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Primary Immunodeficiency Diseases

The Third International Congress of
Immunology, Asthma & Allergy

Invited Speaker

A-10- 230-1

AIDS and Nursing Care

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Objective: AIDS is a pandemic disease. Nursing care directed towards patients with HIV/Aids is challenging, since all organ systems are potential targets of infections or cancer. They must be directed towards more complex and continuous interventions for a long, good quality life. The aim of this study was to review of "the nursing care of patients with HIV/AIDS".

Material and Methods: Literature search was limited to English and Persian databases. We searched ISI Web of Science, Science Direct, Scopus, Magiran, SID and IranMedex, Medline, EMBASE, CINAHL, PubMed from 2000 to 2016. In addition, the references of articles retrieved were searched for additional citations. The search yielded articles, the last guidelines in the WHO and other relevant sites.

Results: The results showed that Nursing Care of Patients with HIV/AIDS" in facilities ranging from the primary-level health center to the tertiary-level hospital who work in a variety of roles to provide care to those with HIV. Nurses provide life-saving and life-enriching care throughout the world. Often they are the first provider—or even the primary provider—for patients with HIV. Nursing care is established according to patients' needs, as well as their clinical characteristics, and should be based on humanized, contextualized and integrated health care. Holistic nursing intervention considers the totality of the individual living Regarding the care of patients with HIV/AIDS, it is worth noting that nursing work is provided in all stages of life, (1) physiological domain, (2) psychological domain, (3) spiritual domain, (4) socio-economic domain, (5) cognitive domain, and (6) environmental domain contributing to improve the quality of life of patients and the provision of quality care services.

Conclusion: This disease is complicated by many emotional, social, and ethical issues. Therefore, care plans and interventions for patients with HIV/Aids must be individualized in order to meet the patients' needs, help them face the reactions to antiretroviral therapy, and reinforce social and emotional support and adherence to treatment. Therefore, the successful identification of and intervention in HIV related problems rests in the unique relationship between nurse and patient sharing as collaborators in the healing experience.

Keywords: Nursing care, HIV/AIDS, Interventions

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Invited Speaker

A-10-162-1

Primary Immunodeficiency Disease and Cancer

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Objective: In primary immunodeficiency (PID), immune system cannot fight appropriately against infections caused by bacteria, viruses, or fungi, so it is unable to protect the body against them. Whenever the immune system does not play its role, the ability of body for protecting the body against cancer diminished, so in PID disease the body is not able to protect from cancer. After infections, cancer is the second cause of death in PID patients.

Material and Methods: Studies related to PID and cancer, and the ways of prevention and threat were reviewed and summarized.

Results: Even though there are a variety of malignancies in PID patients, Hodgkin and Non-Hodgkin are two of the most common malignancies. Factors such as genetic predisposition, impairment in removing the cancer cells, and iatrogenic factor could be the causes of cancer in these types of situations. Screening of PID patients should be considered. Measuring lactic dehydrogenase, uric acid and erythrocyte sedimentation rate are the ways of screening. Cancer in PID patient could be cure according to their PID condition and complication of the disease. Same as other cancer, chemotherapy, radiotherapy, antiviral agents and hematopoietic stem cell transplantation (HSCT) are different approaches to cure cancer in these patients.

Conclusion: By paying attention to the risk of cancer in patients involves with PID, it is necessary to make them aware of the risk of cancer and that screening is important. Family counseling prevents to marry family members with PID among themselves, and as a result, the risk of getting cancer will be decreased.

Keywords: primary immunodeficiency, patient education

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Invited Speaker

A-10-990-1

Approach to the Patient with Angioedema

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Angioedema is a potentially life threatening and heterogeneous disease. Based on its underlying pathophysiology, it is subdivided into histaminergic or kininergic and according to its type; it is classified into acquired or hereditary.
Acquired angioedema has four subtypes: 1) Idiopathic Histaminergic, responsive to antihistamines 2) Idiopathic Nonhistaminergic that is not responsive to antihistamines, corticosteroids, and epinephrine 3) Acquired C1 inhibitor deficiency with no family history that presents after 40 years old. 4) ACEI-related angioedema.
Hereditary angioedema is subdivided into 1) Genetic C1 inhibitor deficiency with two subtypes (type 1 & 2), and 2) angioedema with normal C1 inhibitor that is likewise divided into two subtypes (one with mutation in Factor XII and other with yet unidentified cause.
Health provider physician should be familiar with these seven categories subdivisions and their characteristics, take comprehensive history, make physical examination, and request appropriate laboratory tests to accurately make a definitive diagnosis. In emergency management of angioedema first we should treat the symptomatic patient with rescue medications and then make diagnostic measures to sub classify it to its definitive diagnosis to tailor the treatment to the specific subtype of the disease. Here we discuss these topics in diagnosis and management of patients.

Keywords: Angioedema
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Invited Speaker

A-10-910-1

Newborn Screening and early diagnosis of Severe T-cell and B-cell Lymphopenia using TREC/KREC Assay

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Objective: Primary immunodeficiency disorders (PID) are a heterogeneous group of genetic disorders resulting from quantitative or functional defects in immune cells. Recently, T-cell receptor excision circles (TRECs) and κ-deleting recombination excision circles (KRECs) have been used for the detection of T and B cell lymphopenia in newborn screening programs based on region-specific cutoff levels. Here, we report the newborn screening program for obtaining the cutoff levels for TREC and KREC copy numbers that may be applied in our newborn screening program and as a diagnostic tool in infants with a family history of PID in Iran.

Materials and methods: DNA was extracted from a single 3.2mm punch from dried blood spots collected from 2160 anonymized newborns, which were obtained from two major referral health centers for newborn screening between 2014 and 2016. Samples from thirty patients with a definite diagnosis of severe combined immunodeficiency, X-linked agammaglobulinaemia (XLA), ataxia telangiectasia (AT) and twenty-five healthy controls were used for determining the cutoffs. Samples from other patients including those with IgA deficiency (IgAD), Wiskott-Aldrich syndrome, Hyper-IgM syndromes (HIgM) and Dedicator of cytokinesis 2 (DOCK2) deficiency were considered as controls. TREC, KREC and beta-actin (ACTB) copy numbers were analyzed in all samples using triplex-

quantitative real-time PCR. The diagnostic efficiency of this method was evaluated using ROC curve analysis.

Results: Subsequent to statistical analysis, the cutoff values were calculated and obtained with a high sensitivity and specificity. Among the thirty cases with abnormal results (1.4%), twelve cases (0.6%) were retested and were subsequently shown to be in the normal range. Moreover, all of the positive, disease control patients were correctly identified.

Conclusion: Determining cutoff levels with a high sensitivity and specificity for both TREC and KREC is essential for correctly identifying children with severe forms of PID in newborn screening programs, whilst minimising false positive results. Early diagnosis of patients with PID enables early implementation of appropriate preventative measures and definitive therapies such as hematopoietic stem cell transplantation.

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Oral Presentation

A-10-83-1

Five Mutations in Six Families Possessing at Least one Member with Leukocyte Adhesion Deficiency I

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Objective: Leukocyte adhesion deficiency (LAD) is one of the rare immunodeficiency diseases clinically characterized by recurrent severe bacterial infections, periodontitis, delayed umbilical cord separation, absence of pus formation, periodontitis, delayed wound healing, and often persistent leukocytosis. Three types of the disease were discussed. With autosomal recessive inheritance and a prevalence of 1 in 1,000,000 live births, Type I (LADI) is caused by mutations in the gene ITGB2, located on chromosome 21 (21q22.3), encoding for CD18 protein. More than 110 distinct mutations in ITGB2 gene have been identified and registered at Human Gene Mutation Database (HGMD; http://www.hgmd.cf.ac.uk/ac/all.php).This study aims to find the disease causing mutations in ITGB2 gene for helping future life in patient families via genetic counseling and prenatal diagnosis.

Material and Methods: All of the patients with LAD1 diagnosis in the base of Flow cytometry (defect in CD18 and CD11 a, b, c) who were referred to IARRI during 2 years entered the study. 2 mL EDTA blood was obtained from all patients and their parents and genomic DNA was extracted. Polymerase chain reaction (PCR) for encoding exons and exon-intron boundaries of ITGB2 gene was performed. PCR results were direct sequenced in both orientations.

Results: Sequencing amplified regions by PCR revealed a total of five different new mutations in five exons. These included three missense mutations, (c.382G>A in exon 6, c.715G>A in exon 7 and c.850G>A in exon 8) and two deletions (c.1907delA in exon 15 and c.1590_1594delCGGGC in exon 13). Mutation c.1907delA was found in two unrelated families. The last mutation was not previously reported. In fact, four out of 5 mutations have been reported previously. However, we find the mutation c.1590_1594delCGGGC neither in HGMD nor in other human mutation databases. Deletion of 5 nucleotides in this mutation results in a frame shift in open reading frame of CD18 protein and causes a premature stop codon at that position, p.Tyr530*. In all cases, mutation found in the patients was observed in their parents.

Conclusion: The found mutations in this study can be used for genetic counseling and prenatal diagnosis of LAD I.

Key words: LADI, ITGB2 gene, CD18, HGMD, frame shift

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Oral Presentation

A-10-84-1

An Overview on Hyper IgE Syndrome Patients Detected in Immunology, Asthma and Allergy Research Institute (2012-2015)

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Objective: Hyper-immunoglobulin E syndromes (HIES) are a group of rare primary immunodeficiencies characterized by a triad of recurrent bacterial or viral respiratory infection, skin abscesses with chronic eczema and elevated serum IgE levels. HIES have two common genes: *STAT3* and *DOCK8* with respectively autosomal dominant (AD) and autosomal recessive (AR) inheritance. We aimed to identify the molecular basis of these genes in HIES patients

Material and Methods: Twenty-nine HIES suspected patients referred to the Immunology, Asthma and Allergy Research Institute (IAARI) between 2012 and 2015 were enrolled in this study due to their inclusion criteria. HIES scoring based on NIH questionnaire and subsequently immunological screening tests was done for each patient. Patients were divided by "Homozygosity Mapping" to two groups of heterozygous or homozygous and genetic study was done by PCR considering the priority of *STAT3* or *DOCK8* gene respectively.

Results: Three out of 6 STAT3 mutations were seen in hot spots and the rest in other locations. Ten *Dock8* mutations were detected, among them seven revealed large deletions. Totally, 16 out of 29 showed mutations in *STAT3* or *DOCK8*. The mean age of HIES patients was 12.5 years (1.5-30) with a range of IgE level between 2500 to 42000 IU/mL and eosinophilia differs between 80 to 21200/µL. Recurrent pneumonia and skin abscesses with dental and skeletal abnormalities was the most prevalent problem of patients with *STAT3* mutation. Severe and persistent viral infections, recurrent pneumonia, and CNS manifestations were seen in DOCK8 deficient patients. During the four years of study, unfortunately 7/10 of our DOCK8 patients died but all STAT3 patients are alive.

Conclusion: The clinical phenotypes of the presented patients in both groups are consistent with that of other reports. Genetic study showed that half of the *STAT3* mutations were in hot spots and half of them were seen in other locations. In DOCK8 group, the mutations were different from other reports and interestingly new mutations were found. *DOCK8* deficiency was mostly due to large deletions. Molecular diagnosis of this gene is a useful approach for timely Hematopoietic Stem Cell Transplantation as a firm therapeutic plan due to deleterious

consequences of this syndrome. In addition, the definitive prenatal diagnosis could prevent the birth of another patient child in these families.

Keywords: Autosomal dominant, Autosomal recessive, DOCK8, Hyper IgE Syndrome, Immunodeficiency, STAT3

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Oral Presentation

A-10-440-2

Demographic, Clinical and Laboratory Findings in Patients with Hereditary Angioedema: Second Report from "Iranian National Hereditary Angoiedema Registry"

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Objective: Hereditary Angioedema (HAE) is a rare autosomal dominant disorder caused by low serum levels (type I) or dysfunction (type II) of C1 Inhibitor (C1INH), which is characterized by subcutaneous and/ or submucosal edema attacks involving face, limbs, genitalia, gastrointestinal and respiratory system. HAE could give rise to fatal laryngeal edema, acute abdominal pain leading to unnecessary emergency surgeries, and reduced quality of life. Therefore, the aim of this study was to investigate and report the demographic, clinical and laboratory findings of patients registered in Iranian HAE registry (IHAER).

