appropriate measures directed toward the reduction of CDAD.

Keywords: Toxin, Clostridium Difficile, Diarrhea

P186

The Prevalence of Microorganism in Urinary Tract Infection in Infant Refer to Hospitals in 2012-2013 in Zanjan

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Introduction: Urinary tract infection are the second most common type of body infection. The present study was designed to determine the Prevalence of microorganism in Urinary Tract Infection in infant refer to hospitals in 2012-2013 in zanjan. Material and method: for this descriptive study, a total of 603 urine samples were examined during a 12-month period. They were all cultured in EMB, BA, and different madia. Antibiogram profile of the bacteria was determined by disk-diffusion test (Kirby-Bauer) according to NCCLS standards Results: from 603 urine samples were examined, 295 were positive culture with different microorganism. In our study e-coli (66%), staff (17%), enterobactre (12%), Klebsiella (5%), are common bacteria in UTI respectively .Sensitively in antibiograms was for Nalidixicacid, amikacin, Nitrofurantoin was seen. Conclusion: study show that ecoli is the most common microorganism that causes UTI in infant. So we should determine antibiotic resistance and sensitivity of it.

Keywords: Infant, UTI, Staff, Kelebsiella, E-Coli

P187

An Epidemiologic Survey on the Prevalence of Giardiasis among Inhabitants of Villages Around the Bokan City in 2014

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Background & Objectives: Giardia lambelia is an intestinal protozoan parasite in human and vast range of vertebrates which has great importance in medical parasitology and general sanitary in developing countries. Regarding the importance of epidemiologic studies as the first step of recognizing and controlling parasite contamination and nonexistence of attributable documentary information about the Giardia lambelia amount of contamination among rural people around the Boukan city, carrying out this study was necessary. Methods and Materials: This is a cross sectional study that has been done partly on 419 inhabitants of villages around the Boukan city who referred to the laboratory of hygiene center of Boukan from 11.21 until 04.21.2014. In this study, demographic parameters were registered and analyzed by SPSS V.21. Stool specimens were examined microscopically for the presence of Giardia lambelia cysts and trophozoites with using direct and formalin-ether concentration methods. Results: According the results, the amount of Giardiasis was 11.67%. Age and education level had a significant relation with Giardiasis ($P<0.05$) while job, sex and symptoms showed no significant relation with Giardiasis ($P>0.05$). Conclusion: In recent decade, with the promotion of awareness, and public health and facilities in urban areas and along the rural population, the prevalence of Giardiasis is also diminished. With continuing education and health assessment, especially in children, elderly people and also immunodeficiency or immunocompromised peoples, we can monitor the infection and treat at risk population and prevent the outbreak of Giardiasis in in the shortest possible time.

Keywords: Bokan, Epidemiologic Survey, Giardiasis, Village

P188

Evaluation Effect of Leaf Extract of Rosmarinus Officinalis against Herpes Simplex Virus Type 1 Replication in HeLa Cell Line

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Introduction: Herpes simplex virus type I belongs to herpesviridae. Several studies are ongoing for achieve a drug with good effectiveness and lower side effects, because the incidence of infections caused by this virus is increasing and there is some HSV resistance in the world. In this study, anti-viral effects of rosemary extract against of HSV was evaluated in cell culture. Material and methods: At first the rosemary extract toxicity on Hela cells with Trypan Blue and MTT methods has been examined and the maximum range of non-toxic concentration on cells has been achieved. At next stages of study different periods of virus replication have been evaluated. Virus titer with TCID50 method has been measured. Results: Results show, 0.6 µg/ml concentration of rosemary extract is non-toxic on Hela cells and has the maximum effect to prevent HSV-1 replication. The maximum effect of extract has been showed is on immediately after virus adsorption and 1hour after cells infection. In this condition virus titer has decreased compared to other times of virus replication. Conclusion: In accordance with results of this study, herbal basic materials perform their anti-virus effect through interfere with Alpha and Beta genes expression.

Keywords: Rosemary, Herpes Simplex Virus Type 1, HeLa Cell

P189

Evaluation of Virucidal Effect of Ascorbic Acid on Herpes Simplex Virus Type 1

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Objective: Herpes simplex virus type 1 (HSV-1) is a member of herpes viridae. Acyclovir is a selective drug for treatment of HSV infections. There are many reports about mutants resistant to acyclovir and its side effects, therefore researchers are trying to find novel antiviral drug from natural compounds without side effects and lower cost. In this study anti viral effects of ascorbic acid were evaluated on HSV-1 and its replication in cell culture. Materials and Methods: The toxicity range of ascorbic acid was evaluated on Hela cell with Trypan blue and MTT methods.Antiviral effects of the ascorbic acid on HSV-1were assessed at different concentrations and different times.Virus titer with TCID50 method has been measured. Results: 4mM concentration of ascorbic acid was lack of toxicity on Hela cells and this concentrations and lower than had not the inhibitory effects on HSV-1 replication. 50 mM concentration of ascorbic acid in medium has the greatest virucidal effect on HSV-1. After 48 hour of virus treatment with 50 mM of ascorbic acid, virus titer was reduced from 105.5TCID50 in medium without the ascorbic acid to 102.5TCID50in medium contained ascorbic acid. Conclusion: Based on the results can conclude that ascorbic acid has not any inhibitory effect on HSV-1 replication inside the cells but it have virucidal effect out of the cell. Virucidal effects of ascorbic acid depends on concentration and time of virus treatment.

Keywords: Ascorbic Acid, Herpes Simplex Virus Type 1

P190

Effect of lactoferrin against Human Pathogens

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Introduction: Lactoferrin (LF) is an 80 kDa iron-binding glycoprotein of the transferrin family that is expressed in mostbiological fluids and is a major component of the mammalian innate immune system.Lactoferrin, an ironbindingprotein with multiple physiological functions (anti-microbial, anti inflammatory, andimmunomodulatory), It contains various antimicrobial peptides which are released upon its hydrolysis by proteases. Material and methods: Lactoferrin were purchased from Sigma Chemicals The purity of proteins was checked by SDS-PAGE, The Powder Lactoferrin were individually tested against two Gram-negative bacteria. The bacterial colony counting assays were conducted according to the Clinical and Laboratory Standards Institute (CLSI) and ASTM G22-76. Result: lactoferin are effective against both Gram-positive and gram-negative bacteria while they are more effective to Gram-positive bacteria rather than to Gram-negative bacteria. Conclusion: lactoferin, asa consequence of their capacity to reduce bacterial growth, as demonstrated here by us andothers, and to inhibit bacterial adhesion and biofilm formation, should be considered as usefulantimicrobial therapeutic agents.

Keywords: Lactoferin, Antibacterial, Iron-binding Glycoprotein

P191

Diagnosis of Burdetella Pertusis & Para Pertusis from Collecting Sample Hospitals Qazvin Province in 3 Times & Comparison with Together

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Introduction & aims: The etiologic agent of whooping cough or pertussis is a gram negative bacilli named Bordetella. B.Pertusis is a human phatogen incriminated in the majority cases of whooping cough. A common child hood infection B.Parapertusis is also occasionally found in whooping cough (these organisms colonize mucous membranes of throat and nasophary, area and by producing various toxins) the characteristic clinical manifestation of the disease predominatly coughing and cyanosis starts. Choronic stages of disease lasts for several days to weeks. The aim of this study was epidemiologic survey on clinical specimens collected from hospitals Qazvin province in 3 times & comparison with together. Metod &Materials: In a retrospective descriptive cross sectional study by Dacrons samples taken from nose of children a mean age 3.0 years in 3 times A:1391 B:1390 C:1389. The swabs transferred to transport media and send to the Pasteur Ins. Result: In 1391from 47 samples totally 2 cases were positive PCR with culture in 1390 from 30 cases 1 case was positive PCR with 1 positive culture for B.Pertusis and in 1386 to 1387 from 38 samples totally 1 case was positive. Conclusion: comparison between 3 period were not difference. Therefore mass vaccination for pertussis (DPT) during last decades results total control in children in adults, and youngest how ever the disease could be observed sporadically that may transmit to neonants and predisposed childs.

Keywords: B.Pertusis, Whooping Cough, Neonants, Vaccination

P192

Identification of the Mec-A and Antibiotic Resistance Pattern in Staphylococcus Aureus Isolated from Clinical Samples Obtained from Skin Wounds and Urinary Tract Infections in Esfahan Hospitals

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Identification of the mec-A and antibiotic resistance pattern in staphylococcus aureus isolated from clinical samples obtained from skin wounds and urinary tract infections in Esfahan hospitals. Fahimeh Nourbakhsh I Vajiheh Nourbakhsh II I M.Sc., department of microbiology, Islamic Azad University, shahrekord Branch, Shahrekord, Iran. II B.A., nurse of Fatemeh Zahra hospital, related to management of remedy, social security of Esfahan. Abstract Background and objectives: staphylococcus aureus is one of the important etiology of contagious infections in community and hospital with high capability to create various antibiotic resistance. Today antibiotic resistance increase because of willfully obstinate consumption of drug. This study was conducted to track the antibiotic resistant pattern and mec-A gene in staphylococcus aureus strains isolated from clinical specimens obtained from urinary tract infections and skin wound. Material and methods: in this cross-sectional study 100 staphylococcus aureus collected from urinary tract infections and skin wounds of patients in Esfahan hospitals. This strain was selected using laboratory standard methods and culture specific. The antibiotic susceptibility testing was performed using disk diffusion on plate. Furthermore, the presence of mec-A gene was investigated using PCR method. Results and conclusion: according to phenotypic investigation on antibiotic resistance in S.aureus strains, the highest rates were seen in treatment with penicillin 95/1%, methicillin 92/3%, tetracycline 78/8%, ampicillin 65%, while the lowest sensitivity was observed in treatment with nitrofurantoin 10/8, and vancomycin 11/2%. Molecular investigation show that 89/7% of mec-A in clinical specimens related to methicillin resistance in S.aureus strains. Our result showed high rates of antibiotic resistance in the S.aureus isolated from the Esfahan hospitals. It is recommended to limit the limit the antibiotic uses without prescription or in unnecessary cases uses.

Keywords: Methicillin Resistance, Staphylococcus Aureus, Clinical Specimens Isolated From Skin Wounds And Urinary Tract Infections Isolated From Esfahan Hospitals

P193

Antibiotic Resistance Patterns of Escherichia Coli Isolates from Urine Samples of Patients Referred to Gerash Amiralmomenin Hospital

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Background: The most common cause of urinary tract infection is Escherichia coli (E.coli). According to several reports indicate that antibiotic resistances in urinary tract infections are caused by E.coli. This study aimed to determine the prevalence of antimicrobial resistance in patients admitted to Gerash Amiralmomenin hospital. Materials and Methods: In this study, all samples from patients with urinary tract infections that referred to Amiralmomenin hospital in March of 2012 until March of 2013, were examined. On sample that E.coli bacterium was caused of infection antibiotic susceptibility testing was performed. The data collected were analyzed by using SPSS 16 software. Results: A total of 7083 urine samples for culture were studied which 633 positive cultures obtained. Among these 262 (33.41 %) E.coli strains were isolated. The isolates showed high levels of resistance to ampicillin (93.5 %), nalidixic acid (42.25 %), cotrimoxazole (39.75 %), cefazolin (37 %), cephalexin (35.4 %), cefixime (24.54 %), ceftriaxone (22.34 %), ciprofloxacin (18.2 %), gentamicin (14.5 %). The isolates were highest sensitive to ciprofloxacin (76.8 %), ceftriaxone (74.75 %), Ceftizoxime (74.1 %), cefixime (73.66 %) and cotrimoxazole (56.13 %), gentamicin (53.5 %) , nalidixic acid (47.75 %) and ampicillin (4.33 %) patients. Discussion: Our study showed that it is better using of antibiotic such as ampicillin and nalidixic acid in first-line of treatment in urinary tract infection be confined.

Keywords: UTI, E.coli, Antibiotic Resistance, Gerash

P194

Evaluation of Antiviral Effects of Hyssopus Officinal Extract against Herpes Simplex Virus Type1

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Objective: Herpes simplex virus type 1 (HSV-1) is specific to human which causes the cold sore and various disease in other parts of the body such as mouth, eye and central nervous system. One of the chemical drugs such as acyclovir is used to treat HSV infections. Some strains of the virus have been resistant to acyclovir. The main aim of this study was to determine the antiviral effect of hyssopus officinalis extract on the HSV-1. Materials and Methods: The toxicity range of hyssopus officinalis extract was evaluated on Hela cell with Trypan blue and MTT methods. Antiviral effects of the plant extract on HSV-1 was assessed at different concentrations and different times. Virus titer with TCID50 method has been measured. Results: 0.6 µg/ml concentration of hyssopus officinalis extract was lack of toxicity on Hela cells and this concentration had the highest inhibitory effect on HSV-1 replication. As well as the maximum inhibition effect of extract was observed at the adsorption time and 1 hours after infecting the cells and virus titer was reduced significantly. Conclusion: Based on the results of this study we can conclude that the active ingredients of plant apply its antiviral effect during the attachment, penetration stages and inside the cell and in early hours of the virus replication.