Material and Methods: The patients referred (2006-2016) to Immunology, Asthma and Allergy Research Institute (IAARI) with symptoms suggestive of HAE were investigated (after signing informed consent form) using a questionnaire and laboratory tests. The patients with a definite diagnosis of HAE (type I, II) based on low serum levels of C4 and C1INH quantity/quality accompanying with suggestive clinical findings (after ruling out other possible etiologies) were enrolled into this study. Moreover, in some cases genetic analysis reconfirmed laboratory results.

Results: Among 80 patients registered in IHAER with definite diagnosis of HAE (Type I, II; 48.8%, 51.3%) 30 patients belonged to children and adolescents group (aged ≤ 21). The median symptoms age-onset and median diagnostic delay were 11 (min, max; 1, 72) and seven (min, max; 0, 39) years, respectively. Physical trauma (69.7%) and emotional stress (57.6%) were found to be the most common triggers of attacks; however, 82% of patients reported spontaneous attacks as well. The most commonly involved sites were face and limbs. Moreover, laryngeal edema was reported in 56.1% of patients leading to death in three patients during this study.

Conclusion: HAE is a life-threatening disease diagnosed with significant delay possibly due to mistaking it for other disorders causing similar symptoms such as acute face and limbs edema. On the other hand, complete avoidance of emotional and physical stress as common HAE triggers could not be easily achieved. Thus, the outcomes of IHEAR in the form of scientific papers/reports is meant to inform health care providers, and policy makers about this rare disease, which would in turns, help with an earlier diagnosis, and improvement in patient care and quality of life.

Keywords: Angioedema, Hereditary, Delayed diagnosis, Registries, Laryngeal edema

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Oral Presentation

A-10-442-1

Steroid Induce of Avascular Necrosis of Femoral Head in Chronic Urticarial

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Objective: Chronic urticarial is a common allergic disorder that sometimes needs steroid therapy. Osteonecrosis of femoral head (ONFH), a cerebrovascular accident of femoral head gradually increased especially in the most vital period, 30-60 years of age, in young and active patients. Apart from idiopathic cause, trauma seems to be the most common and among the non-traumatic known causes, steroid therapy seems to be one of the major causes that in systemic route can induce it. Other causes are alcoholism, hematologic disease, and systemic erythematous lupus.

Case presentation: Here in we report a 36-year old female that due to chronic urticarial lesions received short and low dose of steroid that after two weeks developed right hip pain with limitation of motion that imaging performed and showed avascular necrosis of femoral head. Such low doses are very rarely inducing osteonecrosis of femoral head.

Keywords: Chronic urticarial, Corticosteroid, Avascular necrosis, Femoral head

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Oral Presentation

A-10-330-2

LPS-Responsive Beige-Like Anchor Gene mutation Associated with Possible Bronchiolitis Obliterans Organizing Pneumonia Associated with Hypogammaglobulinemia and Normal IgM Phenotype and Low Number of B Cells

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LPS-Responsive Beige-like Anchor (LRBA) deficiency is a disease, which has recently been described in a group of patients with common variable immunodeficiency (CVID) in association with autoimmunity and/or inflammatory bowel disease (IBD)-like phenotype. We here describe a 10-year-old boy who experienced recurrent infections, mainly in the respiratory system, associated with thrombocytopenia and anemia. Immunological workup showed low numbers of B cells and low IgG, but normal IgM levels. In spite of therapeutic doses of antibiotics, antivirals, and antifungal agents, in addition to immunoglobulin replacement therapy, he developed disseminated involvement of both lungs with peripheral nodules; transbronchial lung biopsy revealed possible bronchiolitis obliterans organizing pneumonia (BOOP). Combined homozygosity mapping and exome sequencing identified a homozygous LRBA mutation in this patient (p.Asp248Glufs*2). Such clinical and immunological findings have not been described to date and illustrate the broad and variable clinical phenotype of human LRBA deficiency.

Keywords: Hypogammaglobulinemia, LRBA deficiency, Hyper IgM, Bronchiolitis obliterans organizing pneumonia
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Oral Presentation

A-10-68-1

Cytomegalovirus (CMV) Pneumonia as a First Presentation of Severe Combined Immunodeficiency

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Objective: A 5-month old girl came to our hospital because of one-month fever, cough and dyspnea. She was first product of a no consanguineous marriage, with birth weight of 3.2 Kg. The infant was gaining weight normally and routine vaccination was done for her. The infant had been exclusively breast fed until date.

Material and Methods: Her parents complain that, 1 month ago she started nonproductive cough and fever. On chest x-ray, thymus was not seen and patchy shadowing and atelectasis were reported in hilar region that progress rapidly to white lung appearance in one week. The patient admitted to Pediatric ICU because of respiratory distress with hypoxia.

Laboratory investigations revealed positive IgM for cytomegalovirus (CMV) in serum with more than one million copy of virus. Gancyclovir was started and the patient condition improved in three weeks that Real time PCR showed less than 2000 copy of virus.

Results: In view of sever life threatening CMV pneumonia she was suspected for immunodeficiency, Immunological panel revealed hypogammaglobulinemia and T-B+NK+ lymphocyte subsets. HIV ELISA was negative in child and her mother.

Based on above findings severe combined immunodeficiency (SCID) was diagnosed. Rifampin and izoniazid prophylaxis for routine BCG vaccination, and trimethoprim sulphamethoxazole for pneumocystis carinii was started and she was scheduled for bone marrow transplantation.

Conclusions: The severe combined immunodeficiency is a pediatric emergency and it is necessary to increase the clinical suspicious. The early diagnosis and treatment in this case was lifesaving.

Keywords: Severe combined immunodeficiency, Cytomegalovirus (CMV), Pneumonia

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Oral Presentation

A-10-277-1

A Case of MHC Class II Deficiency with Normal CD_4^+ T Cell Counts

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Objective: Major histocompatibility complex (MHC) class II deficiency or Bare lymphocyte syndrome (BLS) type II is an extremely rare primary immunodeficiency disorder (less than 200 cases worldwide), characterized by the partial or complete absence of MHC class II-encoded molecules HLA-DR, -DP and –DQ. Laboratory features in these cases include normal B cell and CD_8^+ T cell and low CD_4^+ cell counts. Here, we report an interesting case of MHC class II deficiency with normal CD_4^+ T Cell counts that was diagnosed by Whole Exome Sequencing (WES).

Material and Methods: The case is an 8-month-old girl born from related healthy parents with an expired sister due to the same disease with no definite diagnosis. Patient was referred to due to the lack of response to therapy with antibiotics such as ceftriaxone, clindamycin, vancomycin, and admitted because of pneumonia and prolonged fever. Clinical examination revealed normal B cell and T cell and NK cell numbers and low serum immunoglobulin levels. The IVIG replacement and administration of broad-spectrum antibiotics and antifungal was started. Patient was subjected to genetic study and WES was performed. MHC class II expression was investigated looking for HLA-DR proteins on the surface of peripheral blood mononuclear cell (PBMC) by flow cytometry.

Results: A novel homozygous mutation in RFXANK gene (NM_001278728: exon5: c.G495A: p.W165X) was found that leads to a stop-gain mutation which can cause loss of function of protein. Sanger sequencing confirmed that patient is homozygous and parents (father and mother) are carrier heterozygous for this mutation. HLA-DR expression was negative, confirmed MHC II deficiency in this patient.

Conclusion: Presented case history is interesting not only because of the rarity of this form of PID, but also due to normal CD_4^+ T cell counts. In spite of the high risk of postoperative complications, we recommended hematopoietic stem cell transplantation (HSCT) as the only curative treatment. We also recommend WES as a powerful tool in the identification of genetic causes of primary immunodeficiencies.

Keywords: MHC class II deficiency, Primary immunodeficiencies, Whole Exome Sequencing, RFXANK gene

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Oral Presentation

A-10-293-1

Congenital Neutropenia: Report from Northwestern Iran

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Objective: Neutropenia is characterized by a decrease in circulating neutrophil counts and consequent infections. The present study was performed to describe the clinical and laboratory findings of patients with congenital neutropenia in northwestern Iran.

Material and Methods: The patients' records of 31 patients with congenital neutropenia out of 280 neutropenic patients who had been referred to Tabriz Children's Hospital during a 3-year period (2011-2014), were reviewed.

Results: Thirty-one cases (17 females and 14 male), with a mean age of 5.3 ±5.7 years, were diagnosed to suffer from congenital neutropenia. The disorders associated with congenital neutropenia were combined immunodeficiency (8 cases), severe congenital neutropenia (6 cases), common variable immunodeficiency (4 cases), severe combined immunodeficiency (2 cases), and metabolic syndrome (1 case). The median age of the onset of disease and diagnosis age were 26.2 ± 60.8 months, respectively. The most common clinical manifestations during the course of illness were otitis media (13 cases), pneumonia (12 cases), recurrent aphthous stomatitis, lymphadenopathy and gingivitis (11 cases). Four neutropenic patients died because of recurrent infections.

Conclusion: Neutropenia may occur in the context of the primary immunodeficiency disorders. Unusual, persistent, or severe infections always pose a speculation to search for an underlying immunodeficiency syndrome and neutropenia, to avoid further life-threatening complications as a result of any delay in diagnosis.

Keywords: Neutropenia, Immunologic Deficiency Syndromes, Infection, Iran

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Oral Presentation

A-10-181-1

Modulation of Neutrophil Extracellular Trap formation in Health and Disease

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The critical prompt innate immune response is highly built upon the influx of neutrophils from the blood stream to the site of infection. In the battlefield, neutrophils sense pathogen-associated molecular patterns (PAMPs) through their pattern-recognition receptors (PRRs) to launch a number of responses with the goal to defeat the invading pathogen. Neutrophils' wide spectrum of responses ranges from reactive oxygen species production (ROS), phagocytosis, cytokine secretion, and neutrophil extracellular trap (NET) formation. The NET scaffold is composed of nuclear chromatin, which is armed with antimicrobial proteins. DNA traps are able to ensnare and kill microbes. NETs impose deleterious effects on the host itself in addition to their antimicrobial activity. These hazardous effects mainly stem from pro-inflammatory and tissue-destructive activity of NETs. Therefore, it seems rational that NET formation is tightly regulated and not happening spontaneously. Positive and negative regulators of NET formation were investigated in a mechanistic fashion.

As unbalanced inflammation is harmful to the host, we aimed to find molecules, which are able to inhibit NET formation. Thus, we introduced the non-toxic agent tempol that efficiently blocked NET induction. We therefore proposed tempol as a potential treatment during inflammatory disorders where NET formation is out of balance. In quest for positive regulators of NET formation, we found the major addictive component of tobacco and electronic cigarettes, nicotine, as compelling direct inducer of NET release. Interestingly, nicotine is associated with exacerbated inflammatory diseases exerting its pro-inflammatory activity via acetylcholine receptor by targeting protein kinase B activation with no effect on NADPH oxidase complex in a ROS independent fashion. In consideration of neutrophils role in smoking-related diseases we propose targeting Akt could lower the undesirable effect of NET.

In conclusion, we identified new modulators of NET formation, which might have implications in forthcoming therapies.

Keywords: Neutrophil extracellular trap (NET), Tempol, Nicotine

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Oral Presentation

A-10-156-1

Antibody Response to 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine in Asplenic Patients with Thalassemia Major: A Randomized Clinical Trial Study

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Objectives: Thalassemia is an inherited form of hemolytic severe anemia that is associated with several complications including various infections. The purpose of this study was to evaluate the antibody response to 13-valent pneumococcal conjugate vaccine (PCV-13) and 23-valent pneumococcal polysaccharide vaccine (PPV-23) in a splenic patient with thalassemia Major.

Material and Methods: A randomized cross-over clinical trial was performed on asplenic patients with thalassemia Major between 2012 and 2013. Patients were divided into two equal groups. The first group received 13-valent pneumococcal conjugate vaccine (PCV) injected into the deltoid muscle at first and received 23-valent polysaccharide vaccine by the same way two months later. The second group received PPV vaccine at first and PCV13 two months later. Levels of serum antibody were checked before vaccination, at weeks 8 after the first injection and 2 months after the second injection in all of the patients and measured by enzyme-linked immunosorbent assay (ELISA). Each time, 0.5-ml dose of the vaccine was injected.

Results: Of total 50 patients, three cases were excluded due to lack of cooperation and avoiding vaccination. From 47 participated patients, 28 were male patients (59.6%) and 19 (40.4%) were female with age ranged between 20 to 44 years (average age of 29.6± 1.4 years). Pneumococcal IgG levels in the first group increased from 114.5± 87.7 to 1049± 720 U/ml (p=0.0001) and in the second group increased from 115±182.2 to 1497.3 ± 920.3 U/ml (P=0.0001).

Conclusions: It can be concluded that PCV vaccine before PPV can be more effective in asplenic thalassemia Major patients.

Keywords: PPV-23, PCV-13, Thalassemia Major, Asplenia

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Poster Presentation

A-10-167-1

Different Methylation Pattern of PBMC in SLE Patient

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Objective: Systemic lupus erythematosus (SLE) is a chronic autoimmune disorder characterized by involvement of multiple organ systems, loss of tolerance to self-antigens. Humoral autoimmunity is a distinctive feature of SLE and many patients have circulating autoantibodies directed against double stranded DNA. The pathogenesis of SLE is multifactorial e.g. epigenetic factors, such as DNA methylation plays a critical role in disease progression through affecting gene expression. Hypermethylation causes gene silencing and hypomethylation induces gene expression.

Material and Methods: Profile of CpG sites methylation pattern of SLE patients were extracted from Geo dataset. Then immune cells such as monocyte, B cell, T cell, Treg and Naïve-T cell were compared using logfc for level of methylation with limma package in SLE patients. Next, genes related to these CpG sites were distinguished between hypermethylation and hypomethylation sites. Signaling pathways, protein domain, function and gene ontology that associated with genes, were recognized by DAVID and their relation with SLE was detected.

Results: CpG sites were divided into two groups, hypermethylated and hypomethylated region in each type of cells. Important pathways that can be related to SLE, were B cell receptor signaling, NFKB pathway and T cell receptor pathway that have critical role in SLE pathogenesis. Important protein domains were immunoglobulin subtype, P60, ser/thr kinase active site domain and immunoglobulin-like fold that have very important role in SLE and disease progression.

Conclusion: Methylation of CpG sites were compared in different immune cells. Different methylation pattern and level were seen in CpG sites of different types of cells that lead different expression and pathway activation. Further analysis of these patterns can lead to identification of specific biomarkers in each type of peripheral blood mononuclear cells in SLE.

Keywords: CpG sites, Hypermethylation, Hypomethylation, Signaling pathway, Protein domains, Systemic lupus erythematosus

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Poster Presentation

A-10-83-2

Iranian Genetic Testing Registry for Primary Immunodeficiencies

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Objective: Nowadays genetic information is need to diagnose, treat, and generally manage different diseases. So genetic testing of immunodeficiency (PID) disorders is also of importance, especially for decisive diagnosis as well as bone marrow transplantation. Registration of information based on genetics has potential benefits for families possessing individuals with that disease for both present and future. This registry aims to collect genetics information about PID patients and their families' members.

Materials and Methods: All of the Iranian patients suspected to PID who referred to immunology, asthma and allergy research institute (IAARI) between 2007 and 2016have been investigated regarding to PID. After taking informed consent, screening tests for PID were performed completely. Genetics data of individuals after definite diagnosis were enrolled in the genetic registry.

Results: Genetic testing of 15 different PID diseases has been performed for more than 450 cases and collected in this registry. Of these 258 cases and their families had decisive mutation and genetic diagnosis. The rate of diseases was: Chronic Granulomatous Disease 22.17%, Severe Combined Immunodeficiency 21.33%, Wiskott-Aldrich Syndrome 10.46%, Congenital Neutropenia 8.36%, Leukocyte Adhesion Deficiency 7.53%, Griscelli 5.85%, Hemophagocytic Lymphohistiocytosis 5.23%, Angioedema 5.23%, Cystic Fibrosis 3.76%, Hyper IgE 2.92%, Hyper IgM 2.92%, X-linked Agammaglobulinemia 2.72%, Hermansky-Pudlak Syndrome 0.83%, Ataxia-Telangiectasia 0.41% and WHIM Syndrome 0.20%.

Conclusions: This registry can be valuable for making aware of patients including decisive diagnosis, genetic counseling, carrier detection and prenatal diagnosis. In addition, this is a bank of data for future research.

Keywords: Genetic Testing Registry, Immunodeficiency, Decisive diagnosis

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Poster Presentation

A-10-185-3

Pregnancy Outcomes in Patients with Rheumatic Diseases who were Referred to Number Rheumatology Clinics in Tehran

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Objective: Autoimmune diseases are common in women of childbearing age. These diseases have different effects on the mother and fetus during pregnancy and pregnancy outcomes for mother and fetus. Aim of this study in patients with rheumatic diseases so as to the result of this research, pregnant with the lowest possible complication for them.

Materials and Methods: This historical cohort study was conducted in two groups of patients. Group of women with rheumatic disease during pregnancy and non-infected control group of pregnant women. Information be based on questionnaires and medical records then the patients were collected pregnancy outcomes in the two groups were compared.

Results: The study was performed on 200 samples. Mean age in patient group was of 15/5 ± 11/31 76/4 ± 75/31 years in the patient group and the control group 34/5 ± 76/30 years. In the diseases, rheumatoid arthritis and lupus% respectively 7/35 and% 1/27 the highest percentage for six weeks' gestational age. It is the time of termination of pregnancy in the study 7/37 7/36 weeks and the patient group compared to the control group less is (p<0/05). Average weight pregnancy patient group is significantly lower than the control group (p<0/05). The risk of pre-eclampsia in pregnant women with healthy pregnant women is 11/2 (p<0/05<, 11/2 = RR). The risk of bleeding in early pregnancy in healthy women patients 96/1 (p<0/05<, 96/1 = RR) meaningful communication gestational diabetes, placental abnormalities and mode of delivery between the two groups (p>0/05) there are no maternal deaths, the highest disease was had scleroderma patients.

Conclusion: The risk of pregnancy outcomes in women with rheumatic disease, including bleeding in early pregnancy, pre-eclampsia and admitted to the ICU and the risk of fetal age less labor, abortion, and IUGR is more. However, today, with proper treatment, successful pregnancy mothers spend behind.

Keywords: Rheumatic diseases, Pregnancy outcome

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Poster Presentation

A-10-185-4

Maternal Complications of Pregnancy in Women with Rheumatoid Arthritis

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Objective: Rheumatoid arthritis is the most common rheumatic diseases that are common in women of reproductive age are affected. This disease has varying effects on the mother during pregnancy. Given the importance of this issue and maternal complications and the need to review, the aim of this study was to evaluate maternal complications of pregnancy in women with this disease.

Materials and Methods: In this cross-sectional study, 100 women with rheumatoid arthritis are referred to Shariati Hospital in Tehran during 90-89 years were selected. In a retrospective study of pregnancy and maternal complications pregnancy, records and medical records were collected by a questionnaire. Complications such as stillbirths, spontaneous abortions, delivery, pre-eclampsia and eclampsia. Data were analyzed using SPSS statistical software.

Results: The results showed that 8% of stillbirth, spontaneous abortion was 12%, 15% of pre-eclampsia, eclampsia 6% was observed. 40% of pregnant women in the NVD, in the case of delivery by 3%, in 27% of the Emergency C / S and in 30% of Elective C/ S The mean gestational age with a standard deviation equal to 2/ 37 Week 6/ 4 weeks, respectively.

Conclusion: Rheumatic diseases lead to an increased risk of pregnancy outcomes, such as stillbirth, miscarriage, pre-eclampsia is higher incidence of this complication increases the need for cesarean. So better strategies for screening and monitoring of rheumatoid arthritis in women in Iran due to its high prevalence, it seems imperative.

Keywords: Rheumatic diseases, Rheumatoid arthritis and pregnancy outcome

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Poster Presentation

A-10-221-1

Prenatal Findings of 22q11.2 Deletion Syndrome in Sverdlovsk Region (Russian Federation)

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Objective: Congenital heart defects (CHDs) are the most common of all birth defects. One of the most common syndromes associated with CHDs is del22q11.2 syndromes, which has an estimated prevalence of approximately 1 in 4000 live births. In our region the prenatal screening for aneuploidies and 9 microdeletion syndromes, including 22q11.2 is done by karyotyping and Prenatal BoBsTM technology of fetal cells. To assess the prevalence of del22q11.2 in prenatal population by indication for invasive procedure testing: abnormal ultrasound, advanced maternal age, increased risk for Down syndrome after maternal serum screening, other indications.

Materials and Methods: Descriptive study based on a retrospective anonymized cohort. All patients gave consent for the analyses. 2604 prenatal samples were analyzed by karyotyping and PnBoBsTM (PerkinElmer Wallac, Turku, Finland). 70 (2.7%) fetuses with congenital cardiac defects, associated with microdeletion syndromes were detected by US scanning. This pathology included atrial septal defect, Ventricular Septal Defect, Teratology of Fallot, Coarctation of Aorta and Truncus Arteriosus.

Results: Bobs analysis on all the 70 CHD fetuses revealed that only 3 (4.3%) out of them had the del22q11, 21 samples showed trisomy 21 (30.0%), 6 samples had trisomy 18 (8.6%), 5 trisomy 13 (7.1%), 1 monosomy X (1.4%). No additional chromosomal defects were observed in other 34 samples (48.5%). In addition, one case of del22q11.2 was detected without CHD, but with increased risk for Down syndrome after maternal serum screening.

Conclusions: In our general cohort the prevalence of del22q11 is 1 in 650 (4/2604). It is higher than previously estimated.

Keywords: Deletion 22q11.2 syndromes, Congenital heart defect

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Poster Presentation

A-10-182-1

Role of the DNA Damage Repair Kinase ATM in Innate Immunity

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The ATM kinase is a central component of the DNA damage repair machinery and redox balance. ATM dysfunction results in the multisystem disease ataxia-telangiectasia (AT). A major cause of mortality in AT is respiratory bacterial infections. Whether ATM deficiency causes innate immune defects that might contribute to bacterial infections is not known. Here we have shown that loss of ATM impairs inflammasome-dependent anti-bacterial innate immunity. Cells from AT patients or Atm (-/-) mice exhibited diminished interleukin-1β (IL-1β) production in response to bacteria. In vivo, Atm (-/-) mice were more susceptible to pulmonary S. pneumoniae infection in a manner consistent with inflammasome defects. Our data indicate that such defects were due to oxidative inhibition of inflammasome complex assembly. This study reveals an unanticipated function of reactive oxygen species (ROS) in negative regulation of inflammasomes and proposes a theory for the notable susceptibility of AT patients to pulmonary bacterial infection.

Keywords: ATM, DNA damage response, Innate immunity, Bacterial infection

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Poster Presentation

A-10-389-1

Genetic Diagnosis of Hereditary Angioedema Type I in Iran (Introducing One New Mutation)

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Objective: Hereditary Angioedema (HAE) is a rare autosomal dominant disorder that is caused by improper quantitative level or C1-inhibitor function and these lead to the HAE type I and type II, respectively. C1-inhibitor is a serine protease inhibitor, which controls the activation of complement system and regulation of the fibrinolytic, contact and coagulation systems. C1-inhibitor gene (SERPING1) is located in the q12-q13.1 sub-region of chromosome 11 and consists of eight exons. The aim of this study is genetic diagnosis of HAE type I patients.

Material and Methods: The patients who referred to Immunology, Asthma & Allergy Research institute (IAARI) between Jan 2006 to Jan 2014 with clinical phenotype of HAE (subcutaneous angioedema, abdominal pain, laryngeal edema), were entered this study. Twenty HAE type I patients were evaluated for genetic analysis of SERPING1 gene based on low levels of C4 and C1-inhibitor. Blood samples were obtained from these patients and after the DNA extraction from EDTA treated blood samples, polymerase chain reaction (PCR) was accomplished for coding exons (exon 2 to 8) of SERPING1 gene and PCR products were sequenced and the results were analyzed by Finch TV program.