Keywords: Hyssopos Officinalis Extract, Herpes Simplex Type 1

P195

Evaluation Epidemiology Malaria Disease in 1386-1392 in Qazvin

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Determinate rate of outbreak ill in population under cover native and nonnative based on place of resident in rural and urban area-age-sex group-past travel to pollute area. Findings: of total 52441stented sample in years 1386-1392 number of sample become recognize as certain sample that rate of outbreak in population under cover until years 86=3.33,87=1.99,88=1.99,89 =1.02,90=0.34, 91=0.2 ,92=0.4 was in 100000 population. Rate of outbreak in urban areas was %41.44, in rural area %53.55 and age group up to 15 year was %97.38, age group 5-14 years was %582 and age group 0-4 year was 0.1,In sex group in women was %14.11 and in men was %89.88. % 93.66 samples relate to Afghanistan people that consist of travel past 1-2 month before of beginning ill sign to polluted area Afghanistan and time of enter to Iranto unfit care. Result: with attention to finding %95.5 sample, enter of Afghanistan country that enter to our country by illegal and resident in country already with attention to Epidemic condition and Ecology Afghanistan country must especial rule represent for Afghan migrators in inter border voluntary with cooperative ministry interior. Until care groups in form of active under control polluted sample to parasite and treat with malaria drugs. Also necessarily to attention and represent thinking direct of prevent of enter Afghan people to country by planning attendant is important.

Keywords: Plasmodium, Epidemiology, Ecology, Malaria, Qazvin

P196

Seasonal Variation of Intestinal Parasitic Infections among Patients with Gastrointestinal Disorders in Nahavand City, West of Iran

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Introduction: Intestinal parasites infection is the important health problems among different societies, particularly in tropical and subtropical regions. Achieving a better understanding of the distribution of intestinal parasites infection and season variation, this study was carried out among patient suffered from gastrointestinal disorders in Nahavand County, located in Hamadan province, west of Iran. Methods: A total of 1301 stool samples were collected from patients with gastrointestinal disorders during spring/summer 2014. The stool specimens were examined macroscopically, and microscopically by using direct smear with saline normal and lugol staining, formaldehyde - diethyl ether concentration, Trichrome staining and a modified version of the Ziehl-Neelsen staining technique. The results were analyzed using SPSS version 16. Results: 419 (32.2%) of the referred individuals were infested with intestinal parasites. 25.8 % (139 of 538 referred in spring) and 36.7 % (280 of 763 in summer) were infected. Prevalence by age was 22.7%, 38.3 %, 37.9 %, 39.2 %, and 39.8 % among patients with ≤15, 16-30, 31-45, 46-60 and>60 years old respectively. According to our finding there was significant relationship between prevalence of intestinal parasites infection by season & age (value of p = < 0.001) in patient with gastrointestinal disorders in Nahavand county. Prevalence by location was 31.5% (188 of 597) and 33 % (218 of 660) in urban and rural regions respectively. Prevalence by sex was 33.9 % (231 of 682) and 30.4 % (188 of 619) in male and female patients respectively. There was no different relationship among intestinal parasites by location and gender value of p was 0.601 and 0.197 respectively. Conclusion: In this study, we found that the Seasonal variation and age are two effector factors of the prevalence of intestinal parasites infection.

Keywords: Intestinal Parasites Infection, Seasonal Variation, Nahavand, Iran

P197

Identification of Bordetella Pertussis and Parapertussis in Patients with Suspected Whooping Cough by PCR

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Background and Objectives: Whooping cough is a worldwide infectious disease caused by the bacteria Bordetella pertussis and Bordetella parapertussis. Both species are responsible for outbreaks of whooping cough in human and can be distinguished based on a number of biochemical and genomic characteristics. Although the disease incidence is highest in children under five, it can occur in all age groups. In this study we evaluated respiratory samples from patients with suspected whooping cough for diagnosis of Bordetella pertussis and parapertussis. Material and method: In this study, Nasopharyngeal and throat swabs were collected from 64 patients referred to Payvand Clinical and Specialty Laboratory during years 2010-2014. DNA was extracted from the samples and Real-Time PCR was performed for detection of Bordetella pertussis and Bordetella parapertussis. Results: The results showed the highest frequency of disease in 0-5 age group. From 64 cases, PCR results were positive in 11 cases (17.18%) where 9 cases (14.06%) were positive for Bordetella pertussis, and 2 cases (3.12%) were positive for both Bordetella pertussis and parapertussis. The results were also revealed a similar incidence in both sexes. Conclusions: Considering the higher sensitivity and earlier availability of PCR test result, prevention diagnosis strategies using PCR technique can be significantly improved for detection of Bordetella pertussis and Bordetella parapertussis in patients with suspected whooping cough.

Keywords: Bordetella Pertussis, Bordetella Parapertussis, PCR

P198

MALDI-TOF Mass Spectrometry for Identification of Fungi in the Clinical Laboratories

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Introduction and Aim: The identification of fungi in the clinical laboratory is classically based on macroscopic and microscopic examination of the colonies grown on mycological culture media. It is a slow and complex process requiring highly skilled mycologists, and misidentifications may occur, even in experienced reference laboratories. Matrix-assisted laser desorption/ionization (MALDI) time-of-flight (TOF) mass spectrometry (MS) has developed during the past years into a versatile tool for analyze biopolymers such as DNA, proteins, peptides and sugars and large organic molecules such as polymers and other macromolecules -by means of simple, rapid and reproducible preanalytical and analytical protocols. It is a two step process that include desorption and ionization process and It made of matrix, Laser, detector and mass spectrometry. These spectra can be compared to a reference database for rapid and accurate taxonomic classification of unknown organisms at the genus, species, and, in some instances, strain levels. The aim of this review is summarize this development and outline the applications, which could be used for identification of fungi. Method: A comprehensive literature search of publish studies from 2001-2015 in databases regarding MALDI-TOF mass spectrometry. Result and discussion: This method allows a highly discriminatory identification species of yeasts and filamentous fungi such as Candida, Cryptococcus, Penicillium, Fusarium, Aspergillus, dermatophytes, Mucorals and other fungi. The recent development of MALDI-TOF MS platforms promises to bring this technology into the clinical microbiology laboratory, where it will complement, and in some cases, replace conventional biochemical and phenotype-based methods.

Keywords: MALDI-TOF Mass Spectrometry, Fungi, Dermatophyte

P199

Antimicrobial Impact of Hibiscus Sabdariffalextract against Acinetobacterbaumannii

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Introduction: Antibiotic resistant to Antimicrobial agent is one ofthe most important concern in hospitals, which can cause lots of costs, treatment fails and mortality rates. The purpose of current study was to define the evolution of antimicrobial impact of flower extract of Hibiscus sabdariffal againstAcinetobacterbaumannii. Material and Method: Acinetobacterbaumannii is a type of pathogenic bacteria determining the antibacterial effect of Hibiscus sabdariffalleafusing broth microdiluation method. Result: The result revealed that the levels of MIC range were from 6.25 to 25ppm. The highest MIC value was 6.25 ppm againstA. baumannii.

Keywords: Antibacterial Activity, Hibiscus Sabdariffal Extract, Acinetobacterbaumannii

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P200

First Report of Entamoeba Moshkovskii by Single-Round PCR in Lorestan Province

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Introduction: Differential diagnosis of E. histolytica/E. dispar/E. moshkovskii has great clinical and epidemiological importance. Cyst and trophozoite of Entamoeba moshkovskii are morphologically indistinguishable from Entamoeba histolytica. One of the most important advantages of this differentiation is avoiding unnecessary treatment with anti-amoebic chemotherapy and decreasing economic cost, side effects and drug resistance. Materials and methods: A total of 862 stool samples were collected from patients having gastrointestinal symptoms who were referred to the health care centers. The stool samples were examined microscopically by using direct slide smear, lugol's iodine, formalin–ether concentration, and trichrome staining. The suspected samples were stored at -20°C. Genomic DNA was extracted directly from stool specimens were microscopically positive. Then single–round PCR and specific primers were used. Results: Out of 862 stool specimens, 16(1.86%) samples showed the presence of E. histolytica/E. dispar/E. moshkovskii cysts by microscopic examination. A case of 16 samples were positive for E. moshkovskii using single–round PCR. Discussion: Because of morphological similarities of E. histolytica/E. dispar/E. moshkovskii using single–round PCR which is a specific method, and also using direct DNA extraction of stool specimen which is an easy, fast and specific method is suggested for routine diagnosis of infection and epidemiological studies.

Keywords: Entamoeba, Single–Round PCR, Lorestan

P201

Survey of Cutaneous Leishmaniasis in Kalaleh City, Golestan Province 2013-2014

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Introduction: Cutaneous leishmaniasis is an endemic disease in the tropical and neotropical region. There is a wide clinical aspect of cutaneous leishmaniasis ranging from small cutaneous nodules to gross mucosal tissue destruction. Golestan province is an endemic area for Cutaneous leishmaniasis in Iran. This study was undertaken to assess the prevalence of cutaneous leishmaniasis in Kalaleh city in Golestan province for first time. Materials and methods: This cross sectional study was conducted over a period of 12 months, from November 2013 to November 2014 Smears were prepared from scrapings of the edge of the ulcer, then fixed in methanol, stained with Giemsa, and examined under a light microscope for the presence of amastigotes. Results: From 61 suspected patients, 31 cases (51%) were positive for Leishmania amastigotes by microscopic examination. The scar rate was 22.8% for individuals under 10 years of age and 31.9%for those over10 years of age. There was a significant difference between males and females. Conclusion: High rate of cutaneous leishmaniasis in Kalaleh city could be of concern for health authorities and prevention method should be implicated in this region.

Keywords: Cutaneous leishmaniasis, Survey, Kalaleh City

P202

A Comparative Survey of Stratum Corneum Free Amino Acids in Patients with Dermatophytosis and Normal Subjects

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In the framework of a survey on the comparative changes of free amino acids in stratum corneum in 60 patient with dermatophytosis in two site one , near skin lesion and two , sole area and 60 healthy volunteers(normal subjects), at sole area were done. method: Amino acid in stratum corneum analyzed by HPLC method and the identification of dermatophytosis was based on direct examination and culture. The results of research statistically were analyzed by software and comparison of mean by using the T- TEST. results: Achieved results between case and control in sole area have shown that cases were significantly increased in amino acids: Aspartate - Tyrosine –Tryptophane - Phenylalanine and were significantly decreased in amino acids: Citrulline– Ornithine Similarly, in two sex male and female. Achieved results have shown that people with dermatophytosis in two site near skin lesion and sole area distribution in associated were significantly increased in amino acids: Glutamates - Asparagine - Histidine - Glutamine - Arginine - Citrulline - Threonine - Methionine - Leucine – Ornithine and were significantly decreased only in amino acid: Glycine.

Keywords: Dermatophyte, Stratum Corneum, Free Amino Acids

P203

Hope For the Treatment of Resistant Nosocomial Infections Using Conventional Antibiotics

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Introduction and aims: Resistant strains of Pseudomonas aeruginosa, Klebsiella pneumoniae and Acinetobacter baumannii cause high annual hospital mortality. The aim of this study was to standardization of their resistance patterns according to new definition presented by CDC and ECDC in 2011 and finding of effective antibiotics against them. Materials and methods: In a cross-sectional study samples of the isolates were collected from four hospitals in Isfahan city. Susceptibility test were done in Pseudomonas aeruginosa, Klebsiella pneumoniae and Acinetobacter baumannii isolates using 17 different antibiotics (8 class), 31 antibiotics (17 class) and 22 antibiotics (9 class) respectively. Analyzing of data was done using WHOnet 5.6 software. Result: For each type of bacterium 100 separate strains were isolated and susceptibility test showed that effective antibiotics against Klebsiella pneumoniae were colistin, tigecycline, chloramphenicol, and minocycline with 95.2, 93.7, 87.3 and 60.3 percent susceptibility respectively. For Pseudomonas aeruginosa strains effective antibiotics were polymyxinB, colistin and fosfomycin with 98.5, 96.9 and 89.2 percent susceptibility respectively and for Acinetobacter baumannii were polymyxinB and colistin (98.1% susceptible), minocycline (74.1% susceptible) and ampicillin-sulbactam (70.4% susceptible). Discussion: The isolated bacteria were remarkably sensitive to some conventional antibiotics and this research indicating revival of the old-generation antibiotics and the hope for the treatment of resistant bacteria using them and so they recommended for routine antibiotic sensitivity testing.

Keywords: Antibiotics Resistant, Pseudomonas Aeruginosa, Klebsiella Pneumoniae, Acinetobacter Baumannii

Iranian Association of Clinical Laboratory Doctors

Research in Laboratory Sciences: Diabetes P204 - P211

P204

Evaluation of HbA1c Results in Whole Blood and Dried Blood Spot Samples

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Background: Appropriate control of diabetes can be prevented of complications from this disease so Hemoglobin A1c (HbA1c) has been used in the monitoring and treatment of diabetes .Due to limitations in HbA1c test, especially in developing countries,Patient samples that collected on Standard filter paper ,Provided the ability of keeping samples for long time and, if necessary, Transport the samples to other laboratories easily.LPLC method for HbA1c analysis of dried blood spot (DBS) samples have been described in the literature. This article describes use of DS5 system to measure HbA1c in samples collected and dried on filter paper. Methods: 75 whole blood samples were obtained by venipuncture and collected in ethylene diamine tetra acetic acid- preserved collection tubes. Filter paper that used for these studies was Whatman grade 903. The paper conforms to the CLSI LA4-A4 standard for use in neonatal screening program and has been approved as an acceptable blood spot collection paper. Dried blood spot samples were prepared by spotting 20 µl of whole blood onto the paper (5 spots from each sample)and drying at room temperature for at least 4 hours .Whole blood specimens were tested by DS5 system and HbA1c results were recorded. for validation of method , Commercial control were used in each run. Dried blood spot samples were prepared for analysis by cutting two, 1/8-inch diameter punches from each DBS. The punches were placed into a 12 × 75mm test tube and eluted for 3 hours at room temperature (20–25°C) with 1000 µl of DS5 hemolyzing reagent. Samples were mixed gently without removing the disks, and analysis was performed directly from the test tube. Results: HbA1c concentration range of samples that were tested is 4.5% to 12.9% . The mean concentration in whole blood samples is 7.9507%. The mean concentration in DBS samples is 7.9640% . Statistical comparison of results was performed by SPSS software and The results indicate a high correlation between samples is evaluated.