Results: Among twenty patients from 15 families with HAE type I, 9 mutations in SERPING1 gene were identified in 12 patients. All mutations were in heterozygous

state except one new homozygous missense mutation (c.440T>A) in a patient. The others including one splicing defect (c.51+2T>C) in intron 2, three frame shift mutations in exon four (c.650delG) and exon 8 (c.1356_1357delTG, c.1264delT), three missense mutations in exon 2 (c.5C>T), and exon 8 (c.1477G>A, c.1442T>C), and one nonsense (c.1480C>T) mutation in exon 8 which are previously reported.
Conclusion: HAE is a life-threatening disease, and if laryngeal edema occurs possibly leads to death. Therefore, early genetic diagnosis in the families who carries the mutation with symptomatic or asymptomatic phenotype of disease could be helpful for prevention of acute edema and proper treatment in HAE patients and other family members.

Keywords: Hereditary angioedema, Autosomal dominant, C1 inhibitor
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Poster Presentation

A-10-393-1

Registry and Biobank Establishment of Inflammatory Bowel Disease, Suspected to Primary Immunodeficiency Diseases for the First Time in Iran

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Objective: Alterations in intestinal microbes and the immune system caused to the inflammatory bowel diseases (IBD), thereby suggesting that IBD might be an immunodeficiency rather than an excessive inflammatory reaction. IBD, suspected to primary immunodeficiency diseases (IBDSPID) registry and biobank can support an extensive range of research intended to improve the prevention, diagnosis, and treatment of illness and the promotion of health throughout society. Therefore, we launched the registry and biobank of IBDSPID for the first time in Iran.

Materials and Methods: Among of 365 IBDSPID patients, 39 were enrolled to our study. The inclusion criteria were:(1) IBD diagnosis before 5 years of age, (2) Resistance to conventional therapy of IBD, (3) Severe IBD, (4) Signs of SPID including recurrent sinus or ear infections or pneumonias within a one-year period, failure to thrive, poor response to prolonged use of antibiotics, persistent thrush, skin abscesses, a positive family history of PID. DNA, RNA, and cDNA were synthesized. Achieved data was computerized using the MySQL Database.
Results: The use of whole-blood specimens to obtain RNA and cDNA yields large quantities of high-quality DNA. The mean age was 32.92± 15.90 years old. Out of 39 patients, 51.3% were males. The Ulcerative colitis (79.5%) was the most common type of diagnosed IBDSPID. The majority of patients (50.0 %) had severe IBDSPID. Age at onset was after 17 years old in 65.8% of patients. Resistance to drugs and consanguinity was 12.9% and 47.4%. The percent of patients with history of autoimmune, allergy, and PID was 33.3, 33.3, and 10.3 respectively. The rate of consanguinity was 47.4%. Family history of IBD, autoimmune disease and allergy, was, 15.4%, 25.7%, and 28.2%; respectively. The family history of PID and malignancy has seen 2.6 and 20.5% of patients. The collaborative project with other centers on relation between IBD and PID and their genetic background has been started in our IBDSPID biobank and registry.
Conclusion: The IBDSPID biobank and registry in our region provides useful data on IBD especially with SPID that could be valuable for future genetic and molecular study to find out more about the relation between IBD and PID and increase the awareness about this disease for determination of prevalence, early diagnosis and effective treatment.

Keyword: Biobank, Inflammatory bowel diseases, Primary immunodeficiency disease, Registry, Ulcerative colitis

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Poster Presentation

A-10-400-1

Iranian Mendelian Susceptibility to Mycobacterial Disease (MSMD) Registry and Biobank in Isfahan Immunodeficiency Research Center (IIRC)

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Objective: MSMD is considered as one of the rare immunodeficiency syndromes characterized by susceptibility to develop infections caused by weakly virulent mycobacteria (BCG and environmental non-tuberclosmycobacteria (NTM). It has been demonstrated that host genetic factors have crucial role in defense against mycobacteria. Therefore, it is required to design a registry and biobank for following reasons: monitoring incidence and prevalence of MSMD in Iran, facilitating researches aiming at identification of genetic mutations with far-reaching consequence in this population and rising health care quality. In this study, we tried to set-up a registry and biobank for MSMD in IIRC.
Material and Methods: Registration, based on the diagnosis of patients suspected to MSMD including disseminated or local infection caused by non-mycobacteria tuberculosis, multiple organ infection caused by mycobacteria tuberculosis (Mtb) and family history of mycobacterial infection without any directly exposure, has been performed. To be begin, after signing the informed consent from individual patients referred to IIRC and drawing their blood, peripheral blood mononuclear cells (PBMC) of every sample had been isolated from a partial whole blood volume utilized for: 1) investigation of functional tests 2) making EBV-immortalized B cells, 3) preparation of cryopreservation of PBMC. In addition, DNA was extracted from the remaining of whole blood to establish DNA bank. Following, all demographic data obtained from filled questionnaires were entered in computerized database program designed for that.
Results: The Iranian MSMD Registry and Biobank was established in IIRC. We registered 35 Iranian patients in our study with mean age of 17.89±15.3 including 42.9% female, 57.1% male from 1996 to 2016. 57.7% of patients came from consanguineous parents. Regarding the results, NTM infections was the most common infection among cases (74.3%), including 51.4% BCG-osis. The second frequent one is multiple-organ Mtb infections (25.7%). In addition, the rate of osteomyelitis within cases was 14.3%.
Conclusion: The Iranian MSMD Registry and Biobank was set up to rise health care quality for patients with susceptibility to MSMD. Although Iran is considered

as one of the country with high rate of tuberculosis (TB) prevalence and consanguineous marriages, genetic research can lay out new vaccine strategies.

Keywords: Mendelian Susceptibility to MycobacterialDisease (MSMD), Immunodeficiency disease, Registry, Biobank

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Poster Presentation

A-10-401-1

Use of whole Exome Sequencing in the Identification of Genetic Causes of Primary Immunodeficiencies

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Objective: Primary Immunodeficiencies (PID) are genetically inherited disorders characterized by defects of the immune system, leading to increased susceptibility to infection. Due to the variety of clinical symptoms and the complexity of current diagnostic procedures, accurate diagnosis of PID is often difficult in daily clinical practice. The success of whole exome sequencing (WES) to identify mutations causing single-gene disorders has been well documented. In this study, we applied WES to detect disease-causing mutations in more than 300 PID-causing genes.
Material and Methods: Individuals with PIDDs were investigated using WES. Analytic approaches initially focused on >500 known or candidate PIDD genes, but were non-exclusive and were further tailored based upon clinical data, family history and immunophenotyping.
Results: The disease causing mutations were identified in 87 (75%) unrelated probands. Casual mutations were mostly novel (>80%) and were found in 49 known PID-causing genes mainly in DOCK8 (n=8, Autosomal recessive hyper-IgE syndrome), ATM (n=6, Ataxia Telangiectasia), WAS (n=3, Wiskott-Aldrich Syndrome), JAK3 (n=3, Severe Combined Immunodeficiency), RFXANK (n=3, MHC Class II Deficiency), DNMT3B (n=3, Immunodeficiency, Centromeric Instability and Facial Anomalies Type I) and 4 novel genes. Clinical diagnosis was revised in majority (>60%) of patients and management was altered in nearly a quarter of them based on the molecular findings. Prenatal diagnosis has been carried out for 5 families.

Conclusion: WES has the potential to transform clinical molecular testing for established PIDs, allowing all PID differential diagnoses to be tested at once and plays a central role in the discovery of novel PID genes, leading to increased diagnostic yield, while decreasing both the time and cost of obtaining a molecular diagnosis. Given that treatment of PID varies by disease gene, early achievement of a molecular diagnosis is likely to enhance treatment decisions and improve patient outcomes.

Keywords: Primary Immunodeficiency, Whole Exome Sequencing, Diagnosis
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Poster Presentation

A-10-405-1

Pregnancy, Child Bearing and Prevention of Giving Birth to an Affected Child in Primary Immunodeficiency Disease (PID's), Lessons from Our Experiments

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Objective: Patients with primary immunodeficiency disease who survive to adulthood and willing to have a child mostly are worried whether immune deficiency affects their fertility or they can have healthy children. Hence, genetic consulting prior to being conceived is crucial to them. This study presents the PID cases and their management during uneventful pregnancy and carrying a baby with less complications and delivering healthy offspring.
Material and Methods: Between 1996 and 2016 PID patients confronting with childbearing and pregnancy enigmas have been evaluated and managed. A consulting team of clinical immunologist, clinical geneticist, and obstetrics were involved.
Results: We have followed and managed: 1) A CGD pregnant case with fungal sacral osteomyelitis few weeks after pregnancy. 2) A Pregnant CVID patient suffering from ITP who developed severe thrombocytopenia before delivery. 3) A Sever Neutropenic, JAGN1 deficient case who bypass two normal pregnancy and infections during pregnancy Also Managing the carriers and affected parents who

bypass the natural conception to guarantee the wellness of their child including: a) Selecting the gender of their embryo in a family with two affected X-linked Wiskott Alderich case. b) Using donated oocyte in a family with two affected children by autosomal recessive disorder, Ataxia Telangiectasia. c) Preimplantation genetic diagnosis (PGD) to give the opportunity to screen the embryos for a specific impaired gene detected in the affected sibling or parents also select a savior sibling to provide a matching bone marrow transplant for an already existing affected child. d) Prenatal genetic diagnosis in early gestational age for few families with history of an affected PID case.

Conclusion: Pregnancy in PID patients is more complex than normal population. Because, not only it has the chance of being inherited by the offspring similar to other genetic disorders, but also there are some risks for the mother if she has any kind of the immunity components defects. Therefore, consultation with a medical geneticist is indicated to choose the best available approach according to their situation and should be observe and follow by a clinical immunologist to ensure that the best possible safe care is provided.

Keywords: Pregnancy, PID, Genetic counseling

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Poster Presentation

A-10-422-1

Case Report: A ADA-SCID with CNS Involvement

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Objective: Severe combined immunodeficiency (SCID) is a rare genetic disorder (incidence of 1 in 5,00,000) characterized by absence of T cell and B cell and NK cell function. Children with SCID usually present in the first 6 months of life with sepsis, disseminated tuberculosis following BCG vaccine, chronic diarrhea, Pneumocystis carinii pneumonia and other severe infection. ADA deficiency is the second most common cause of SCID, accounting for 15% of cases. Babies with this type of SCID have the lowest total lymphocyte counts of all, and T, B and NK-lymphocyte counts are all very low). Both boys and girls can be affected. Lack of the ADA enzyme also leads to neurological problems such as cognitive impairment, hearing and visual impairment, low muscle tone and movement disorders.

Material and Methods: Case presentation: A 4-month-old girl first in birth order born from first-degree cousins that presented with cough and leukopenia and failure to thrive requiring 3 hospitalizations in past. He was born at full term with a birth weight of 2.900 kg and was on exclusive breast feeds. He had received BCG and first dose of OPV and DPT. The index case had no elder siblings. His CBC showed leucopenia with marked lymphopenia (TLC: 7.100X10^9/L, Lymphocytes: 1x10^9/L). Serum immunoglobulin (Ig) levels were as follows:

Results: Analysis of lymphocyte subsets by flow cytometry revealed the followings: CD3 (negative), CD4 (negative), CD5 (negative), CD7 (14%), CD8 (5%), CD16 (38%), CD19 (negative), CD20 (negative), CD56 (negative). In the first spiral brain CT SCAN hyperdense foci in basal ganglia in both side and some preventicular hyperdensity in favor of TORCH was detected.

Ig level: (all had been decreased) Ig G: 157 mg/cc, Ig M: 15 mg/cc , Ig A: 7 mg/cc , Ig E: 0.1 mg/cc Genetic study: In DNA sequencing with Sanger method ADA-SCID was established. Mutation “c.736>T, p.Gln264Ter” on ADA gene (NM_000022) was detected in a homozygous state in this sample

Conclusion: In DNA sequencing with Sanger method ADA -SCID was established. Mutation "c.736>T, p.Gln264Ter" on ADA gene (NM_000022) was detected in a homozygous state in this sample unfortunately the patient was died due to infections.