$r = 0.993$ $r^2 = 0.986$ $Y = 0.947 X + 0.434$

According to the analysis results (P=0.6296), Difference in HbA1c levels in whole blood and DBS samples were not significant. in NGSP standard , Acceptable range for the results of the comparison between two methods , is +-7.5% and Difference between the results obtained in this study were in the acceptable range.

Keywords: Dried Blood Spot, DBS, Hba1c, Diabete

P205

Therapeutic Effects of Tretinoin on Blood Glucose Levels in Streptozotocin-Induced Diabetes in C57BL/6 mice

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Background: Type 1 diabetes is a T-cell mediated autoimmune disease characterized by the selective destruction of insulin producing β -cells in the pancreatic islets of Langerhans. Tretinoin have a variety of biological activities, including immunomodulatory action in a number of inflammatory and autoimmune conditions. The purpose of this study was to investigate the therapeutic effects of Tretinoin serum glucose levels of insulin in streptozotocin-induced Diabetes in C57BL/6 mice. Methods: Diabetes was induced by multiple low-dose of streptozotocin (MLDS) injection (40 mg/kg/day for 5 consecutive days) in male C57BL/6 mice. Mice were considered diabetic when their fasting blood glucose levels were >250 mg/dl. Subsequently, the mice were allocated to three therapeutic groups (n=7 per group) (Normal control group, MLDS group and Theratment group). In theratment group, mice were treated with Tretinoin (20 mg/kg/day i.p.) for 21 days. Fasting blood glucose level was measured in 0, 7, 14 and 21 days after final Streptozotocin induced diabetes by using a glucometer (Accu-Chech Active). Results: Serum glucose levels were significantly increased ($p<0.05$) in MLDS group in comparison with other groups. Administration of Tretinoin for 21 days reduced hyperglycemia ($P<0.05$). Plasma glucose concentration in control group remained unchanged and was normal throughout the study. Conclusion: Our data suggest that Tretinoin may possess immunotherapeutic effects on type 1 diabetes.

Keywords: Type 1 Diabetes, Tretinoin, Cytokine

P206

Effect of Garlic Aqueous Extract (Allium Sativum) On Semen Parameters in Streptozotocin Induced Diabetes in C57BL/6 Mice

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Introduction and objective: Garlic has been used worldwide since ages, especially as food and for its health benefits. Diabetes mellitus mediated by oxidative stress creates serious metabolic disorders in testicles.The purpose of this study was to investigate the effects of garlic extract on semen parameters of experimentally induced type 1 diabetes in male Mice. Methods: Diabetes was induced by multiple low-dose of streptozotocin (MLDS) injection (40 mg/kg/day for 5 consecutive days) in male C57BL/6 mice. Mice were considered diabetic when their fasting blood glucose levels were >250 mg/dl. Subsequently, the mice were allocated to three therapeutic groups (n=7 per group)(normal control group, MLDS group (diabetic control group) and treatment group). Treatment with garlic aquous extract (400 mg/kg/day for 21 days, by gavage) was initiated in treatment group when they were considered diabetic. Mice were euthanized on day 21 and testes and epididymis were removed for sperm evaluation. Quantitative data were analyzed by student t-test in SPSS software. Results and Conclusion: Diabetes mellitus mediated oxidative stress and free radical production, significantly decreased sperm parameters and treatment with garlic aquous extract, improved this effects. The garlic aquous extract increases motility, viability, sperm count and sperm DNA integrity ($p<0.05$). These results suggest that aqueous garlic extract have a potent antioxidant protection in the testes of mice against the type 1 diabetes -induced oxidative stress.

Keywords: Garlic, Sperm Parameters, DNA Integrity, Type 1 Diabetic Mice

P207

Study of Immunohematologic Adverse Reaction Blood Transfusion in Qazvin Shahid Rajaee Haspital

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Introduction: Any adverse reaction to the Transfusion of Blood components should be reported to Blood bank personals as soon as. Because each blood product transfused carries a immunohematologic small risk of an acute or late adverse effect. Methods: in this descriptive- analytical study was carried out of Qazvin Shahid rajaee hospital. 2720 units of Blood and Blood components were transfusied, date was retrieved during 9 months from Blood Bank unit of this center. Alloimmune transfusion reactions, platelet refractioriness, hemolytic of RBCs and Bacterial coutamination reaction were studied. Results: From 2720 unit of Blood and Blood components, 18 cases of adverse reaction are reported and following results we obtained: 1-6 positive direct anti globulin test (DAT) 2-2 positive hemoglobinuria 3-5 cases of thrombocytopenia. 4-No bacterial contamination reactions Discussion: The present finding show that with continue reporting Blood transfusion-associated adverse events to blood bank. Blood transfusion organization help to diagnosis, Therapy and preventing of adverse reactions.

Keywords: Blood Bank, Adverse Reaction, Hospital, Immunohematology

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P208

Diagnosis of Prediabetes and Diabetes in Patients Who Refer to the Qazvin Shahid Rajaee Hospital

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Introduction: Diabetes is a complex group of dieases with a varity of causes. People with diabetes have high blood glucose, Also called hyperglycemia. Blood Tests are used to diagnosis diabetes and prediabetes. Pre-diabetes has no signs or symptoms. People with pre-diabetes have a higher risk of developing type 2 diabetes and cardiovascular (heart and circulation) disease. Methods: Among 500 patient, male and Female, equally, aging from 30-60 years that refer to lab in 3 month at summer are tested for Fasting Blood Sugar (FBS) and 2 hours Oral Glucose Tolerance Test (OGTT). All of persons who had fasting blood glucose between 100 to 126 mg/dLl were detected and evaluated with OGTT. Results: After testing, and obtaining results, the results were analysed by SPSS software and followed results. The case who had FBS between 100-126 mg/dl, we obtained: 1- In 85.3% women and 88 % men was 2 hours OGTT below 140 mg/dl (normal) 2- In 9.8% women and 7.8% men was 2 hours OGTT between 140-199 mg/dl (prediabetic) 3- In 4.9% women and 4.2% men was 2 hours OGTT above 200 mg/dl (diabetic) Discussion: With regard to obtained results that Show women are expose to prediabetic in 30-60 age rather than men, Unfortunately, many people who believe they're borderline diabetic or have touch of diabetes think that they're safe. However, research has shown that some long-term damage is being done to the body, especially to the heart and circulatory system. It was recommend the people for preventing and or finding information about pre diabetes and diabetes, every 6 month they should take tests to theses cases and other disease.

Keywords: Pre Diabetes, Diabetes, Fasting Blood Sugar, Oral Glucose Tolerance Test

P209

Comparing the Effects of Metformin with Silymarin on Biochemical Parameters Related To Diabetes and Pancreatic Tissue in Streptozotocin-Induced Diabetic Rats

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Diabetes is a major public health problem worldwide and associated with serious side effects. Given the role of medicinal plant in controlling diabetes, this study aimed to compare the effects of silymarin with metformin on serum glucose, insulin, insulin resistance (HOMA.IR), pancreatic function (HOMA.B) and pancreatic tissue in diabetic rats. Materials and Methods: In this experimental study, frothy male Wistar rats weighing 180-240 g were randomly divided into 5 equal groups as follows: the healthy control (HC), the diabetic control (DC), the silymarin100 (S100), the silymarin 200 (S200) and the metformin 100 (M100). Groups DC, S100, S200 and M100 were injected with intraperitoneally of streptozotocin. Groups S100, S200 and M100 received 100 mg/ kg of silymarin, 200 mg/ kg of silymarin and 100 mg / kg of metformin respectively. After 30 days of intervention, serum concentrations of glucose and insulin were determined by enzymatic and ELISA method respectively. Also the pancreatic tissue was studied by light microscopy. Results: Serums concentrations of glucose, insulin and HOMA.IR significantly decreased, wheras HOMA.B increased in the S100, S200 and M100 groups compared to the DC group. Glucose and insulin levels significantly decreased in the M100 group compared to the S100 and S200 groups ($p < 0.05$). Histological analysis demonstrated restoration effects of metformin and silymarin on pancreatic tissue. Conclusion: It seems that efficacy of metformin on diabetes is better than silymarin, however, more researches are needed to survey the effects of different timing (longer) and different concentrations of silymarin on diabetes.

Keywords: Diabetes, Silymarin, Metformin, Insulin Resistance

P210

Effect of L-carnitine on Serum Parameters in Alloxan Induced Diabetic Male Rats

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L-carnitine (LC) is an essential nutrient. It has vitamin-like qualities and it is considered essential in helping to transport fatty acids into mitochondria. The benefit effect of L-carnitine is proposed for treatment of obesity as long time periods. The objective of this study was to determine the effects of supplementation of LC on serum parameters in alloxan-induced diabetic rats. The animals were made diabetic using by alloxan (120 mg/kg, i.p.). The LC at doses 7, 14 and 28 mg/kg were administered for 16 days, intraperitoneally. Blood samples were obtained from heart after 16 days. The group of control diabetic rats was administered saline as vehicle. Serum glucose, cholesterol, triglycerides, LDL, HDL, urea, uric acid, creatinine, alanine aminotransaminase (ALT) and aspartate aminotransaminase (AST) enzymes levels were measured by kit. The results showed the LC treatment decreased raise of serum glucose, cholesterol, triglycerides, LDL, urea, uric acid, ALT and AST levels, while increased serum HDL level in alloxan-induced diabetic rats compared to saline control diabetic rats. The present data indicated that LC has anti-diabetic effect on diabetic rats. So, it should be considered in future therapeutic researches.

Keywords: L-carnitine, Diabetes, Rat, Alloxan

P211

Evaluation of Association between Serum Hscrp Level and Diabete Type 2 in Patient Referring to Kashan Shahid Beheshti Hospital in First Half Year 1393

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Background & Objectives: CRP is an acute phase reactant in response to a variety of inflammatory cytokines. Locally, CRP secretes by cells within atherosclerotic plaque can inducing a prothrombotic state. CRP level strongly predict the risk of cardiovascular diseases. Also diabetes increases the risk of atherosclerosis.In this study evaluation of CRP level has been done in patients with diabetes type 2. Materials & Methods: This cross-sectional study included 180 diabetic patients with type II diabetes as the case group with FBS upper than 120 and 180 cases randomly selected as the control group who had the normal fasting blood sugar. Both groups had no inflammatory, infectious or rheumatologic disorder. The level of CRP was measured in both groups with ELISA method. Results: The mean age of the case and control groups was 55.3 and 53.2 years.The average level of CRP 8.9 and 5.1 (normal level below 6) and the average level of FBS was 165.3 and 89.2 in order in diabetic and nondiabetic persons. There was a obvious difference between two groups ($pv<0.05$) Conclusion: There is a obvious increasing of CRP level in diabetic patients than normal people of society.So the diabetic patients with high level of CRP shoud be considered as prophylactic procedures and shoud be tried to decrease the cardiovascular risk factors.

Keywords: Diabete, hsCRP, hsCRP

Iranian Association of Clinical Laboratory Doctors

Research in Laboratory Sciences: Hematology P212 - P240

P212

Factor VII Activity Expressed in Iranian Lizard Leishmania

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Introduction and objective: Over many years, variable gene expression systems have been used obtaining of Factor VII protein, but each one imposes certain limitations. Accordingly, the main goal of this study was to assess biological activity of purified and recombinant factor VII expressed in lizard Leishmania. Method: After transferring FVII to Leishmania, first, to confirm the expression of 55 KD FVII protein in transfected cells, cell lysate was prepared and then analyzed by SDS-PAGE and western blotting techniques.In the next step immune affinity chromatography based on NI-NTA-His Tag-resin was applied to purify. Western blot analysis was performed using specific antibodies against FVII. After that, ELISA method was employed to investigate chromogenic activity of human recombinant Factor VII in supernatant and pellet fractions of Leishmania cells. Result: The activity of rhFVII was about 0.0188 IU/ml in the cell concentrated sediment and 0.0125 IU/ml in supernatant in the first 60 seconds and after that none of the samples showed an acceptable activity. Discussion: This system compared to other expression systems has benefits such as easy to work with organisms like yeast and E.coli expression systems, proper protein folding and post translation modification. Furthermore, cell proliferation in cultured media is much faster and cheaper in comparison with mammalian cells in vivo. Conclusion: According to the results of the present study, it seems that the lizard Leishmania expression system is appropriate for the expression of human FVII protein. There is a need for more attempts to increase the stability of the recombinant protein activity.

Keywords: Recombinant Factor VII, Biological Activity, Lizard Leishmania

P213

Abnormal Secretion of Reproductive Hormones Involved in Quantum Dots-Induced Reproductive Toxicity in Adult Male Rat

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Objective: Quantum dots (QDs) as colloidal nanocrystalline semiconductors have quantum dot wavelengths for biomedical assays and imaging. But the important point is the high toxicity of core. Studies about this subject are the most important investigations for using these nanoparticles in medical applications. Materials: Mentioned quantum dots were injected in 10, 20, and 40 mg/kg doses to some male mice, 10 Days after CdSe: ZnS , the blood and serum /sample of rats for biochemical analyze of FSH, LH and Testosterone provided. Results: Mean concentration of LH and testosterone showed high toxicity of CdSe: ZnS in 40 mg/kg dose. But FSH hormone didn't show any difference with control group. Conclusion: Based on results obtained it can be said that quantum dots are capable of inducing detrimental effects on the reproductive systems of male mice. Considering lack of any previous study in this category, our study can be an introduction to more studies about effects of quantum dots toxicity on development of male sexual system.