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Poster Presentation

A-10-424-1

Functional and Genetic Analysis of Mendelian Susceptibility to Mycobacterial Disease (MSMD) Patients Referred to the Dr. Masih Daneshvari Hospital, Tehran-Iran

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Objective: Mendelian susceptibility to mycobacterial disease (MSMD) is a rare congenital disorder characterized by susceptibility to clinical disease caused by poorly virulent mycobacteria, such as Bacillus Calmette–Gu´erin (BCG) or

nontuberculous mycobacteria (NTM). Known genetic etiologies of MSMD affect the IL-12–interferon (IFN)-γ immunological circuit, with mutations in six genes. Furthermore, germline mutations in the (IFNGR1, IFNGR2, STAT1, IL12B, IL12RB1 and NEMO). CYBB and in the IRF8 have been recently identified as the genes, which are responsible for MSMD. The occurrence of MSMD in patients born to consanguineous parents and in siblings strongly suggested that most cases followed an autosomal recessive (AR) mode of inheritance. Functional and mutation analysis was evaluated in suspected patients to MSMD.

Material and Methods: This study was performed on 23 cases at age 5-28 years old, which had mycobacterial Tuberculosis or NTM infections and suspected MSMD. Whole blood cell culture was performed in presence of rIFN-γ, rIL-12 and LPS for 24 and 48 h. The supernatants were assayed for IFN-γ, IL-12p40 by ELISA method. QF-T also has been done to all the patients. Flow cytometry for analysis of IFN-γ subunits has been conducted.

Results: All patients presented with complications of BCG vaccine in the form of localized lymphadenitis or disseminated BCG infection and chronic osteomyelitis. In-vitro studies showed that 3 cases had impaired response to IL-12. The adult patients had partial defects in IL-12 signaling. One patient mostly at age 5-8 had defects in IFN-γ signaling. In all cases mutation assays for defect loop of IL-12 and IFN-γ has been examined.

Conclusion: It is concluded that partial defects of IL-12/IFN-γ loop demonstrated at adult rather than pediatrics and mutation analysis with functional assays in combination with flow cytometry could give precise diagnosis of MSMD.

Keywords: PID, MSMD, NTM, Loop IFN-γ-IL-12

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Poster Presentation

A-10-468-1

A Clinical Presentation of IRAK-4 Deficiency

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Objective: We report the clinical and immunological features of a patient, with a history of multiple, Pseudomonas aeruginosa (PA) positive liver abscesses, because of underlying interleukin receptor associated kinase-4 (IRAK-4) immunodeficiency.
Material and Methods: We analyzed the production of interleukin 6 (IL-6) and interleukin 10 (IL-10) after stimulation with various Toll-like receptor agonists (TLR) by patient's whole blood leukocytes and adherent monocytes. The IRAK-4 genes were sequenced by standard techniques.
Results: The patient's monocytic cells were profoundly deficient in IL-6 and IL-10 cytokine response to a range of TLRs agonist. Meanwhile, we identified two mutations including M1V and 1188+520A>G after sequencing of the IRAK-4 gene, as a compound heterozygote.
Conclusion: IRAK-4 is essential in signaling path of the innate immune responses. Its deficiency is associated with severe and recurrent gram positive, and gram negative bacterial infections, which runs many times in the absence of clinical and laboratory inflammatory response.

Keywords: Interleukin-1 receptor associated-kinase (IRAK4), Toll-like receptor, mutation, Pseudomonas aeruginosa
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Allergy

The Third International Congress of
Immunology, Asthma & Allergy

Invited Speaker

A-10-166-1

Education Patient with Food Allergies

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Objective: Food allergy is a public health concern because of immune response specific adverse health effects caused by exposure to certain foods occurs. Its diagnosis is of great importance. With early diagnosis and find ways to help and decided to harness and control it from the effects of food allergies include hives, eczema, swelling of the lips, clogging and narrowing of the airways, swelling of the throat, shock and if not proper diagnosis and treatment can lead to hospitalization or even death. The goal of treatment is to correct nutrition to patients with food allergy education Therefore it is necessary to have enough self-awareness of dietary restrictions.

Material and Methods: In this study, the impact of food allergy to patients, the studies related articles with educational programs in the field of food allergies and on the websites of universities, library resources, databases, search engines using keywords about food allergy to patients and education were discussed.

Results: For the diagnosis of food allergy should be done about everything suspicion and to confirm or rule out the diagnosis (patient history, history of food consumption and protocol marks) in the search about allergies. Test Immunoglobulin E helps in the diagnosis of food allergy but a low positive predictive value and could lead to misinterpretation or delete unnecessary diet.

Conclusion: The diagnosis of food allergy will rule, prevention and education of key actions to maintain health and enhance quality of life is considered. Although health education activities for families of people with food allergies is very limited but food allergy management involves teaching the patient to stop eating the allergen and run workshops to empower the people and it is essential to start therapeutic strategies. Should patients with food allergy teach how to identify the factors of diet food and avoid it or remove it and perform secure replacement for a balanced diet of nutrients determine.

Keywords: Food allergies, Patient, Education

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Invited Speaker

A-10-172-1

Education to Patients with Allergic Rhinitis

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Objective: Allergic rhinitis (AR), also known as hay fever, is a type of inflammation in the nose, which occurs when the immune system overreacts to allergens in the air. Signs and symptoms include a runny or stuffy nose, sneezing, red, itchy, watery eyes, and swelling around the eyes. Symptom onset is often within minutes following exposure and they can affect sleep, the ability to work, and the ability to concentrate at school. Those whose symptoms are due to pollen typically develop symptoms during specific times of the year. Many people with allergic rhinitis also have asthma, allergic conjunctivitis, or atopic dermatitis. The purpose of this review, nursing care of patients with allergic rhinitis is.

Material and Methods: The articles included in this review were retrieved by a search of Medline, Google Scholar literature on the subjects of AR.

Results: Allergen avoidance is recommended for all patients prior to pharmacologic therapy. Oral and nasal H (1)-antihistamines are recommended to alleviate the mild and intermittent symptoms of AR and INS are recommended as the first-line treatment choice for mild persistent and more moderate-to-severe persistent AR.

Conclusion: There are a number of different types of therapy for the management of AR; with so many options, available, successful tailoring of treatment to suit individual requirements is realistically achievable. Care of Rhinitis: environmental control measures, Pharmacologic therapy (Oral antihistamines, Intranasal antihistamines, Oral and topical decongestants, Intranasal corticosteroids), Allergen immunotherapy, surgery. Education is a key element in promoting adherence and optimizing treatment outcomes in allergic rhinitis.

Keywords: Allergic rhinitis, Patient education, Nursing

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Invited Speaker

A-10-231-1

Nursing Care in Drug Allergies

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Objective: The onset of hives within a few hours of taking a new medication is easily recognized as possible drug hypersensitivity. However, many clinical presentations of drug hypersensitivity are more complex or take place in the setting of illness and/or polypharmacotherapy. The patient in intensive care who develops a rash while receiving multiple medications, or the ambulatory patient with complex chronic diseases who develops a new and unexplained symptom while taking many medications, illustrates two common presentations of drug allergy. The aim of this paper is description nursing care in drug allergies.

Material and Methods: This is a review paper that report up to date finding with review some research papers and databases.

Results: Patients who develop signs/symptoms of drug allergy while receiving multiple medications simultaneously are best approached in a systematic manner. Evaluation involves a meticulous history of past and present drug reactions, additional information gathering from the medical record, and analysis of temporal patterns between drug administration and onset of symptoms. Once this information has been assembled, it is combined with knowledge about the types of allergic reactions most often caused by various classes of drugs, to identify potential culprit agents. Risk factors for developing drug allergies include past drug allergy, genetic factors, recurrent drug exposure, and certain diseases (e.g., human immunodeficiency virus [HIV]/ acquired immunodeficiency syndrome). Individuals with two or more immunologic drug reactions to chemically-unrelated medications are said to have "multiple drug allergy syndrome".

Conclusion: There are three options for future treatment in patients with a confirmed drug allergy: administration of an unrelated medication, careful administration of a related medication, and desensitization to the culprit drug.

Keywords: Nursing, Drug allergy, Medication, Asthma

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Invited Speaker

A-10-470-1

Triggers and Risk Assessment in Management of Anaphylaxis

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Objective: Although the incidence of anaphylaxis is largely unknown but it has prevalence is increasing in all age groups globally. Unfortunately, most of the reactions are unpredictable. Finding out the mechanisms of the severe allergic reaction (e.g. IgE mediated or …), triggers (e.g. food, drug, latex, insect), co-morbidities (e.g. persistent asthma, cardiovascular diseases) and concurrent medications (e.g. beta-adrenergic blockers, alpha-adrenergic blockers) may influence the recurrence and severity of anaphylaxis and it's response to treatment.

Material and Methods: Diagnosis of anaphylaxis is based on clinical data and may be confirmed by timed and serial serum triptase measurements. In addition, allergy assessment is necessary in all patients with severe reactions by taking a comprehensive history and doing relevant skin and serum tests to identify and avoid the possible allergen(s) to prevent its recurrence. Further research and development of new biomarkers and future progress in immunogenetics may help identifying populations at risk for specific types of severe allergic reactions.

Results: To collect the information about triggering allergens, aggravating factors, demography of patients and medical care, an Anaphylaxis Registry was created In the Immunology, Asthma and Allergy Research Institute (IAARI) in 2005. In this national registry, the demography of patients, triggers and their frequencies, diagnostic and therapeutic measures, co- morbidities, and concurrent medications are collected. Based on the collected data, patient's education and follow-up care conducted, allergen risk assessment gradually developed and data produced for research purposes.

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Invited Speaker

A-10-361-1

Emergency Nursing Care in Acute Allergy and Anaphylactic Shock

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Shock from anaphylaxis, such as the other types of the shock is defined as a state of cellular and tissue hypoxia due to reduced oxygen delivery and/or increased oxygen consumption or inadequate oxygen utilization, and this type of shock is most commonly faced in patients with severe, Immunoglobulin-E mediated, allergic reactions to insect stings, food, and drugs. Main features of anaphylaxis are hemodynamic collapse, bronchospasm and increased airway resistance. Nurses, as a key member of the health team, must be focus on airway, breathing, and circulation, as well as adequacy of mentation. The patient should be placed in the recumbent position with the lower extremities elevated to maximize perfusion of vital organs, this position also helps prevent severe hypotension, subsequent inadequate cardiac filling, and pulseless cardiac activity. Two large-bore IV catheters should be inserted for rapid administration of fluids and medications. In normotensive adults, isotonic (0.9%) saline should be infused at a rate of 125 mL/hour to maintain venous access, providing oxygen 70-100 percent/ 15 liters per minute flow rate.

Continuous electronic monitoring of cardiopulmonary status, including measurements of blood pressure, heart rate, and respiratory rate, as well as monitoring of oxygen saturation by pulse oximetry, is required for the duration of the episode. According to physician order, Epinephrine should be injected intramuscularly into the mid-outer aspect of the thigh. If symptoms are severe, an IV epinephrine infusion should be prepared.

Anaphylactic Shock is reversible, but must be recognized and treated immediately to prevent irreversible organ dysfunction.

Keywords: Nursing care, Anaphylaxis, Shock

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Invited Speaker

A-10-900-1

The Effect of Air Pollution and Climate Changes on Structural/ Genetic Changes in Allergenic Pollen Grains

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Objective: Nowadays, one of the significant increase problems in the multiple locations around the world is a climate change induced by anthropogenic particularly temperature of the earth's and pollutants in the atmosphere. This problem causes issues such as respiratory allergy and asthma for human population. Plant pollen grains are an important source of airborne allergens. Pollinosis is frequently used to study the environmental factors such as climatic change (wind speed, rainfall, temperature, humidity, etc.) and indoor and outdoor air pollution relationship between of these interaction genetic changes in a population and respiratory allergy.

Material and Methods: We have investigated in with pollen grains cytology, modify the morphology of these agents and effect of air pollutants on structure and cellular material release, clinical and serological tests. This study compares polluted and non-polluted area and for potential allergenicity methods of extract and purification allergens total pollen protein and IgE-specific Imunoblotesresponse to aeroallergens in experimental models and human sera extract and purified pollen proteins of allergen and relationship between environmental factors and airpollution in the different locations in Iran since 1978 up to now. In these researches, we used different tests, performed such as light and SEM, TEM microscopy for identifies pollen grains. In addition, we present a method that allows inducing a stress to pollen in a dose-dependent manner. We collected some of tree and shrubs including: (*Platanus, cupressus,Pinus, Ailanthus, Acasia,Quercus,Cenocarpus,Poplus,Phenix*, *Avicennia,* Fraxinus,) weeds:(*Soja hispida Moench, Zenia, Chrysanthemum, Achillea, Tajetus, spartium and L.indica*) and grasses(*Lolium,Zea,Lilium,Cana,Courcus*)used in these study.

Results: The overall results of three decades in the field showed developmental processes of pollen grains towards both morphological and molecular changes increasing their allergenic potency. Some of the pollen grains such as *Platanus*,

Cupressus, *Fraxinus, Zenia, Chrysanthemum, Cana, Lilium, Lolium, T. patula, S. junceum,L. indica*and are changed forms against air pollution. Also temperature could be changed content and structure same as *Acasia,Zea* and humidity for *Soja hispida Moench.* In addition we results about purification of allergens are 13 allergen identify including: *Cupressus, Poplus, Ailanthus, Phenix, Avicennia, Fraxinus* of trees *,Zenia, Tajetus, S. junceum,L. indica,Chrysanthemum, Lilium,Cana,Courcus ,Achillea wilhelmsii,Helianthus annuus* of weeds and *Zea* in grass pollen grains.

Conclusion: According to our results both air pollution and generative season environment changes were able to induce allergic reaction respiratory allergy. These changes to pollens structure and ultra-structure can affect proteins of pollens. Furthermore, air pollution control is an important character in the health of all of living organisms.

Keywords: Air Pollution, Climate Changes, Pollen grains, Allergen

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Oral Presentation

A-10-85-1

New Frontiers in Allergen Specific Immunotherapy

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Allergen specific immunotherapy (AIT) is only approved causal treatment of allergic diseases. The results of over a century AIT by whole allergen extract shown an effective reduction in allergy symptom in long term and preventive effects of new allergies. Due to some limitation like the poor quality of whole allergen extract and undesirable adverse effects like anaphylaxis in some cases, by the advantage of recombinant technology, recombinant allergens corresponding their natural counterparts were used in allergy vaccines in recent two decades. However, recombinant allergens were more efficient and had fewer problems, but some restrictions, such as unwanted late-phase side effects have been remained. There are several approaches for addressing these problems such as change in route of immunotherapy. In contemporary, the progressing knowledge of Bioinformatics and the AIT immunological mechanisms have provided the

opportunity to explore new forms of hypoallergenic derivatives of recombinant allergens, such as peptide based vaccine with T cell epitopes or B cell epitopes, mutant allergens, and multi peptide vaccines. The results of current clinical trials of new vaccines, for the treatment more efficiently and without complications in the near future, are promising.

Keywords: Allergen, Recombinant, Immunotherapy, Epitope

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Oral Presentation

A-10-401-2

Prevalence and Pattern of IgE-mediated Sensitization to Aero- and Food Allergens in Ahvaz, Province of Khuzestan in Southwestern Iran

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Objective: Efficient diagnosis of allergy and proper treatment needs identification of the causative allergens eliciting clinical symptoms. The present study was aimed to determine the most common aero- and food allergens and pattern of sensitization among people of Ahvaz (southwestern Iran), one of the most polluted cities worldwide.

Material and Methods: Based on medical examination and a detailed questionnaire, patients were referred to the Allergy laboratory for "in vitro" IgE determination. Specific and total IgE was determined by the ImmunoCAP system (Thermo Fisher-Phadia, Uppsala, Sweden).

Results: 666 consecutive patients (48.9% male and 51.1% female) were tested for 202 different allergens. The majority of requests (57%) belong to the food allergens. Sensitization to at least one allergen was found in 47.6% of patients. In a selected group of allergens for which specific IgE has been tested in at least 100 patients, the most common sensitizing aero- and food allergens were respectively, Russian thistle, grass pollen, willow (aeroallergens) and wheat, honey and shrimp (food allergens).

Conclusion: Sensitization profiles based on measurement of specific IgE indicated that for people in Ahvaz, Russian thistle, grasses, and wheat are the most prevalent allergens giving allergic symptoms.

Keywords: Allergy, Specific IgE, ImmunoCAP

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Oral Presentation

A-10-381-1

The Prevalence of Systemic Reactions in Build-up Phase of Allergen Rush Immunotherapy

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Objective: Allergen-specific immunotherapy is the only definitive treatment of allergic diseases such as allergic rhinitis that could alter the nature of the disease. Now there are several ways to allergen immunotherapy that lives up to the build-up with repeated injections at close distances thus would reduce possibility of using this technique for patients. Therefore, in this study, protocol was improved to provide for Rush immunotherapy in 3 days to reach a monthly maintenance dose.

Material and Methods: After obtaining, the consent ethics committee of Mashhad University of Medical Sciences and satisfaction of patients, 21 patients with perennial allergic rhinitis aged between 15 to 55 years (mean 29.5 years) entered the study after determining allergens for immunotherapy in the allergy and Immunology department.

Results: Among 21 patients were 12 women (57.1%) and 9 males (42.9%). These patients according to the protocol, received 291 injections during the 3-day rush immunotherapy that 6 patients (28.6%) were experiencing systemic reactions. All the systemic reactions occurred in third day and on the last vial or vials of maintenance dilution protocol 1/1. There was no case of anaphylaxis and cardiovascular arrest or an episode of tachycardia, hypotension during treatment.

Conclusion: Rush immunotherapy is safe and if you use Premedication and proper selection of patients, systemic reactions is equal to conventional methods (conventional) and higher clinical efficiency.

Keywords: Allergen, Rush immunotherapy, Systemic reactions

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Oral Presentation

A-10-342-1

Synbiotic may Increase T Helper 1 Cells during Subcutaneous Allergen Immunotherapy for Allergic Rhinitis: A Randomized Controlled Trial

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Objective: Investigating synergistic effect of synbiotic on clinical and immunologic efficacy of subcutaneous allergen immunotherapy in allergic rhinitis patients.

Material and Methods: Twenty- eight individuals with allergic rhinitis aged between 5-55 years were enrolled in a single blind, placebo controlled study. Patients were divided in three groups: A) Immunotherapy plus synbiotic, B) Immunotherapy plus placebo and C) just synbiotic. Participants in the group A and C received one synbiotic capsule per day in first two months of treatment. Clinical and laboratory assessments were done at 8^{th} week 6^{th} month of intervention. SNOT-22 and mini RQLQ scores and intracellular expression of IL-4, IFN-gamma and FOXP3 and variation in the frequency of T helper type one and two, T regulatory and cytotoxic T lymphocyte by flow cytometry were used.

Results: Improvement in symptom score and quality of life were occurred in all groups and there was no significant difference between group A rather than B (P value= >0.99) after 6 month of treatment and nor group A rather than C (P value=0.25) after 2 month of treatment. In immunologic parameters, there were significant enhancement in T helper type 1 cell percentage in group A rather than B (P value= 0.022) and also in group A rather than C (P value= 0.023). However, there was no significant difference between groups B vs. C (P value= 0.85).

Conclusion: In this study, we concluded that adding synbiotic to SCIT increase TH1 cells percentage although this effect is temporary. There was no statistically difference in clinical response between groups; future studies with larger sample size, longer duration of consumption and different Probiotic species are needed to be able to recommend the use of synbiotic in routine immunotherapy protocols.

Keywords: Allergic Rhinitis, Synbiotic, Subcutaneous allergen immunotherapy

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Oral Presentation

A-10-358-2

Comparing Cluster Subcutaneous Immunotherapy with Conventional Protocol in Allergic Rhinitis Patients Based on Clinical and Immunologic Data

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Objective: Allergic rhinitis (AR) is a common disease and its prevalence has been increased in recent decades. Allergen-specific immunotherapy (AIT) remains as the only curative treatment, leading to modification of the natural course of disease. This study is designed to evaluate the clinical and immunological efficacy of Cluster subcutaneous immunotherapy compared with conventional schedule.

Material and Methods: This study was a clinical trial on 28 patients with perennial allergic rhinitis who were referred to allergy and clinical immunology clinics of Mashhad University of medical science (Ghaem hospital). Quality of Life Questionnaire based on Mini RQLQ and SNOT22 Questionnaire were completed at the first and six months later. For both times gene expression of cytokines IL-10, IL17, TGF-β and FOXP3 using Real Time PCR and IgE serum level were evaluated. Finally, the results of cluster subcutaneous immunotherapy which were matched with conventional method results were compared.

Results: As a result, 20 patients were at the end of study. 20 subjects, comprised of 11 (55%) female and 9 (45%) male patients aged between 24 years and 54 years. Mean SNOT22 scores was 45.2±18.47, in the first of study, while 6 months after cluster subcutaneous immunotherapy, reached to 21.00±20.79. This reduction was significant, statistically. Mean Mini RQLQ scores 6 months after cluster subcutaneous immunotherapy, reached to 17.30±16.22. This reduction was significant, statistically. Serum level of total IgE decreased, but it not was significant. Gene expression of cytokines IL-10, TGF-β and FOXP3 were diminished that about IL-10 was significant. Gene expression of IL17 increased that was not significant. According to data analysis, 30-40 years age group had the most mean SNOT22 scores, but>40 years age group were the most responsive to immunotherapy, significantly. Among allergic rhinitis symptoms, runny nose, sleep disturbance, activity complaints, sleepy during the day, Inability to focus

thinking and sneezing were the most frequent symptoms that improved significantly 6 months after cluster subcutaneous immunotherapy, respectively.
Conclusion: Cluster immunotherapy has the advantage of a reduced number of office visits than conventional schedule. Cluster and conventional specific immunotherapy led to similar improvements in immunological parameters and clinical efficacy. The cluster immunotherapy is a safe treatment method, which is faster than conventional immunotherapy.

Keywords: Allergic rhinitis, Cluster immunotherapy, Conventional immunotherapy, SNOT22, Mini RQLQ
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Oral Presentation

A-10-109-1

Salicylate Food Intolerance in Nasal Polyposis

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Objective: There is no definite association between allergy and nasal polyposis (NP) and there is no study to investigate the role of food intolerance in patients with NP by oral food challenge (OFC). Investigating the relation of salicylate food intolerance in patients with NP
Material and Methods: A cross sectional multicenter study was done in adult patients with NP who referred to allergy clinics were selected for the study. Oral aspirin challenge (OAC) test was performed to identify aspirin exacerbated respiratory disease (AERD) and OFC test was used for investigating food intolerance.
Results: 119 Iranian patients (female to male ratio 1.05) with NP were enrolled (by mean age, 38 ± 11). OAC was performed in all cases; 43.79% of them had aspirin hypersensitivity. In addition, 69.9% had salicylate food allergy in OFC. Salicylate food intolerance is significantly higher in NP cases with AERD than aspirin tolerant patients ($p < 0.05$).
Conclusion: Results of this study suggest that salicylate food intolerance is associated with AERD in NP.

Keywords: Nasal polyposis, Food allergy
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Oral Presentation

A-10-125-1

Food Allergy Attitudes and Knowledge of Restaurants Personnel in Shiraz City 2013-2014

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Objective: The prevalence of food allergy reactions is gradually increasing, which some of them could lead to disastrous results and death. These allergic reactions could occur in restaurants. This study conducted to evaluate the knowledge level and attitudes of restaurant personnel about food allergies.

Material and Methods: A questionnaire designed that consists of demographic data and 30 questions, which 17 questions were about knowledge and 13 questions about attitude on food allergy. Stratified sampling has been selected for this study so restaurants and food services were selected due to Shiraz city different geographical 5 areas.

Results: 150 persons participated in the study. The knowledge and attitude scores were; 37/5% knew about major allergens, only 25% selected epinephrine as the best treatment for severe reactions. 70/2% believed that they could handle reactions in emergency condition and 73/21% interested in future training program. The most knowledgeable group with the highest attitude about food allergies belong to age of 26-41 years old, educational level of bachelor and higher and work experience of more than 1year. Over all 39.49 % of the questions were answered correctly (P value < 0.05).

Conclusion: Due to high tendency of the participants to have basic information about food allergies, informing the customers about the ingredients and allergens, their interest for participating in future training programs and having low knowledge about food allergy definition, reactions and managements, it is necessary to train the restaurant personnel and make a protocol for them about food allergies.