Keywords: Cdse, Zns, Reproductive, Toxicity

P214

CXC Chemokines CXCL9, CXCL10 are Associated with Sickle Cell Disease and Carriers: a Study of Patients from the Southeast Region of Iran

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Background: Sickle cell hemoglobinopathies are amongst a group of genetic disorders resulting from a single base-pair DNA mutation at the beta chain of hemoglobin. Chemokines and cytokines play a part in the pathogenesis of inflammatory and infectious diseases. They are also involved in balancing angiogenesis/angiostasis processes to form new vascular networks. We aimed the present study to measure the circulating CXC chemokines CXCL9, CXCL10, in the plasma of sickle cell patients (SCD). METHODS: This cross-sectional study was conducted at the Kerman Special Disease Center and Rafsanjan Molecular Medicine Research Center during 2010 to 2011. Peripheral blood specimens were collected from 77 children with SCD and 70 controls. Serum samples were isolated and CXCL9, CXCL10 were measured using ELISA. RESULTS: The findings of this study demonstrated that serum concentrations of CXCL9 and CXCL10 were decreased in SCD patients in comparison to control subjects. However, we found increased levels of CXC chemokines in SCD patients suffering from pain crisis but the difference was not significant. CONCLUSIONS: According to the results of this study it can probably be concluded that the balance between angiogenesis/angiostasis CXC chemokines is an important predictive factor for initiation of complications in SCD patients.

Keywords: CXCL9, CXCL10, Sickle Cell, Chemokine

P215

Association of CXC Chemokines with Spinal Cord Injury Southeastern Iranian Patients

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Chemokines, a subclass of cytokine superfamily have both pro-inflammatory and migratory role and serve as chemoattractant of immune cells during the inflammatory responses ensuing spinal cord injury (SCI). The chemokines, especially CXCL-1, CXCL-9, CXCL-10 and CXCL-12 contribute significant part in the inflammatory secondary damage of SCI. Inhibiting chemokine's activity and thereby the secondary damage cascades has been suggested as a chemokine-targeted therapeutic approach to SCI. To optimize the inhibition of secondary injury through targeted chemokine therapy, accurate knowledge about the temporal profile of these cytokines following SCI is required. Hence, the present study was planned to determine the serum levels of CXCL-1, CXCL-9, CXCL-10 and CXCL-12 at 3-6h, 7 and 28days and 3m after SCI in male and female SCI patients (n=78) and compare with age- and sex-matched patients with non-spinal cord injuries (NSCI, n=70) and healthy volunteers (n=100). ANOVA with Tukey post hoc analysis was used to determine the differences between the groups. The data from the present study show that the serum level of CXCL-1, CXCL-9 and CXCL-10 peaked on day 7 post-SCI and then declined to the control level. In contrast, significantly elevated level of CXCL-12 persisted for 28 days post SCI. In addition, post-SCI expression of CXCL-12 was found to be sex-dependent. Male SCI patients expressed significantly higher CXCL-12 when compared to control and SCI female. We did not observe any change in chemokines level of NSCI. Further, the age of the patients did not influence chemokines expression after SCI. These observations along with SCI-induced CSF-chemokine level should contribute to the identification of selective and temporal chemokine targeted therapy after SCI.

Keywords: CXCL12, Spinal Cord Injury, Chemokine

P216

Significance of CCL2 (MCP-1) in Type 1 Diabetes and its Associated Complications

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Type-1 diabetes (T1D) is defined as a heterogeneous autoimmune disease. Immune system related factors are important in the pathogenesis of T1D. Chemokines are important factors in the pathogenesis of several autoimmune diseases, including T1D. They are potent chemotactic cytokines with various functions such as maturation, trafficking of leukocytes, angiogenesis, and homing of stem cells. Therefore, the current study was aimed to examine whether expression of CCL2 is associated with disease duration and complications in Iranian T1D patients. METHODS: In this experimental study, blood samples were collected from 108 T1D patients and 189 healthy controls in EDTA pre-coated tubes. The serum levels of CCL2 (MCP-1) chemokine was measured by ELISA. Demographic data were also collected along with experimental examinations in a questionnaire which was designed specifically for this study. Results: Results of the present study demonstrated that the expression of CCL2 was decreased in T1D patients in comparison to controls. These results demonstrated that CCL2, was elevated in T1D patients with duration of disease. Again, our findings demonstrated that CCL2 was elevated in T1D patients with age. But there was not a significant difference between circulating level of CCL2 chemokine studied in T1D patients regarding their gender and they have followed a similar pattern of expression in both genders. Our findings also showed that all three CCL2 chemokine was elevated in TID patients suffering from diabetes complications. Conclusions: According to the results of our study, elevated levels of CC chemokines are in parallel with decreased level of CCL2 and are useful tools in the differential diagnosis of T1D from other types of metabolic disorders. Significance of CCL2 (MCP-1) probably could be implicated as predictive factors for occurrence of T1D complications. These results may also re-emphasize the prominent therapeutic role(s) of this CCL2 in control of either T1D or its associated complications.

Keywords: CCL2, Type 1 Diabetes, Chemokine

P217

Current Information Concerning Association of CCL5 (RANTES) and Type-1 Diabetes: a Study on Iranian Diabetic Patients

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Type-1 diabetes (T1D) is characterized as a heterogenous autoimmune disease. Immune system factors are important in the pathogenesis of T1D. Chemokines are important factors in the pathogenesis of several autoimmune diseases, including T1D. They are potent chemotactic cytokines with various functions such as maturation, trafficking of leukocytes, angiogenesis, and homing of stem cells. Therefore, the current study was aimed to examine whether expression of CC chemokine CCL5 is associated with disease duration and complications in Iranian T1D patients. METHODS: In this experimental study, blood samples were collected from 108 T1D patients and 189 healthy controls in EDTA pre-coated tubes. The serum levels of CCL5 (RANTES) was measured by ELISA. Demographic data were also collected along with experimental examinations in a questionnaire which was designed specifically for this study. RESULTS: Results of the present study demonstrated that CCL5 was increased in T1D patients in comparison to controls. These results demonstrated that CCL5 was elevated in T1D patients with duration of disease. Again, our findings demonstrated that CCL5 was elevated in T1D patients with age. But there was not a significant difference between circulating level of CC chemokines studied in T1D patients regarding their gender and they have followed a similar pattern of expression in both genders. Our findings also showed that CCL5 was elevated in TID patients suffering from diabetes complications. CONCLUSIONS: According to the results of our study, elevated levels of CCL5 and are useful tools in the differential diagnosis of T1D from other types of metabolic disorders. Elevated levels of this CC chemokine probably could be implicated as predictive factors for occurrence of T1D complications. These results may also re-emphasize the prominent therapeutic role(s) of this CC chemokine in control of either T1D or its associated complications.

Keywords: CCL5, Type 1 Diabetes, Chemokine

P218

Serum Levels of CXCL1 in Patients with Type 1 Diabetes

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Type-1 diabetes (T1D) is characterized as a heterogenous autoimmune disease. Immune system factors are important in the pathogenesis of T1D. Chemokines as crucial members of the immune system are key factors in the pathogenesis of several autoimmune diseases, including T1D. They are potent chemotactic cytokines with various functions varied from maturation, trafficking of leukocytes, to angiogenesis, angiostasis, and homing of stem cells. Therefore, the current study was aimed to examine if the expression of pro-angiogenic CXC chemokine like CXCL1 are associated with duration and complications of T1D in Iranian diabetic patients. METHODS: In this experimental study, blood samples were collected from 209 T1D patients and 189 healthy controls. The serum level of CXCL1 was measured by ELISA. Demographic data were also collected on a questionnaire which was designed specifically for this study. RESULTS: Increased plasma levels of chemokine studied (CXCL1) was observed in T1D patients compared to controls. Current findings also demonstrated that there was a close association between chemokine and complications of T1D and chemokine was elevated in T1D patients suffering complications. Conclusions: Our results probably suggest that the serum level of CXCL1 play important roles in T1D pathogenesis. It is also worth noting that these factors are useful prognostic and/or diagnostic biological markers in T1D patients.

Keywords: CXCL1, Type 1 Diabetes, Chemokine

P219

Evaluating of Errors Due to Blood Grouping Tests in Returned Blood Bags from Hospitals to Tehran Blood Transfusion Center in Years 90, 91, 92 and the First Six Months 93

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Background: Blood Transfusion Service is a vital part of the health care service. Blood transfusion system has made significant advancement in fileds donor management, storage of blood, grouping and cross matching, testing for transmissible diseases, rationale use of blood and distribution etc .Nevertheless blood bags return for following Reasons consist of: Internal recall: Suspected Transfusion Reaction, Failure of Cold chain. External Recall: Existence a microbiological risk, Problems donation testing and quality of raw materials e.g. blood bag faults. Aim: We evaluated the reasons of errors due to blood grouping test in blood bags that were returned from hospitals to Tehran blood transfusion center. Method: In this descriptive study , we evaluated returned blood bags forms related to years 90,91,92, and the first six months 93. Results: In years of 1390, 1391,1392 and first six months 93, From 124 returned blood bags from hospitals to quality control department of Tehran blood transfusion center were 9 (7%), 10 (8%) , 14 (11%) , 4 (3%) because of group conflict, respectively. The evaluating have shown in 1390 grouping error 4 (44.4%) , RH error 1 (11.1%), DU error 4 (44.4%) , in 1391 grouping error 1(10%) , RH error 6(60%), DU error 3 (30%) , in 1392 grouping error 3 (21%) , RH error 7(50%) , DU error 4(29%) and the first six months 93 grouping error 0, RH error 2 (50%) , DU error 2(50%). Discussion: These finding show that in years of 1390, 1391,1392 and first six months 93 ,RH and DU error are increased .It is necessary to train clinical staff. The blood bank performing cross matching should confirm ABO and Rh(D) group of all blood units according to following standard procedures to using a sample obtained from an attached segment. Determination of ABO type :ABO type should be determined by testing red cells with anti-A, anti-B, anti-AB sera and testing serum or plasma for expected antibodies with fresh pooled A, B and O Cells (pool of 3 for each group) using tube / microplate method/ gel technology (manual or automated). Either monoclonal or polyclonal antisera may be used .Determination of Rh (D) : The Rh(D) type should be determined with anti-D reagent from 2 different sources (Ref.D.2.0) by tube/ microplate method/gel technology. If negative it should be labelled as 'Rh (D) negative' .Test for detection of unexpected antibodies: Serum of the recipient should be tested for unexpected antibodies with pooled O Rh(D) positive cells or screening red cell panel at room temperature by saline technique and at 370C by albumin /enzyme as well as indirect anti globulin test with proper controls (positive, negative and end point). If on screening, antibody/ ies are detected, the antibody/ies should be identified by red cell panel, if possible. A control system using red blood cells sensitized by IgG, Anti-D must be used with anti globulin tests to detect false negative.

Keywords: Return Bag , ABO Group ,RH Typing ,DU Typing, Unexpected Antibodies

P220

Prenatal Effect of Electromagnetic Field on Urea and Creatinine in Adult Female Rats

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Objective: All people are now exposed to EMF. In recent years, several studies have suggested possible bio-effects of magnetic fields on body systems. There are only a few publications on prenatal effects of EMF on urea and creatinine as suitable prognostic indicators of renal dysfunction in F1 generation, therefore the aim of the present study was to evaluate the effect of EMF exposure during developmental period on plasma urea and creatinine levels in female adult rats. Material and Methods: In treatment group pregnant rats were exposed to 3mT EMF, 50Hz for 21 days. The sham group contained pregnant rats under same condition of treatment group but out off the EMF field and pregnant rats in room were used as control group. After delivery, the female pups (F1 generation) were kept until maturity, then blood samples of adult female rats from each three group for biochemical analyze provided. Results: Biochemical analysis showed that levels of urea and creatinin was significantly increased ($P<0.05$) in the treatment group in comparing with the control group, but no found significantly difference between control with sham group ($P<0.05$). Conclusions: In this study increasing concentration of urea and creatinine in serum indicate a nephropathy possibly induced in exposure EMF that associated with congestion of renal blood vessels, contracted glomerular tufts of some glomeruli and focal leukocyte aggregation.

Keywords: Electromagnetic Field, Urea, Creatinin, Prenatal

P221

Evaluation of Expression Profile of B-Catenin and Survivin in Acute Myeloid Leukemia (AML) Patients

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Introduction: The Wnt/β-catenin signaling is important for controlling self-renewal of hematopoietic stem cells and its constitutive activation has recently been documented in a significant proportion of acute myeloid leukemia (AML) cases. Survivin, a member of the inhibitor of apoptosis protein (IAP) family that suppresses apoptosis, is an one of Wnt/b-catenin signaling target gene and is associated with resistance to chemotherapy, increased recurrence and decreased patient survival. Objective Evaluation of expression profile of β-Catenin and survivin in Acute myeloid leukemia(AML) patients Material and method In the present experimental study, the blood samples of 56 patients that referred to hematology and oncology research center of Ghazi hospital were collected. Then, β-catenin and SVV genes expression were studied using relative quantitative real time PCR. The data were analyzed with SPSS version 16, T-test and one way ANOVA tests. Results This study demonstrate that β-catenin and SVV genes overexpressed in AML patients, 3.85 and 2.17 fold increases respectively, compared with the control group. Conclusion Finding indicate that β-Catenin and SVV genes may have role in proliferation and survival of AML cells and inhibition of apoptosis by increasing SVV gene expression can be probable mechanism.

Keywords: Acute Myeloid Leukemia, B-Catenin, Survivin

P222

CBC Indices in Patients with Chronic Kidney Disease

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Background: Anemia is common complications of chronic kidney disease is an important cause of cardiovascular disease, renal disease, and accelerate progress of renal failure and finally reduced quality of life. Aim of this study was to investigate the prevalence of anemia in patients with chronic renal failure and relevance between uremia and anemia in these patients. Methods: In a cross - sectional study on patients admitted to kidney and urinary tract Sina hospital, 108 cases were selected patient characteristics. RBC count, hemoglobin, hematocrit, MCV, MCH, MCHC, RDW, blood glucose, urea, creatinine, sodium and potassium were measured. Statistical analysis was performed using software Graph pad prism5 and Spearman correlation test 95% confidence level was performed. Results: The mean age 54±18.6 (male :63 patients (58.5%) and female :45 patients (41.5%)). On average, 81% of patients had anemia. Mean serum levels of blood urea and hemoglobin in patients were 100 ± 42.85mg/dl and 11.09 ± 1.97 g /dl, respectively. There was relatively significant and direct relation between the level of blood urea and RBC indices but between hemoglobin and blood urea was no significant relationship. Conclusion: uremia in patients with chronic kidney disease is a risk factor that involved in the development of anemia.

Keywords: Chronic Renal Failure, Anemia, Uremia

P223

Trends of HCV Infection among Blood Donors in Izeh City During 2009-2011

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Background: Hepatitis C Virus (HCV) is one of the major global health problems. It's estimated that more than 170 million was infected in all over the world. The major routes of HCV transmission are IV drug abuser, blood transfusion, high risk behavior. Study of the trend and prevalence of HCV in Izeh helps us in evaluating the blood safety and orientated the HCV preventive program. Methods: In this retrospective study, we have evaluated the HCV trend in 19382 blood donations of Izeh city for 2009 to 2011.HCV screening tests were done by ELISA and the repeatedly reactive samples confirmed by RIBA test. The prevalence of HCV infections per 100,000 was calculated. Results: our findings showed that the overall prevalence of HCV was 185(per 100,000). in different types of blood donation we found that 559 in first time, 97 in repeated and 8 in regular donations was HCV seropositive. The overall of HCV prevalence declined from 640 in 2009 to 490 in 2011. The prevalence showed increase in repeated donations from 0 in 2009 to 112 in 2011. Conclusion: our findings emphasis that our preventive program about safe blood supply was successful .Trend of HCV prevalence in this region was approximately same with other study that conducted around Iran but was significantly lower than other neighbor countries. It's recommended that the training programs must be focused on first time blood donors.

Keywords: HCV, Trend, Blood Donors, Izeh

P224

HLA-A*26 and Susceptility of Iranian Patients with Non-Hodgkin Lymphoma

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Non-Hodgkin lymphoma (NHL) includes a wide range of diseases with different clinical and biological features. NHL is usually presented as localized or generalized lymphadenopathy. It has been suggested that the HLA class I and II are associated with susceptibility to NHL. Different ethnic groups have been found to have different HLA class I and II alleles which affect NHL.We performed a case-control genotyping study on 75 Iranian NHL patients who were selected from among the patients referred to the Bone Marrow Transplantation Department of Taleghani Hospital and 120 apparently healthy control subjects using the SSP-PCR by a commercial kit.Our results demonstrated that the HLA-A*26 (p: 0.026; OR: 8.5) and HLA-B*35 (p: 0.022; OR: 0.375) alleles had positive and negative associations with NHL disease, respectively. HLA-DRB1*13 allele showed decrease of frequency in patients in comparison with the controls, but it did not remain significant after correction.Our results conclude that HLA-A*26 may represent as a genetic susceptibility factors in Iranian patients with Non-Hodgkin's lymphoma, a finding which generally supports contribution of genetic factors in the etiology of this disorder. In addition, these results may be useful in designing a peptide based vaccine for the Iranian NHL patients with HLA-A*26.

Keywords: Non-Hodgkin Lymphoma, HLA, Susceptility

P225

Expression Pattern of Key Micrornas in Patients with Newly Diagnosed Chronic Myeloid Leukemia in Chronic Phase

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Intruduction: Chronic myelogenous leukemia (CML) is caused by reciprocal translocation in hematopoietic stem cells (HSCs). This translocation forms BCR-ABL1 oncogene, which alters several signaling pathways that control malignancy. CML has three phases: chronic, accelerated and blast crisis. The microRNAs (miRNAs or miRs) are non-coding RNAs down-regulating their target gene by targeting 3' UTR of mRNA or through translational inhibition. It has been shown that miRNAs regulate many biological processes, and dysregulation of these regulatory RNAs is involved in disease development, particularly in cancer. The important role of miRNAs as therapeutic agents and biomarkers has been demonstrated in CML patients at different phases. METHODS: Herein, we used stem-loop RT-PCR to characterize differentially expressed miRNAs of leukocytes in peripheral blood of 50 newly diagnosed CML patients in chronic phase. RESULTS: In this study some onco-miRNAs were down-regulated (miR-155 and miR-106), and some tumor suppressor-miRs (miR-16-1, miR-15a, miR-101, miR-568) were up-regulated. CUNCLUSION: These results show that actually, hardly miRNAs themselves would be good candidates for CML diagnosis independently of conflicting results, but together could be an additional tool for CML diagnosis. Moreover, miRNAs might be good candidates for prognosis prediction and CML therapy.

Keywords: microRNA, CML, Stem Loop RT-PCR

P226

Training Effect in Promoting External Quality Assessment Results

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Introduction and The goal: External quality assessment program (EQAS) is to evaluate the results of tests conducted in different laboratories on the same sample by a by a credible, independent center. From 1386 until now, Laboratories 315 of the Social Security Organization by Reference Laboratory under of external quality assessment were examined. The results, with different training methods Closer together and enhanced. Materials and methods: Control samples during different periods of the external quality control to the Laboratories Send and the Results (quantitative or qualitative) of the tests Will be sent to the reference laboratory. The mean of the quantitative results after excluding outliers are calculated and compared with the average public and Qualitative results can be analyzed based on the frequency of reports. Types of samples sent and Evaluation date of some of these programs are listed in Table 1. Results: Acceptable results obtained from statistical analysis (Using Excel and SPSS software, etc.) For all desired parameters (qualitative and quantitative) of the laboratories with the number of laboratories participating in the program will be calculated and presented. Some of the results are listed in Table 2. Discussion: Due to numerous problems of scientific and administrative in determining the amount and selection of reference laboratories seems Calculation of Mean public the best way to determine the value of the target. Training courses in different ways and sending off teaching files Increase the effectiveness of Acceptable results. Chart 1 shows some of the programs.

Keywords: External Quality Assessment, Average Public, Target Value

P227

Prevalence of Alloantibodies Inthalassemia Patients to Tehran Blood Transfusion Regional Base in the First Half Of 1393

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Introduction: Thalassemia is the most common genetic disease in the world.Thalassemia is a Greek word meaning of the word Thalassa Thalassa sea and Amy Emia the blood was taken and the Mediterranean anemia or Cooley's anemia and anemia is said in Farsi.More alloantibodies thus creating an incompatible blood transfusion. Materials and methods: Have been studied in 50 patients with thalassemia. For this purpose, antibody screening was performed on all samples and samples that were positive for antibody screening, additional tests were performed on the panel. Results:In this study, 17 patients had E, c, 1patients had antibody, E, c, S and b Fy, 11 patients had antibody D and C, 4 patients had antibody Kell, 3 patients had antibody Kell and Kpa, 1 patients had antibody, E and c and S and b Jk and Kell, 4 patients had Kell antibodies and CDE, 2 patients had E antibody and b Jk, 3 patients had antibody M, 4 patients had antibodies p1. Discussion:Antibody screening test for screening of alloantibodies are appropriate and effective method is to cross-match test and knowing the history of alloantibodies are helped to find blood in these patients will be safe.

Keywords: Alloantibodies, Thalassemia, Antibody Screening

P228

The Evaluation Relationship between the Helicobacter Pylori and Hypothyroidism

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Background: The thyroid and the stomach have many embryologic and structural similarities and are involved simultaneously in some disease. Helicobacter pylori infection leads to ulcers. There have been few studies on the relationship between Helicobacter pylori infection and Hypothyroidism. We were studied Hypothyroidism in the patient with H.pylori infection. Methods: study was cross-sectional study. The level serum of T3, T4 and TSH in the patient who have IgM and IgG against Helicobacter pylori were measured, then relationship between the H. pylori infection and risk of Hypothyroidism was evaluated. Results were analyzed by using of SPSS 18 software and regression analysis. Results: of 72 patients, 57 females(79.16%) and 15 males(20.84) have H.pylor that 5 of them have low level of T3,T4 and high level of TSH that it is the laboratory diagnostic of Hypothyroidism. Conclusion: results show no the linear relationship between the helicobacter pylori and Hypothyroidism. Although there are some article that show relationship between helicobacter pylori infection and Hypothyroidism but it not show in our result.

Keywords: Hypothyroidism, H.pylori, Infection

P229

Induce of the Proliferation of Mesenchymal Stem Cells by Human Umbilical Cord Blood Serum in Vitro

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Introduction: Mesenchymal stem cells (MSCs) are multipotent progenitors which reside in bone marrow and support hematopoietic stem cells (HSCs) homing and proliferation. Simplicity of their isolation and expansion make them a promising candidate for stem cell-based regenerative medicine and gene therapy as well as co-culture with HSCs. For therapeutic purposes, they usually proliferate to reach an adequate number. Conventionally DMEM medium is supplemented with 10% FBS for their expansion. Major limitation of bringing of this technology into the clinic is the use of animal sera in culture media. In this study, we evaluated the effect of human umbilical cord blood serum (hUCBS) for culturing MSC from different sources. Material and methods: MSCs were isolated from human bone marrow and cord blood. Following the conformation of their mesenchymal identification by flowcytometery and differentiation assays, they cultured in media supplemented with different concentration of hUCBS (5,10,15,20,25,30%). After 3days, MTT assay was performed and doubling time was calculated. The results were analyzed by excels software. Results: In vitro, hUCBS in its optimized concentration (15%) increased MSCs expansion up to 3.78 fold and decreased their doubling time to about 14houers. Indeed, hUCBS did not change cell's mesenchymal characteristics. Conclusion: hUCBS increase MSCs expansion in a dose dependant way; so they are appropriate substitute for FBS. The most significant proliferation was observed in dose 15% ; higher doses did not make any significance.

Keywords: Mesenchymal Stem Cell, Hematopoietc Stem Cell, Umbilical Cord Blood Serum, Fetal Bovin Seum

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Study of Hpericum Perforatum Hydroethanolic Leaf's Extract on Anemic Male Rats Induced with Cyclophosphamid

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Aim: Cyclophosphamid is one of the anticancer drug which cause alkylation on DNA in cells. Thisdrug reduces blood cells and affect bone marrow tissue. Hpericum perforatum (HP) is a medicinal plant which its hemopoetic effects on bone marrow tissue and blood parameter were investigated in this study. Methods and material: The 42 male Wistar rats with 220-250 gr body weight were divided in 6 groups randomly(n=7): control, treated by cyclophosphamide (15mg/kg,i.p), treated with HP, and treated groups (cyclophosphamide,15mg/kg,i.p, + 100 mg/kg HP, cyclophosphamide, 15mg/kg,i.p, + 200 mg/kg HP and cyclophosphamide,15mg/kg,i.p, + 400 mg/kg HP). After the examination the blood samples were collected from heart directly and analyzed for RBC, WBC, HCT and MCV. All data were expressed as mean±SEM and differences were considered statistically significant with $P<0.05$. Results: The bone marrow tissue was injured by cyclophosphamide with reduction in number of blood cells significantly. The treated groups with HP showed that increasingly in blood cells compared with cyclophosphamide induced group significantly ($P<0.001$). Conclusion: Hpericum perforatum has flavonoid and antioxidant composition which can protect bone marrow tissue and blood cells against chemical drugs.

Keywords: Hpericum Perforatum, Blood Cells, Cyclophosphamide, Rat

P231

Evaluation of Osteopontin Gene Expression in Acute Promyelocytic Leukemia and Acute Monocytic Leukemia Cells

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Osteopontin (OPN), also known as bone sialoprotein I (BSP-1 or BNSP), secreted phosphoprotein 1 (SPP1), is a protein that in humans is encoded by the SPP1 gene (secreted phosphoprotein 1). Osteopontin is biosynthesized by a variety of tissue types including fibroblasts, preosteoblasts, osteoblasts, osteocytes, some bone marrow cells, dendritic cells, macrophages, smooth muscle, endothelial cells, and placenta. Some of the OPN roles are: biomineralization, bone remodeling , immune functions, Apoptosis,…. in this study we want to determine the OPN expression in Apl and Acute monocytic leukemia cell lines. Material: The human promyelocytic HL-60 cells and Monocytic u-937 cells were cultured in complete RPMI -1640 medium. The MRNA of the cells at logaritmic growth phase were extracted and cDNA synthesis were done. Then PCR and Real-Time PCR were done. Spss 18 software was used to evaluate the data. Results: The results of the present study showed that OPN had high level of expression in these cells, so this gene is up regulated in these cell lines. Conclusion: Because of the different roles of OPN, this results show the importance of more studies on OPN gene. Since it may have important effects on cell behavior.

Keywords: Osteopontin, OPN, SSP1, HL-60, U-937

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Evaluation of MMP-9 Gene Expression in Acute Promyelocytic Leukemia and Acute Monocytic Leukemia Cells

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Background and aim: Matrix metalloproteinases (MMPs) which regulate cancer and inflammation. MMPs are involved in a variety of biological processes, such as proliferation, migration and invasion of cells, tumor metastasis and angiogenesis. in this study we want to determine the MMP-9 expression in Apl and Acute monocytic leukemia cell lines. Material: The human promyelocytic HL-60 cells and Monocytic u-937 cells were cultured in complete RPMI -1640 medium. The MRNA of the cells at logaritmic growth phase were extracted and cDNA synthesis were done. Then PCR and Real-Time PCR were done. Spss 18 software was used to evaluate the data. Results: The results of the present study showed that MMP-9 had high level of expression in these cells, so this gene is up regulated in these cell lines. Conclusion: Because of the different roles of MMP-9, this results show the importance of more studies on OPN gene. Since it may have important effects on cell behavior. MMP.