Keywords: Food allergy, Allergen, Restaurants personnel

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Oral Presentation

A-10-121-2

Concentration of Six Indoor Allergens in Homes of Asthmatic Patients in Birjand, Iran

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Objective: Asthma is one of the most common chronic diseases around the world and causes many deaths each year. Indoor allergens including mites, molds, cockroach, and pets' allergens are among the most frequent triggers of symptoms in asthmatic patients. Evaluation of the level of exposure to different allergens in home and workplace and elimination the source of allergens at home has a fundamental role in reducing the severity and burden of asthma. The aim of this study was to assess the level of six different indoor allergens in homes of asthmatic and non-asthmatic people in Birjand city.

Material and Methods: Living room's house dust collected from homes of 30 asthmatic patients and their closest neighbors during 2015. Dust samples were weighted and extracted by PBS-T and the concentration of six allergens including mites (Der f1 and Der p1), mouse (Mus m1), cat (Fel d1), cockroach (Bla g1) and aspergillus (Asp f1) was measured by commercial ELISA kit.

Results: Mean concentration of all allergens except Der p1 was higher in homes of non-asthmatic neighbors but the difference was significant just for Der f1, Bla g1 and Asp f1 (2.4 vs. 0.6 ng/ml, 6.94 vs. 0.29 ng/ml and 2.12 vs. 0.09 ug/ml respectively). Asp f1 had the highest concentration in asthmatic and non-asthmatic homes. There was a significant positive correlation between the level of Der p1 and Der f1 ($r=0.24$, $P<0.000$) as well as Der f1 and Asp f1 ($r=0.507$, $P<0.000$).

Conclusion: The result of current study showed that the level of most indoor allergens is not high at home of asthmatic patients and this may explain by increased awareness about the role of allergens in exacerbation of asthma.

Keywords: Allergens, Asthma, Indoor

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Oral Presentation

A-10-194-1

Natural Course of IgE- mediated Cow's Milk Allergy in Iran

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Objective: Cow's milk allergy is one of most common food allergies in children. Incorrect diagnosis is occurred frequently, which can lead to nutritional complications for both mother and baby. The aim of the present study was to define the disease manifestations, patient's characteristics, and natural course of this disease over 18 months and ultimately find the recovery-related factors.

Material and Methods: In this study, 49 children under the age of one year with IgE-mediated cow's milk allergy in children medical center in Tehran, were continuously enrolled, and followed during 18 months. The infants were evaluated in terms of various characteristics including age of onset, type of disease presentation, percentage of recovery and the factors involved in the disease recovery over 18 months.

Results: This study showed that the prevalence of cow's milk allergy is higher in boys (67% male vs. 33% female). Most of these children were born in autumn and winter (58%) and the lowest in summer (18%). Skin manifestation (urticarial and eczema) was the most initial manifestation in these children. Moreover, 60% of them were also allergic to other foods in addition to Cow's milk (Egg was the most frequent). Besides, 73% of these children were born by caesarean section. Only 4% of these children lived in rural areas. Improvement over the 18-month follow-up was 46%.

Conclusion: Our results stated that in IgE-mediated cow's milk allergy there is no relation in the chance of recovery in the 18-month period with gender, birth weight, season of birth, type of delivery, maternal age, numbers of sibling, consanguinity, and Prick test size, type of symptoms, other food allergies and history of allergic diseases in parents.

Keywords: Cow's milk, Food allergy, IgE, Natural history

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Oral Presentation

A-10-144-1

The Relation between Serum Level of Total Ige, H.Pylori Ab Levels and Sensitivity of Skin Prick Test Reaction to Some Food Allergens in Chronic Urticaria Patients

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Objective: Chronic urticaria (CU) is one of the main skin allergic disorders characterized by short-lived weal and erythema symptoms longer than 6 weeks. The diseases is associated with various agents including exposing to some allergens, Helicobacter pylori, the concentration of IgE levels in blood stream and any other epidemiological and environmental factors. Skin prick test is a sensitive and useful tool for investigation of allergens responsible in various allergic diseases. The aim of this study was to investigate the relation between serum level of total IgE, H. pylori Ab levels, and sensitivity of skin prick test reactions to some food allergens in chronic urticaria patients.

Material and Methods: In this cross sectional analytic descriptive study, 94 patients suffering from chronic urticaria were subjected to study. To assess the role of total IgE, H. pylori infection and to address the role of allergens responsible in pathologic abnormalities in combination to some epidemiological factors, we used ELISA and skin prick methods to measuring the amount of total IgE and H. Pylori Ab (IgG) and some food allergens such as milk, paper, egg (white and yellow), tomato, banana, peanut. The results were evaluated by statistical methods.

Results: The results of this study revealed that 78.3% of patients were positive for H. pylori infection, 89.6% were positive for high concentration of serum total IgE. 85.7% had positive wheal and erythema reactions to all food allergens especially paper. The difference between these agents and some epidemiological factors such as age, the education levels and job, did not reach statistically significant

levels (p = 0.68) whereas the difference between these agents and duration of disease longer than five years and to all kind of food allergens reach statistically significant levels (p = 0.02).

Conclusion: Total IgE, Helicobacter pylori and expose of food allergens in combinations to some epidemiological factors have role in the urticarial symptoms. Improvement of disease symptoms are related to control of these factors.

Keywords: IgE, H. pylori Ab, Skin prick test, Food allergens, Chronic Urticaria

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Oral Presentation

A-10-46-1

Decreased Sensitization to Aeroallergens among Southwestern Iranian Male Farmers

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Objective: The purpose of this study was to identify sensitization to various aeroallergens in farmers and their occupational allergy symptoms.

Material and Methods: This cross sectional study included 103 male farmers and 100 non-farmer healthy controls. The work-related symptoms of farmers were recorded with a questionnaire. Spirometry and skin prick tests with 15 commercial allergen extracts were performed in both farmers and controls.

Results: The rate of sensitization to at least one of the applied aeroallergens was 47.6% in farmers compared to 65% in the control group (OR=0.48; CI 95%, 1.08 to 2.07) according to skin prick tests, after adjusting for age. Occupational allergy symptoms were reported by 54.3% farmers. Mean FEV1/FVC was significantly lower in farmers than in controls (p<0.001).

Conclusion: The results of this study showed that working in a farm was no increased the risk of sensitization to aeroallergens. Sensitization to pollens was more prevalent than to mites among the farmers in our study and smoking was an important predisposing factor in farmers who suffered from occupational allergy symptoms.

Keywords: Farmers, Lung function, Mite, Skin test, Work- related symptoms

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Oral Presentation

A-10-420-1

Peptide-Based Vaccines Derived from FcεRI Beta Subunit can Reduce Allergic Response in Mice Model

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Objective: Current therapeutic approaches in allergic diseases especially asthma generally focus on using immunological strategies. According to the importance of FcεRI in controlling allergic response, we used two extracellular regions of FcεRI beta subunit peptides to design two peptide-based vaccines. Probably these peptides vaccines by triggering the immune response to FcεRI can reduce the allergic symptoms through blocking the IgE specific receptor.

Material and Methods: Two extracellular parts of FcεRI beta subunit were made by peptide synthesizer and conjugated with Keyhole Limpet Hemocyanin. These conjugated peptides were used and evaluated as therapeutic vaccines in allergic airway inflammation mouse model. Total IgE and anti-Ovalbumin specific IgE were measured in mice serum and compared in vaccinated and unvaccinated allergic mice. Histamine, PGD2, IL-4 and IL-13 were measured in BAL fluid of vaccinated allergic mice versus unvaccinated and histopathologic study were performed in studied groups.

Results: After vaccination of mice with each of the peptide vaccines the specific antibodies titer increased significantly in vaccinated groups versus unvaccinated in histopathologic study the Lavage eosinophil percentage and Peribronchial inflammation in lung sections of vaccinated groups decreased ($p<0.05$). Also the allergic components including total IgE, anti-Ovalbumin specific IgE, Histamine, PGD2, IL-4 and IL-13 showed substantial decline in vaccinated allergic mice.

Conclusion: Targeting the extracellular regions of FcεRI beta subunit by peptide based vaccines and induction of specific antibodies against them can reduce allergic responses in allergic mice model.

Keywords: Allergy, FcεRI beta-subunit, Peptide base Vaccine

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Oral Presentation

A-10-110-1

The Frequency of Allergy to Food Allergens and Related Factors in 6 Months to 7 Years Old Children by Prick Skin Test in Sanandaj at 2013-2015

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Objective: Food allergy is an abnormal immune reaction to eating specific food or food additives. This study aimed to determine the prevalence of food allergens and associated factors of children from 6 months to 7 years old with food allergy. Prick test was conducted in Sanandaj in 2013-2015.

Material and Methods: This descriptive analytical study on children ages from 6 months to 7 years old with food allergies who had been admitted to hospital mission. The frequencies, percentages, means, and standard deviations were calculated and also plotted graphs and tables were shown in this research.

Results: The results of this study showed that 48percent of the subjects were male and 52 percent female and 86.2 percent under 3 years and 13.8 percent over 3 years. The results of this study showed that the most common complication and reactions caused by foods was flares among children under age of 3 years, especially regarded female.

Conclusion: In this study, most food allergy to cocoa, tomatoes, kiwi, watermelon, and peach was. Generally, identification of major allergen can reduce the incidence of skin reactions.

Keywords: Allergens, Food allergies, Children, Sanandaj

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Oral Presentation

A-10-106-1

Is There any Correlation Between Atopy and Psoriasis?

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Objective: Psoriasis is a TH1 and TH17 cells–dependent autoimmune disease of the skin and joint while allergic disorders are TH2 cell-dependent. There are

conflicting reports about the effect of atopy on psoriasis. With regard to these reports, the aim of the current study was to determine the frequency of atopy, allergic disorder (such as allergic rhinitis, asthma and eczema) and eosinophilia in patients with psoriasis.

Material and Methods: For this purpose, this case-control study was performed in Mashhad Ghaem hospital. History of allergic diseases including: allergic rhinitis, asthma and eczema were evaluated based on ISAAC standard questionnaire. Skin prick test was performed with 5 common aeroallen in our region and atopy was defined as a result of only one positive skin prick test. In addition, peripheral blood samples were obtained to determine serum levels of IgE and blood eosinophil cell count in both study groups.

Results: 52 patients with psoriasis, and 50 healthy subjects as the control group were considered. Between allergic diseases only asthma was lower in psoriatic patients rather than control based on ISAAC questionnaire (p= 0.04). There is no significant difference between result of skin prick test (atopy) in case and control group. Also no significant correlation was found between eosinophil count and Ig E level in case and control group.

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Oral Presentation

A-10-226-1

Administration of Vitamin D in Patients with Chronic Idiopathic

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Objective: Chronic urticaria is a common allergic skin condition affecting 0.5% to 1% of individuals and may be associated with remarkable morbidity and burden on health care expenditure. Chronic urticaria is characterized by urticarial itchy-wheals occurring almost daily and lasting more than 6 weeks. Chronic urticaria is caused by various reasons such as medications, foods, physical stimuli or part of inflammatory diseases, infectious or hereditary associated. However, in most cases of chronic urticaria, triggers are unknown that seen as Idiopatic chronic urticaria. The aim of this study was to evaluate the effect of vitamin D therapy in Chronic Idiopathic Urticaria patients with vitamin D deficiency.

Material and Methods: Clinical trial was conducted on 20 Idiopatic chronic urticaria patients with serum Vitamin D less than 10 ng/ml. Effect of 8 weeks of vitamin D, by comparing the first two months after completion of therapy and USS DLQI questionnaire.
Results: USS questionnaire showed that severe idiopathic urticaria two months after the end of treatment, compared to the beginning of a significant 55% reduction. The DLQI quality of life questionnaire two months after treatment showed 55%, Due to the significant improvement of clinical symptoms.
Conclusion: Vitamin D can be used along with standard medical care and it is a safe and cost effective method in the treatment of chronic urticaria with deficiency of vitamin D

Keywords: Chronic Idiopatic urticaria, Clinical trial, Vitamin D
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Poster Presentation

A-10-384-1

Chimeric Virus-Like Particles Harboring Che a3-Derived Peptides Could Raise Allergy Blocking Antibodies

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Objective: In this study we constructed a virus-like particle (VLP)-based chimeric protein, composed of hepatitis B virus core antigen (HBcAg) fused to nonallergic regions of Chenopodium album polcalcin (Che a3), as a candidate recombinant vaccine for allergen-specific immunotherapy.
Material and Methods: Conserved surface exposed peptides (CSEPs) of Chenopodium album polcalcin (Che a3) was inserted into the major insertion region of HBcAg. Following expression of recombinant chimeric VLP in E. coli BL21 and purification by anion exchange chromatography, the chimeric VLP formation was evaluated by TEM microscopy and dynamic light scattering. Moreover, IgE-reactivity of recombinant products including polcalcin and chimeric VLP were determined by polcalcin-sensitive patients' sera via ELISA and blotting.