Keywords: MMP-9, Angiogenesis, Hl-60, U-937, Real Time Pcr

P233

Evaluation of Cytotoxic Effects of Interferon-Beta on Monocytic Leukemia Cells

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Background and Aim: Monocytic leukemia is a type of myeloid leukemia characterized by a dominance of monocytes in the marrow. When the monocytic cells are predominantly monoblast, it is subclassified into monoblastic leukemia. IFN-β are secreted by many cell types including lymphocytes (NK cells, B-cells and T-cells), macrophages, fibroblasts, endothelial cells, osteoblasts and others. It has many effect on cells, including: Cell cycle inhibition and antiproliferation, Apoptosis and Cytotoxicity, Anti-tumor…. in this study we want to investigate the cytotoxic effect of IFN-Beta on u-937 cell line. Methods: The human monocytic cells were cultured in complete RPMI -1640 medium. The cells at logarhytmic growth phase were treated with different concentrations of Interferon-Beta (0.3- 210ng/ml). cell death of u-937 cells were determined by MTT assay after 24-hours incubation. Results: Interferon Beta significantly increased cell death in u-937 cells in a dose dependent manner. Conclusion: The results of the present study showed that Interferon Beta increased cell death in u-937 cells. So the anti-proliferative and apoptotic properties of Interferon Beta may be partly due to its supportive effects on cell death.

Keywords: Interferon-Beta, U-937 Cell Line, MTT, Leukemia

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Evaluation of Interferon Beta Effects on Cell Viability in Monocytic Leukemia Cells

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Background and Aim: Monocytic leukemia is a type of myeloid leukemia characterized by a dominance of monocytes in the marrow. When the monocytic cells are predominantly monoblast, it is subclassified into monoblastic leukemia. IFN-β are secreted by many cell types including lymphocytes (NK cells, B-cells and T-cells), macrophages, fibroblasts, endothelial cells, osteoblasts and others. It has manyeffect on cells, including: Cell cycle inhibition and antiproliferation, Apoptosis and Cytotoxicity, Anti-tumor…. in this study, we want to investigate the cytotoxic effect of IFN-Beta on u-937 cell line. Methods: The human monocytic cells were cultured in complete RPMI -1640 medium. The cells at logarhytmic growth phase were treated with different concentrations of Interferon-Beta (0.3- 210ng/ml). cell viability of u-937 cells were determined by MTT assay after 24-hours incubation. Results: Interferon Beta significantlydecreased cell viability in u-937 cells in a dose dependent manner. Conclusion: The results of the present study showed that Interferon Beta decrease cell viability in u-937 cells. So the anti-proliferative and apoptotic properties of Interferon Beta may be partly due to its supportive effects on cell death.

Keywords: Interferon-Beta, U-937 Cell Line, MTT, Leukemia

P235

The Prevalence of Hemoglobinopathies (Hemoglobin S and D/G) in Lar City in the Southern Part of Fars Province

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Introduction and objective: Hemoglobinopathies are a group of genetic disorders of globin chain synthesis which are common in many countries including Iran. Their severity and disabling nature make them a major public health problem. In this study we evaluated prevalence of hemoglobin S,D/G (Hemoglobin D or hemoglobin G) in patient that referred to one laboratory in Lar city. Method:A cross-sectional study was carried out on 3868 patiants that referred to a private laboratory in Lar city during March 2009 to March 2014. Blood sample were taken and Screening for hemoglobinopathies was performed for all patients by using Cellulose acetate gel electrophoresis method. Patient that had SDG bands were examined by Sickle Cell Tests. Data were analyzed by SPSS software and descriptive method. Results: In this study that performed during 5 years, of 3868 patients were examined, SDG band was founded in 3.65% (N=141) patients. Frequency of Sickle trait was 0.08% (N=3) and sickle cell anemia was 0.025% (N=1). Among the remaining 137 patients with positive D/G band, frequency of D/G trait was 3.1% (N=120) and Homozygous of D/G was 0.44% (N=17) of patient. Conclusion: Our results indicated that the incidence of Sickle cell anemia in Lar is 0.025% which is relatively low. But the prevalence of D/G collectively is 3.54% that needs to more attention in screening programs.

Keywords: Hemoglobin S, Hemoglobin D/G, Lar

P236

Evaluate Ratio Cross-Matched to Blood Transfusions(C/T Ratio) in Imam Mohammad Bagher (AS) Hospital in Qir and Karzin City

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Background and Objective: Given the value of blood and Lack of alternative for it as well as the cost of personnel, equipment and laboratory materials that are required for administration of a single unit of blood, Therefore, it is important to establish suitable ratio between the requested blood and blood consumption. The purpose of this study was to evaluate ratio cross-matched to blood transfusions(C/T Ratio) in Imam Mohammad Bagher (AS) hospital in Qir and Karzin city. Method: A retrospective study on the 1572 case of applications of blood transfusion during September 2011 to September 2014 was done. Then application of maternity ward, women surgical department and medical ward studied and C/T ratio was calculated for each ward. Result: From all of recorded blood application; 41.53% for maternity ward, 51.97% for, women surgical department and 6.48% were for medical ward. C/T ratio was 9.49, 1.29 and 23.56 for maternity, women surgical and medical wards, respectively. C/T ratio of the total length of the three wards was 7.86. Discussion: The C/T ratio in this hospital in compare with standard ratio (2 to 3) is not acceptable. In order to reduce this ratio should be implemented standard protocol of application and transfusion of blood. By using appropriate strategies in Physicians education, training and survey the problems in Blood bank Committee can avoid blood destruction and losses of expenses.

Keywords: C/T Ratio, Qir and Karzin, Hospital

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Study of Hbsag in the Patients with Hairy Cell Leukemia at the Shafa Hospital of Ahvaz, Iran

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Introduction**:** Hairy Cell Leukemia (HCL) is an uncommon B – cell lymph proliferative disease with a male to female ratio of 4:1 and a peak of incidence at 40-60 year. Patients typically present with infections, anemia (pancytopenia) and Splenomegaly. The bone marrow trephine shows and a diffuse cellular infiltrate. The aim of this study was investigation of HBSAg in the patients with (HCL) at Shafa hospital of Ahvaz. Methods: this descriptive and cross-sectional study was done from 2010-2014 on of all patients (21cases)with the diagnosis of HCl admitted to hematology oncology Department Shafa Hospital of Ahvaz, all the sera were tested for HBs Ag Levels by Elisa kit. The statistical test was used. Results: In this study, HBs Ag Positive were observed in(14%)3 patients,the age range of Patients were 34-83 years, the mean of patients were 47 years. There were 85% males and 15% females. Splenomegaly (90%), hepatomegaly (40%) and were showed in the patients. Leukocyte<4×109/L was seen in 91.6% of cases and also platelet< 70×109/L and Hemoglobin <10mg/dl were observed in 50% and 70.8% of patients. Conclusion : The results of present study indicated that HBs Ag Positive showed in(14%)3 patients ,pancytopenia, Splenomegaly are common findings in nearly all of patients, and also HCl is more common in males than in females.

Keywords: Hbsag, HCL, Pancytopenia

P238

Comparison of White Blood Cell Count with Using a Cell Counter and Microscopic Methods

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Introduction: WBC count in most Laboratories is usually done with cell counters. To determine the relative and absolute count of each cell typically microscopic method is used. Microscopic examination in hematology lab is a basic and easy, but it requires proper training and expert technologist to prepare a peripheral blood smear and identify cells correctly. Today, with new technologies, cell counters in addition to the blood cell count they are able to identify and differential count of white blood cells. Since introduction of these devices to IRAN and their increasing use in laboratories, it is necessary to awareness of accuracy of the results of the white blood cell differentiation count. Reference Laboratory in order to verify the performance of these devices was done this study. In this study, a suitable correlation was observed in neutrophils and lymphocytes count and the lowest correlation was in monocytes count. Materials and methods The study included 100 normal samples (54 females and 46 males) were in the age group of 6 to 68 years. Samples collected in vacuum tubes containing EDTAK3 and a maximum of 4 hours after sampling, differential white blood cell counts was performed simultaneously with two cell counters: Mindray 5500 and Excell22. For Microscopic method also prepared 2 slides of peripheral blood count and counting 200 cells from each sample with 100X .The results of the two cell counters and reference method (microscopic) were analyzed using SPSS software. It is note that the cell counters calibrated before test. Discussion and Conclusion Our study shows that the results of lymphocytes and granulocytes count with two methods particularly have proper correlation with correlation coefficient more than 0.85 .The results count of monocytes shows less satisfactory correlation and correlation coefficient is 0.5. Because of the low number of Monocytes in blood, microscopic count is less accurate compared with the results of the cell counters. Also, due to the large of these cells, they accumulate in the end of smear and this is also a source of error in microscopic count. In a similar study in America using cell counters compared with microscopic method, the same result observed and correlation results of differential count of neutrophils, lymphocytes and monocytes have been reported respectively 0.84, -0.96 and 0.43. in according of the results of this study, If the confidence of calibration and quality control of cell counters, it can be used for reporting of differentiation count In normal samples. However, a complete replacement device by microscopic method in the laboratory requires more extensive studies and review of all the sources of error.

Keywords: Diffrentiation, Cell Counter, Microscopic Method

P239

Evaluation of Hemoglobin Electrophoresis Results for 600 Patients by Capillary Electrophoresis

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Hemoglobinopathies is a common genetic disorder in the world that is caused by a mutation in the gene encoding the hemoglobin chains. To date, more than 1000 globin gene defects have been characterized. Hemoglobin D is one of the hemoglobinopathies in which Glu is converted to Gln. Hemoglobin A is the most common type of hemoglobin found normally in adults and its rate may be reduced in some diseases such as thalassemia. Hemoglobin F (fetal hemoglobin) is the predominant hemoglobin in the fetus and newborn that is replaced by hemoglobinA shortly after birth. The hemoglobin F level increases in some diseases, such as sickle cell anemia, aplastic anemia and leukemia. Hemoglobin A2 also comprises a small amount of hemoglobin normally found in adults. There are also more than 350 types of abnormal hemoglobin. Hemoglobin S that is found in sickle cell anemia and hemoglobin C are the most common types of abnormal hemoglobin. Hemoglobin E is most prevalent in Southeast Asia and hemoglobin D can be found in some patients with sickle cell anemia. In this research frequency of hemoglobin D was studied on 600 patients, referred to Payvand Clinical and Specialty Laboratory in 2014-2015. The CBC indices were evaluated initially and the Capillary electrophoresis test was performed to measure the hemoglobins of the study samples. The results showed that of the 600 samples examined, 15 patients had hemoglobin D (2.5%) with an average rate of 39.2. The study concludes that, considering that the high levels of this hemoglobin can cause anemia disorders in homozygote individuals, and since hemoglobin S and hemoglobin D are indistinguishable through conventional gel electrophoresis method, the Capillaries electrophoresis reference method for the differentiation of these hemoglobins has high diagnostic importance.

Keywords: Hemoglobinopathies, Capillary Electrophoresis, Hemoglobin

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P240

Distribution of the Leukocyte with Natural Delivery in Compare to Caesarean Section

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Introduction and objective: Natural delivery and Caesarean two processes apart for childbirth. Different conditions this can be effect to discharge hormones and cytokines. Whoever not research about type of leukocyte increased to peripheral blood this mothers as compared with both has been taken. In this research is that the difference between types of leukocyte increased in these two kinds of childbirth. Materials and Methods: In this study 60 mothers, 30 natural delivery and 30 Caesarean were selected. Groups were matched for age. This comparatively- analytical study and sectional assessment. All women in Emam khomeini hospital selected. Sample of peripheral blood two groups with sysmex analysor evaluate and statistical analysis was performed using software spss18.0 and analysis of variance(MANOVA) and so value levels $p<0.05$ considered. Findings: Studies have been done number of leukocyte peripheral blood women significant difference between at the count of lymphocyte and neutrophil between women with natural delivery in comparison with Caesarean Conclusion: The result show that physical pressure and stress in natural delivery in comparison with Caesarean can be influence the kind of leukocyte. Whoever not clear the kind of blood cells predominant and what kind of effect can be newborn and mothers.

Keywords: Leukocyte, Neutrophil Delivery, Caesarean

Iranian Association of Clinical Laboratory Doctors

Screening of Fetal Abnormalities in Pregnant Mothers: Double, Triple Quadruple Marker and Sonography P241 - P243

P241

Prenatal Screening and Diagnosis of Down"S Syndrome in Khrasan Razavi Foundation for the Prevention of Genetic and Congenital Disabilities (KRFPGCD)

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1685 pregnant women with singleton pregnancies who reffered to KRFPGCD center retrospectively evaluated for first and second trimester prenatal screening (FASTPS) and diagnostic tests. The first trimester testing or combined test was based on nuchal translucency (NT), pregnancy – associated plasma protein-A(PAPP-A), free-beta human chorionic gonadotrophin(Free B-HCG),and the second trimester tests or quad markers were alpha –fetoprotein (AFP), Total HCG, unconjugated estriol (UE3) and inhibin A. The cut off used in this analysis was 1 in 270 in both combined and quadruple tests. Among 1685 pregnant women submitted for the screening tests, 220 were equal or more than 35 years old(13.26%), 1428 were less than 35 (86.74%), mean age was 27.98 years(range: 13-45). Forthy eight pregnant women were determined to be at high risk for down"s syndrome. Three cases of them confirmed with diagnostic tests including aminocentesis,QF-PCR and FISH. The down"s syndrome false positive rate(DSFPR) was 45/1685(2.67%)and the odds of being affected given a positive result(OAPR) for down"s syndrome was 1:16. In this study was detected 10 NTD screen positive (0.59%),6 Edward syndrome(0.36%),1 patou syndrome(0.06%),and 2 SLOS (0.12%) screen positive result.

Keywords: Prenatal Screening, Combined Test, Quad Marker

P242

Comparison of Different Methods of Non-Invasive Prenatal Diagnosis for the Detection of Chromosomal Aneuploidy

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Introduction: Since there are no treatments for chromosomal aneuploidy, prenatal testing is important for women to make a good decision. For years, invasive techniques were the only way for prenatal diagnose. But they have risk of miscarriage. The discovery of cell-free DNA in maternal plasma has introduced a highly accurate diagnose for fetal aneuploidy. There are various techniques for non-invasive prenatal testing in the market. Objective: The objective of this study was to compare the tests for the detection of cell-free DNA in maternal blood from various aspects. Methods: In this study, we searched Pubmed and Sciencedirect for articles published between 2012 and 2014 with suitable key words(non-invasive prenatal testing, non-invasive prenatal diagnosis, massively parallel sequencing, cell-free DNA, aneuploidy screening and etc). Results: The electronic search retrieved 154 articles. 76 of which were excluded for not meeting the criteria.78 of them were evaluated in details and finally 41 of articles were selected. Discussion: Most of them were about a specific technique for the detection of cell-free DNA in the maternal blood and their ability to diagnose aneuploidy. Some of the review articles compared different methods. Conclusion: Recent years have witnessed a rapid development of NIPT using cell-free fetal DNA in maternal plasma. Review of published data suggests that NIPT is a reliable way in detecting fetal trisomy 21, with high sensitivity and specificity (>99%). Although initially disappointed, with modifications, specially the correction for GC bias in DNA sequencing, the detection rates for trisomy 18 and 13 improved. (100% and 91.7%, respectively)

Keywords: Diagnosis, Non Invasive, Prenatal, Chromosome Aneuploidi

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P243

The Relation between Echogenic Focus in the Left Ventricle of the Fetal Heart and Chromosome Abnormality

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Introduction: An intracardiac echogenic foci (ICEFs) is a “bright spot” in the heart that can be seen on an ultrasound. Today, ICEFs are very frequent findings during routine fetal and a main reason for referral of patients for fetal echocardiography in Iran. The present study aims to review recent literature about ICEFs relationships with aneuploidy and cardiac function. Methods: A search was conducted in Google Scholar, Scopus, Web of Knowledge and PubMed databases. The searches were restricted to papers published in the English language and were performed during January 2015. The search key words was based on the terms “Echogenic Focus, Left Ventricle, Heart, aneuploidy” A total of 21 articles were chosen for final evaluation. Results: An ICEF is a common finding on prenatal ultrasounds. The chance of finding an ICEF is related to position of the baby, the age of the baby, and the picture quality of the ultrasound. An ICEF is seen in approximately 20% of all second or third trimester ultrasounds. echogenic focus in the left ventricle do not have a Meaningful association with chromosomal abnormalities and structural cardiac malformation.ICEF considered a normal developmental variant, but either inflammatory or hypoxic processes could be involved in its appearance. Conclusion: In pregnancies with an ICEF, fetal karyotyping is not indicated when we have the absence of further sonographic markers of a chromosomal abnormality and exhibiting negative first-trimester combined screening results.

Keywords: Echogenic Focus, Chromosome Abnormality, Sonography

Iranian Association of Clinical Laboratory Doctors

Technology Management in Clinical Diagnosis Laboratory P244 - P246

P244

Functional Requirements of Laboratory Information Systems in Iran Hospitals

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Introduction: Laboratories in hospitals play a significant role in the treatment and prevention of diseases. An efficient information system and accordance with user requirements can be helpful in the performance of employees. This study was performed to determine the functional requirements in laboratory information systems in hospitals. Methods: This cross-sectional study and application research was done with Delphi technique in 15 hospitals affiliated to Tehran, shahid beheshti and Isfahan universities medical sciences in 2012. First library studies and internet browsing was done and based on that, an index and a semi-structured questionnaire was prepared and presented to 5 experts of first round. Then based on pluralization of experts opinions in first round, the final questionnaire was prepared including 61 closed questions with likert scoring, validity and reliability were confirmed through content validity and test-retest method and was presented to 38 experts of the second round by verbal reference. Answers were graded form 0-4 and were analyzed using the software SPSS and the requirements that their average of final score 3 and more were confirmed. Results: based on the first and second round of the Delphi technique, the final list of the laboratory functional requirements with 68 requirements were confirmed. Maximum mean scores were related to the ability to record the time of test request, sampling and testing (3.73) and the ability to warn and prevent the recurrence of similar tests in the time interval defined in the test request (3.71). Conclusion: The comprehensive list of functional requirements for laboratory information systems were offered in this research according to the laboratory employees' comments that can be used by designer, developer and other beneficiaries of laboratory information systems in hospitals.

Keywords: Hospital Information Systems, Laboratory Information Systems, Functional Requirements

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Molecular Diagnostics in Malignant Disease: PCR Array Applications

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The PCR Array Technique may be the most reliable and also accurate instrument intended for studying the expression of a concentrated panel of genes using SYBR® Green-based real-time PCR. This paper explains the modern process in pathway-focused gene expression profiling: the RT2 Profiler PCR Array method. The PCR Array method is usually made up of a 96- or 384-well plate comprising qPCR primer assays (84 pathway- or disease-focused genes, 5 housekeeping genes, and 3 replicate controls), instrument-specific SYBR® Green master mix, and a first strand cDNA synthesis kit. The simplicity of the PCR Arrays makes them accessible for routine use in every research laboratory. The PCR Arrays can be employed for investigation on cancer, signal transduction, stem cells, immunology, biomarker discovery, toxicology and analysis of phenotypes. In this paper, we focused on three application-specific studies in the fields of toxicology, cancer, and immunology. In the first examine, the particular PCR Arrays were used in liver cells to report gene expression changes caused by compound-induced cytotoxicity. In this study individual styles of expression changes with three drugs that induced liver toxicity, suggesting various modes of action for liver toxicity were observed. In the second study, the actual expression of cancer-related apoptosis genes was compared between blood cancer and normal cells. The most common number of genes with significant gene expression alternation associated with a couple of independent blood cancer cells was observed. From the next analyse, cell cycle, cytokines and other signal transduction pathway gene expression between stimulated and unstimulated cells was shown to correlate well with protein level alternation.

Keywords: PCR, Diagnosis, Cancer, Gene Expression, Signal Transduction

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P246

Illustrating Turnaroundtime (TAT) in Emergency Cases Using Line Charts

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In clinical laboratories, turnaround time (TAT) is defined as the period of time from test ordering to the time the results are verified. This index is very important especially in emergency cases when a patient is under a certain treatment such as chemotherapy or in some problematic pregnancies. In this study, line charts were designed based on the TATsfor emergency tests performed in Payvand Clinical and Specialty Laboratoryduring 2012-2014. The minimum and maximum times were calculated and a standard time was defined according to the tests needs. TATs above the standard were reported as inconsistency and necessary measures were taken to correct them.According to the charts, the average TAT for emergency tests was 55 min. Charting turnaround times can provide a clear picture of emergency tests performance in clinical diagnostic laboratories. Comparison of the resulted TATs with the defined gold standard may be helpful in recognition of inconsistencies and elimination of the causes.

Keywords: Emergency Cases Diagnostic Test , Turnaround Time, Line Chart

Workshops

W1

Cutting-Edge Molecular Diagnostics of Genetic and Infectious Diseases

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More and more gene variations in humans have been proven to be linked to specific diseases. Efficient tools for multiplex testing in molecular genetics and molecular infectious diagnostics are provided: "EUROArrays" are reliable and easy to apply microarrays according to IVD standards. TITERPLANE incubation technology and fully automated result interpretation facilitate test performance and lead to objective, accurate and reproducible results.The technology is also applicable for detection and subtype differentiation of pathogens. The "EUROArray HLA-DQ2/DQ8" determines and differentiates the HLA-DQ2.2, HLA-DQ2.5 and HLA-DQ8 subtypes that are relevant for the diagnosis of celiac disease. All HLA-DQA1 and HLA-DQB1 alleles encoding the alpha and beta subunits of the disease associated HLA-DQ antigens are resolved in a single microarray incubation. The results provide a clear conclusion whether or not celiac disease can be excluded and are based on the criteria of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN). The test results are in agreement with traditional laborious HLA typing methods used as a reference in validation studies. The EUROArray HPV detects and discriminates all 30 anogenital human papilloma virus subtypes relevant for cervical cancer prevention. Based on this high resolution obtained by a single microarray incubation, positive results are automatically classified as low risk or high risk depending on the HPV subtypes identified in the sample. Moreover, the precise subtype differentiation helps the physician do discriminate between new and persistent infections. Also infections with multiple HPV viruses that are quite common in certain risk groups can be readily detected. Extensive validation has confirmed the adequate sensitivity and highly specific detection for each HPV subtype. EUROArrays are addressing the increasing need for simple and reliable multiplex tests for nucleic acid determination in the daily analytical work.

W2

Pluripotent Stem Cells for Drug Screening and Regeneration

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Embryonic Stem cell-based novel alternative testing strategies aims at developing a toxicity test platform based on embryonic stem cells (ESC), especially human ESC, to accelerate drug development, reduce R&D costs, propose a powerful alternative to animal tests and increase human safety. To this end,a battery of toxicity testing using human ESC-basedsystems subject to standardized culture and differentiation protocols were built up. The test battery focuses on selected reference compounds of pharmaceutical interest and unknown prenatal toxicity with emphasis on the nervous system and covers reproductive toxicity, neurotoxicity, hepatotoxicity, cardiotocisity ,toxicogenomics as well as metabolism and toxicokinetics.Transcriptomics data were combined with phenotypic and functional readouts.The gene expression signatures were usedtoestablish classifiers allowingthe identification of compounds that act by a certain toxic mechanism or induce a specific phenotype. In a proof of principle study, the transcriptomicsdata revealed that the test compounds such as valproic acid (VPA)and methylmercury chloride induce a "common response" which can be distinguished from "compound-specific" responses. Thus an assay battery approach allows for classification of human developmental neurotoxicants, reproductive toxicants, cardiotxicants and hepatotoxicantson the basis of their transcriptome profiles.All data have been successfully uploaded onto the diXa data infrastructure and subjected to its standardized quality control protocol; toxicological data are thus sustained. The potential use of the cell test systems can be further improved after replacing of ESC with iPS cells, introduction of 3D models and utilizing the cell systems established from both healthy and diseased donors. To demonstrate the ability of pluripotent stem cells for regenerative medicine and tissue repair, CMs differentiated from iPS and ES cells were injected into the cryoinfarcted left ventricular wall of adult wild type mice. Translation from the laboratory into the clinic will be one of the future key problems of stem cell research. Although proof of principle for the therapeutic use of iPS cells in cardiac diseases has been shown both at the laboratory scale and in animal models, the methods used today for generation, cultivation, differentiation and selection are not yet suitable for the clinic.

W3

Future Medical Laboratories and their roles in Personalized Medicine

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Personalize Medicine is a new window in the field of medicine which focus on the unique individual diagnostic by the use of decisions, methods and suitable medical devices which are designed for each person. In this approach specialized test is often a good choice and better treatment on the basis of genetic background or molecular cellular. The use of genetic data plays a crucial role in different aspects of Personalized Medicine. This word first was created for the field of genetics and through it developed to cover all parts in the field of personalized actions. Each person has a unique variety of genome. Although most of these differences have no role in the people health, but people health comes from genetic variety and environmental manner and effects. Modern progress in Personalized Medicine are based on a technology which confirm the fundamental biology of patient such as DNA, RNA or protein which finally approve the illness. As an example the methods of Personalized Medicine like genome sequencing can reveal mutations which influence on the production of cystic tissue to cancer. A set of different genes can affect the possibility of occurring complicated and common illness. Progresses in Personalized Medicine can create a comprehensive approach which is special for the person and his genome. Personalized Medicine provides better diagnostics with sooner interference of drugs and treatment. Personalized Medicine lead us to Precision, predictable and strong medicine and the role of medical laboratories are the base of this issue.

Keywords: Personalize Medicine, Individual Diagnostic, Genome Sequencing, Medical laboratories

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W4

How Could You Evaluate the Performance in the Laboratory?

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1. Understanding how to use external and internal quality control programs (EQA and IQC) for evaluating trueness, precision and harmonization of your lab results. What we have learned from the program we use in our own laboratory. 2. Evaluation of consecutive test results; "Is this a significant difference?" • How much of a drop in cholesterol levels of an individual dieting can be accepted as a sign of significant decrease? • How early can we detect liver function deterioration in patients on lipid lowering drugs? • How many tests we should have done to say 0.85 ng/ml increase is significantly important for PSA around 4 ng/ml? Under this topic the attendees will be able to understand how to evaluate EQA results and significant changes in repeating test measurements of an individual based on the bias and CV of the laboratory obtained from EQA and internal quality controls and the inter and intra-individual biological variation for a given test.

W5

Quality Management Cocktail: 6 Sigma, Lean and Kaizen

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Six Sigma Lean and Kaizen are business management strategies commonly used in production industries to improve efficiency and quality of their products.During the past 20 years these process improvement techniques individually or combination of two or three program has been applied to other manufacturing sectors, Medical Laboratories and Software development. 6- Sigma is a set of tool and process for improvement. It was developed by Motorola Company in 1986 and became a center strategy for General Electric in 1995. Lean is a systematic method for the elimination of waste within a manufacturing process.Essentially lean is a centered on making obvious what adds value by reducing everything ells. Kaizen is the combination of tow Japanese words: Kai means change/ make better and Zen mean good. Some people translate Kaizen as continuous improvement and others defined Kaizen a "self changing for the best". Kaizen or Good Chang is one time or continuous, large or small is same as Improvement in English. When it is used in business or laboratory is refer to activities that commonly improve al l functions and involved the employees from the director to technician of the lab. The major laboratories in the USA, Europe and some other couturiers are using the combination of two or three of these QC program in the last 20 years in summary: 6 sigma gave Quality, Consistency, accuracy and stability Lean gives you lab: Safety , Speed , Quality and fewer waists. Kaizen :Provide continuous improvement, Good change, Participation of all employs Results: Assurance of lab results by Dr and patients, Cooperation of all employs, less turnaround time and more benefits for the lab.

Keywords: Quality management, Six Sigma, Lean, Kaizen. 5S

W6

Fatty Acid Oxidation Defects and Its Clinical Significance

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Fatty acid beta-oxidation is an essential energy producing pathway, in particular, in the condition of reduced energy supply from carbohydrate. Therefore, fatty acid oxidation defects (FAODs) often become symptomatic during a condition such as reduced caloric intake due to prolonged starvation, or increased energy expenditure like infection or diarrhea. Symptoms of FAODs may be basically due to energy deficit, including acute encephalopathy, sudden infant death, or myopathy-like illness. The routine laboratory tests often show elevation of CK, LDH, AST or ALT, and hypoglycemia and hyperammonemia. FAODs may be clinically divided into 3 types: (1) Severe form (neonatal onset): patients are often fatal in early infancy due to profound hypoglycemia, and cardiomyopathy; (2) intermediate form (juvenile onset): children have intermittent episodic attacks like acute encephalopathy, or even sudden death with hypoglycaemia or liver dysfunction following infection or diarrhea; (3) Myopathic form (late onset): patients often have an onset after adolescence or adulthood with exercise-induced episodes of lethargy, myopathy-like symptoms, myalgia, myogloburinuria, or liver dysfunction. Many of these patients have normal intelligence and longlife span, but suffer from unfavourable QOL. Diagnostic approaches for FAODs include: 1) Clinical course characteristic for FAODs; 2) Abnormalities in routine biochemical tests (BS, NH3, CK, LDH and others); 3) Blood acylcarnitine (AC) analysis using MS/MS; 4) Urinary organic acid (OA) analysis using GC/MS; 5) Enzyme evaluation assay using HPLC, or in vitro probe (IVP) assay; 6) gene analyses. Treatments for FAODs include: 1) Avoiding long fasting during childhood; 2) Early infusion of glucose during illness or in the acute condition; 3) Carnitine is given for patients with carnitine uptake defects, but there is still a controversy whether carnitine should be administered for FAODs; 4) Dietary therapy includes MCT milk/oil (for long-chain FAODs), and high carbohydrate/low fat diet, which may be not so strict. 5) Bezafibrate (BEZ), a hypolipidemic agent, is expected as a new treatment option for FAODs. By referring the following cases, we would like to discuss the outline of the clinical significance of early and correct diagnosis of FAODs. CASE 1: 1 year-old boy with medium-chain acyl-CoA dehydrogenase (MCAD) deficiency, retrospectively identified after infantile sudden death. CASE 2: 21-years-old woman with very-long-chain acyl-CoA dehydrogenase (VLCAD) deficiency, presenting with repeated exercise-induced myopathy after adolescence. CASE 3: 2 year-old boy with the intermediate form of glutaric acidemia type 2 (GA2), for whom BEZ showed a significant beneficial effect. CASE 4: Neonatal onset form of mitochondrial trifunctional protein (TFP) deficiency, and prenatal diagnosis performed for the next two pregnancies.

W7

The Sample Referral Systems Amongst Laboratories in Europe

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In this workshop de demands in relation to Service Agreements and Choosing the Referral Laboratories, as worded in ISO15189: 2012, will be discussed. The situation in Europe concerning consolidation of medical laboratories leads to big laboratories which can offer a lower price. This has tremendous effect on the way government and health security bodies want to regulate laboratories. It will be discussed with The Netherlands as an example. The quality as intended in ISO15i89 is not just about the quality of the numbers generated, and efficiency, but as well about consultation and efficacy. In the second part the position of EFLM in relation with the draft IVD Regulation will be presented. This is intended to replace the present TVD Directive, which has several shortcomings.

W8

Significance of Occult Hepatitis B Infection (OBI) Diagnosis in Clinical Settings

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Occult hepatitis Binfection (OBI), or persistent HBV viremia in surface-antigen-HBsAg-negative patients, has been recognized as a medical concern during the last decade. The exact magnitude, pathogenesis, and clinical relevance of OBI are unclear.Many explanations have been offered for the pathogenesis of OBI, ranging from the inability of standard immunoassays to diagnose OBI to the involvement of versatile virus–host factors.OBI/could be found in different population and clinical settings with no apparent distinguishable clinical parameters. In our laboratory, a range of sera from HBsAg negative patients from different clinical settings including cryptogenic cirrhosis, vaccinated high-risk individuals and some serodiscordant patients etc. have shown HBV DNA positivity.No association between the presence of OBI and biochemical (ALT/AST) and serologic (anti-HBc) pictures was found of those tested samples. In molecular analysis, a portion of samples did contain surface protein mutations. We believe that OBI should be suspected in any clinical situations regardless of HBV serological profiles.

Keywords: Occult hepatitis B infection- HBsAg negative HBV DNA positive-.hepatitis B virus cryptic infection

W9

Quality Control and Quality Assurance in Immunology and Serology Laboratory

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A clinical laboratory test could be useful for diagnosis, ifthe result was accurate and precise. According to numerous variety of immunologic tests and immunological methods, as well as insufficient experience of some recently employed personnel with quality control methods; the rate of errors in Immunology sections could be rather high. Thus accession to acceptable quality in quantitative and qualitative Immunology tests needs a sufficient knowledge in quality control methods. From the point of quality assurance; a result will be reliable if the pre-analytical, analytical and post-analytical steps are monitored and the errors are reduced to the least amount in the laboratory. Furthermore, from the point of quality control, the patients' results will be satisfactory if internal quality control results are in acceptable range and cope with routine quality control rules and also show desirable accuracy and precision. In this workshop, first of all, we will overview routine immunology and serology tests; then the common causes of random and systematic errors, as well as methods of determination of accuracy and precision will be talked over. Afterwards, a simple and practical method will be introducedfor internal quality control, determination of statistical data and illustration of quality control charts. Finally, the key notes to reduce the probability of random and systematic errors and some more practical quality control rules which could be helpful during the interpretation of immunological tests will be discussed.

W10

Criteria for Good Laboratory Practice

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Medical laboratory for demonstration of their good practices shall to have some criteria. Implementation and use of general and special standards have a very important role for improvement of these criteria. Thus the flowing criteria can be indicators that who much coherent is a laboratory with good practices. The flowing criteria introduced in this field: 1- Quality improvement criteria 2- Personal and patient safety improvement criteria 3- Personal competence criteria 4- Satisfactory improvement of medical laboratory coordinator criteria 5- Maintain of healthy environment criteria 6- Improvement of social responsibility criteria Thus, use of these criteria by medical clinicians, that all of them is related of national and international standards can be commercial and scientific for implementation of standards in IRAN.

W11

Personalized Diagnostics and Treatment of Breast Cancer

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Personalized medicine is an extension of traditional approaches to understanding and treating illness.Since the beginning of the study of medicine, physiciancs have employed evidence found through observation to make a diagnosis or to prescribe treatment. In the past, this was presumably tailored to each individual , but personalized medicine makes treatment more specific. Personalized medicine has a vision to avoid a costly and prolonged trial and error approach that can leave the patient anguishing unnecessarily from side effects, while simultaneously losing precious time in the fight against the disease. We developed new test, termed as oncoassay, which is a hybrid assay which combines immunohistochemical analysis, gene expression profiling and tumor characteristics. This test can help differentiate woman who might benefit from chemotherapy versus those that might not. The test analyzes the patterns of several genes within the cancer cells to help predict how likely it is that a women·s cancer will recur within 10 years after initial treatment and how beneficial chemotherapy will be to her. In addition, oncoassay support physicians to plan a personalized therapy for cancer patients. At workshop, we will introduce you first to the basic biology and pathology of breast cancer and continue the workshop with conventional medical interventions for treatment of breast cancer.After that, you will haer about the basic concepts of personalized medicine and its application for diagnostics and treatment of breast cancer. There will also be discussions involving physicians, biologist, pathologists and regulatory bodies on the improvements and challenges of personalized medicine and its practical impact on breast cancer medicine.

W12

Quality Control and Interpretation of Laboratory Tests of Thyroid Hormones For Nursing and Midwifery

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The thyroid glandis one of the largest endocrine glands and consists of two connected lobes. It produces thyroid hormones, the principal ones being triiodothyronine (T3) and thyroxine (T4). These hormones regulate the growth and rate of function of many other systems in the body. T3 and T4 are synthesized from iodine and tyrosine. The thyroid also produces calcitonin, which plays a role in calcium homeostasis.The thyroid is the storage site of >90% of the body's iodine content.Organification, coupling, storage are 3 steps in producing thyroid hormones. Each of these needs transporters and specific enzymes which contribute to produce and release of thyroid hormones. The most common thyroid disorders are hypothyroidism and hyperthyroidism.Given the importance and impact of thyroid hormones in the body's metabolism, recognition of confounding factors during analysis of these hormonesresult decision making better in the diagnosis and treatment of thyroid disease. Many diseases also affects the thyroid gland and cause changes in thyroid hormones;Therefore, understanding of these diseases and their impacts on the thyroid hormones, leading to the attainment of a certain result, and will be better diagnosis of thyroid diseases.

W13

Therapeutic Anti Cancer Drug Monitoring

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Therapeutic drug monitoring (TDM) may be defined as the use of drug or metabolite monitoring in body fluids as an aid to the management of therapy (the term therapeutic drug management is now also employed as an alternative description). Since antiquity, physicians have adjusted the dose of drugs according to the characteristics of the individual being treated and the response obtained, and this practice is easiest when the response is readily measurable, either clinically (e.g. in the case of antihypertensive drugs, analgesics or hypnotics) or with an appropriate laboratory marker (e.g. in the case of anticoagulants, hypoglycemic agents or lipid-lowering drugs). Dose adjustment is much more difficult (but no less necessary) when drug response cannot be rapidly assessed clinically (e.g. in the prophylaxis of seizures or mania), or when toxic effects cannot be detected until severe or irreversible (e.g. nephrotoxicity or ototoxicity). Provided that certain basic conditions are satisfied and appropriate analytical methods are available, the plasma concentration of a drug or metabolite may serve as an effective and clinically useful surrogate marker of response in these cases. However, it must be stressed that TDM is not simply the provision of an analytical result but a process that begins with a clinical question and continues by devising a sampling strategy to answer that question, determining one or more drug concentrations using a suitable method and interpreting the results appropriately.

Keywords: TDM, Therapeutic, Monitoring, Pharmacokinetic, Pharmacodynamics, Pharmacogenetics, Anti canser drugs

W14

aPediatric Reference Intervals: Theory and Practice Establishment of the CALIPER Database

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Clinical laboratory reference intervals provide valuable information to medical practitioners in their interpretation of quantitative laboratory test results, and therefore are critical in the assessment of patient health and in clinical decision-making. The reference interval serves as a health-associated benchmark with which to compare an individual test result. Unfortunately, critical gaps currently exist in accurate and up-to-date pediatric reference intervals for accurate interpretation of laboratory tests performed in children and adolescents. These critical gaps in the available laboratory reference intervals have the clear potential of contributing to erroneous diagnosis or misdiagnosis of many diseases. To address these important gaps, several initiatives have begun internationally by a number of bodies including the KiGGS initiative in Germany, the Aussie Normals in Australia, the AACC-National Children Study in USA, the NORICHILD Initiative in Scandinavia, and the CALIPER study in Canada. The CALIPER project has begun to substantially close critical gaps that exist in pediatric reference values. Normative values have so far been based on a study of healthy community children recruited in daycares, schools and community centers. The initiative has made considerable strides in establishing reference intervals for a number of vital laboratory tests. The goal of the project has been to provide highly specific reference values for children and adolescents of different ages, genders and ethnic origins. CALIPER studies have yielded remarkable age- and gender-dependent concentration patterns for many biomarkers, yielding vast amount of new and novel information on biomarker level changes during child development. A comprehensive database of age and gender specific pediatric reference intervals for a larger number of assays has been developed based on a large and diverse healthy children cohort.Substudiesconducted using CALIPER sampleshave helped to elucidate the methods required to transfer reference intervals between different laboratory testing systems. Data from all phases of the project are currently available through the CALIPER website www.caliperproject.com and www.caliperdatabase.com, which receives a large number of unique hits per month by physicians and laboratory professionals downloading the information. In order to improve access to CALIPER data and ensure effective knowledge translation, the team has recently developed a smartphone application for Apple and Android softwareto allow for rapid access to reference intervals by pediatric healthcare centresglobally.CALIPER has also recently studied examined biologicalvariation for 38 biochemical markers and has established analytical quality specificationson the basis of biological variation for commonassays in a pediatric population. In the current workshop, I will discuss the recently published CALIPER reference interval database and the results of some of the most recent studies on cancer markers, metabolic disease markers, and special chemistry analytes. The CALIPER database is based on a multiethnic population examining the influence of ethnicity on laboratory reference intervals. Thus the database has proved to be of global benefit and isbeingadopted by hospital laboratories worldwide.

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Laboratory & Diagnosis

Official Journal of Iranian Association of Clinical Laboratory Doctors

Vol. 6, No. 26, Supplement Issue, April 2015