Furthermore, mice were immunized with recombinant polcalcin or chimeric VLPs to evaluate the development of polcalcin-specific blocking antibodies with IgG class. The antibody titers of IgG1 and IgG2a against recombinant polcalcin and the level of IFN-γ as an indicator of TH1 based responses were examined in sera from mice immunized with recombinant products and supernatant of splenocytes, respectively.

Results: We found that the fusion of HBcAg with nonallergenic peptides of polcalcin and expression of the product in prokaryotic system can result in self-assembled VLPs. Mean ODs±SD for IgE-reactivity of recombinant polcalcin and chimeric VLP were estimated 1.05±0.33 and 0.11±0.03, respectively. Dot blot result also demonstrated reduced IgE reactivity of chimeric VLP. Average antibody titers against recombinant polcalcin in sera from mice immunized with chimeric VLP and recombinant polcalcin were 1×10^4 and 1.9×10^3, respectively. The percentage of IgE-blockade of recombinant polcalcin by sera from mice immunized with chimeric VLP or recombinant polcalcin was 63% and 65%, respectively. In contrast to sera from mice immunized with empty chimeric VLP (without packaged nucleic acid) or recombinant polcalcin, the level of IFN-γ and IgG2a/IgG1 ratio had increased in supernatants of splenocyte culture and sera of mice immunized with chimeric VLP (packaged nucleic acid).

Conclusion: The present study demonstrates that HBcAg-based VLPs can be used as allergen derivative-displaying platform in allergy-specific immunotherapy and may induce a safe and protective response upon immunization.

Keywords: Viral like particle (VLP), Chenopodium album Polcalcin (Che a3), Conserved surface exposed peptides (CSEPs)

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Poster Presentation

A-10-309-1

The Impact of Allergic Rhinitis on the Patients' Quality of Life in Qazvin

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Objective: Allergic rhinitis (AR) is a frequent problem with a significant impairment of the health-related quality of life. In the current study, the burden of allergic rhinitis on the patients' quality of life (QOL) of and its relationship with

the personal parameters (e.g. age, gender, economic level) and disease related parameters (e.g. severity of the clinical symptoms) were evaluated.
Material and Methods: A cross-sectional study was designed. The patients' quality of life was assessed by using the previously validated Persian version of Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ).
Results: 120 patients (48 males and 72 females) were enrolled. The mean age of the study group was 29.05 (15-50 years). About 75% (90 out of 120) of cases were under the age of 30 (young adult) and 25% of them were over than 30 (old adult). Rhinorrhea (75%) followed by nasal congestion (73.3%) were the most common symptoms. Asthma (51%) was the most common comorbidity. The QOL was moderately to severe impaired in 64% of patients. The impairment of the QOL was significantly related to the patients' age ($p<0.05$) in a reverse manner. No association was seen between QOL and gender. Regarding the patients' symptoms, there was a meaningful correlation between rhinorrhea ($p<0.05$) and nasal congestion ($p<0.05$) with the patients' QOL. Asthma and hyposmia ($p<0.05$and $p<0.05$respectively) showed a substantial correlation with the patients' QOL. In addition, sleep disturbance was an common symptom (81.7%) and it was correlated with QOL ($p<0.05$).
Conclusion: The findings of this study surprisingly revealed that AR severely affects the patients' QOL especially in the cases suffering from rhinorrhea and congestion. The current study highlighted the importance of the extensive control of patients' symptoms in the improvement of the patients' QOL. Properly treated of asthma would also help to improve the patients' QOL.

Keywords: Quality of life, Allergic rhinitis, Asthma
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Poster Presentation

A-10-124-1

Evaluation of Lymphocyte Migration to Inflamed Skin following Paederus Induced Dermatitis in Rat Using CD3, CCR4, and CCR10 Markers

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Objective: Paederus Dermatitis is a blistering disorder that is caused by a small insect of the genus Paederus. The disease has spread around the world and in Iran. It is more common in humid and hot areas, especially in the provinces of Gilan, Mazandaran and Khuzestan. This study aimed to investigate the presence of lymphocytes in Paederus induced lesions using CD3, CCR4 and CCR10 markers that are specifically expressed on the surface of T lymphocytes.

Material and Methods: In this experimental study, 24 white female rats were divided into two groups: test and negative control. In the test group, Paederus dermatitis was induced by making insects in contact with shaved rat skin. Biopsies were obtained 24, 72 and 120 hours after induction. In negative control group physiological saline was used. Specimens were studied by Immunohistochemical staining method. Antibodies against CD3, CCR4 and CCR10 are used. Distribution and staining intensity of CD3, CCR4 and CCR10 markers were evaluated by the HSCORE index and findings were analyzed using the Kruskal-Wallis and Wilcoxon statistical tests.

Results: Based on the results of immunohistochemistry, expression of CD3, CCR4 and CCR10 in test group at 24, 72, 120 hours compared to the control group showed significant increase. (p =0.0006, p = 0.001 and p <0.0001 Respectively). The peak of expression of all markers was in 72 hours after exposure. Hematoxylin-eosin staining also confirmed the fact that 72 hours after exposure more lymphocytes have come to the injury lesion.

Conclusion: The expression of CD3, CCR4 and CCR10 on cells present in Paederus dermatitis lesions could indicate that T lymphocytes are recruited to the site of inflammation by chemokine-chemokine receptor interactions.

Keywords: Paederus dermatitis, Immunohistochemistry, CD3, CCR4, CCR10

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Poster Presentation

A-10-395-3

Pollen Database Registry in Iran

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Objective: The first Pollen Database Registry (PDR) has begun in Tehran the local pollen pattern is unique because of a specific climate. PDR designed according to detailed seasonal pollen calendar, which is required for sufferers with allergies, asthma disease and tourists. PDR are intended to be both archives of digital atlas of microscopy pollen grains and associated data as well as important research tools for studies in paleoclimatology in Tehran and then for others states of Iran. Establishment of comprehensive, archival pollen database in Iran has been performed since 2010 up to now. Basic research in the air borne pollen counts were done by Dr. Kimiayi (1970) reported of 10 pollen families. Then Dr. Shafei, Dr. Yasa et al (1981) did 18 to 31 pollen counts in Tehran. Dr. Farhoudi, Dr. Faridhosseini (1993) for project of Dr. Moin and Dr. Movahedi researched about pollen counting in Tehran and Karaj. Dr. Majd et al have reported morphology and allergenicity of pollen grains and environmental factors in Iran since 1991 up to now. We investigated pollen calendar in Tehran for 7 years and collected information about current pollen patterns.

Material and Methods: In the first step, vegetation was investigated. Then two air samples were collected using (Burkard spore trap grains/m^3 by Dr. Zandieh and Durham sampler grains/m^2) to identify and determine pollen concentration in the air and separated in three groups of tree and shrubs, weeds and grasses and reported according to the National Allergy Bureau scale (NAB) and statistical analyzed pollen counts relationships with metrological factors and air pollution data in Tehran. Then pollen data were placed in web site design in space of IAARI.

Results: We observed 121 plant families including 570 genera and species in vegetation in Tehran and drew pollen calendar for 7 years and compared with metrological factors and air pollution data that in most cases was significantly $p<0.05$.

Conclusion: We can use data mining method for exact separation of data for each pollen patterns, in Tehran and other cities of Iran. In the future, we would like to link with World Allergy Organization (WAO) and Global Pollen Database (GPD).

Keywords: Pollen Database Registry (PDR), Tehran, Iran

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Poster Presentation

A-10-216-1

Initial Report of Iranian Allergic Rhinitis Registry

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Objective: Allergic rhinitis registry is a useful tool in characterization of common symptoms in Iranian population. We aimed to register the patients with allergic rhinitis (AR) using the Allergic Rhinitis Questionnaire (ARQ).

Material and Methods: Patients were referred to Immunology, Asthma and Allergy Research Institute (IAARI) from 2009 to 2016. After filling out the ARQ, the acquired data were maintained in a registry system.

Results: 132 adults with a mean ± SEM age of 32.8±1.5 years were registered from which 67 (50.8%) patients were female. The prevalence of AR symptoms in the registered patients was as follows: runny nose (91.7%), nasal obstruction (83.3%), sneezing (81.1%), itchy nose (75.8%), red eye (75%) and sleep disturbance (54.5%). History of urticaria, eczema, asthma, drug and food allergy was 21.2%, 16.7%, 8.3%, 7.6%, and 24.2%, respectively. Statistical analysis revealed that daily activity was restricted in 85 (64.4%) individuals. Family history of any allergic disease was positive in 85 (64.4%) patients. The frequency of active smoking was 3.8% among these patients; while 22% of participants were passive smokers. The majority of patients suffered from moderate to severe persistent asthma (62.9%).

Conclusion: AR is a common disease that needs a precise planning to control and reduce the AR symptoms. To reach such an important goal, the contribution of AR registry will increase in the near future.

Keywords: Allergic rhinitis, Registry, Prevalence

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Poster Presentation

A-10-190-1

Relationship of Caesarean Section and Childhood Asthma: Meta-Analysis

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Objective: Asthma is one of the most common airway diseases, involving the increased response of tracheobronchial tree to various stimuli. Prevalence, incidence, mortality, and economic burden following asthma have confronted a rising trend, especially among children since 1960. Various factors cause asthma in children; thus, the present study is conducted to investigate the association between Caesarean section and childhood asthma.

Material and Methods: The present systematic, meta-analysis review used domestic and international databases, including, Scopus, Cochrane, PubMed, Embase, Springer, science direct, and Google scholar to search materials, ranging from 1996 to 2016, on caesarean section and childhood asthma. Relative risk and confidence interval of individual studies were extracted. The results of scrutinized studies were combined with random effects model, and heterogeneity was measured through Iindex.

Results: An overall of 32 studies qualified for inclusion criteria and entered into meta-analysis study. The results showed that the risk of childhood asthma is increased by caesarean section delivery, with the confidence level and relative risk of 1.39(95% CI: 1.18-1.62, p<0.0001); heterogeneity of studies was estimated, through random effects model, to be 96% and it turned out to be significant. (p<0.00001)

Conclusion: Based on the meta-analysis study, caesarean section increases the risk of children asthma; thus, it can be considered of potential danger for children. It is possible to decrease the potential risk of asthma by developing appropriate education and providing instruction for pregnant women.

Keywords: Asthma, Caesarean Section, Meta-Analysis

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Poster Presentation

A-10-127-1

Overweight and Obesity in Relation to Allergy in Iranian Adolescents

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Objective: A positive association between obesity and allergic diseases has recently been suggested; however, results of studies on obesity and allergic diseases are quite conflicting, and most of them are related to asthma and asthma-like symptoms. The aim of this study was to determine the association of obesity indices and the prevalence of some allergic diseases in Iranian adolescents.

Material and Methods: Data from a cross sectional study on 1735 high school students in Tehran (2009-2015), using a cluster sampling, were analyzed. The association between body mass index (BMI) for age and physician-diagnosed asthma, allergic rhinitis or conjunctivitis, atopic dermatitis, food allergy and self-reported wheezing was investigated with a face and content validated questionnaire. Weights and heights were measured to calculate their BMI by trained surveyors using valid methods. The BMI number was plotted on the CDC BMI-for-age growth charts for girls and boys to obtain a percentile ranking. Over weight was defined as BMI>85th percentile for age. Logistic regression was performed to examine the relationship between percentiles of BMI for age and allergy.

Results: Mean ± SD age was 14.95±2.69 among girls (53.7%) and 15.11±2.32 among boys. Compared with adolescents at the lowest percentile group, Iranian adolescents at>85th percentile group showed a higher risk of allergy (OR=2.33, 95% CI 1.12-4.27; p=0.042). Iranian atopic dermatitis at>85th percentile group showed a significantly higher risk of allergy (OR=3.27, 95% CI 1.19-4.21; p=0.022). This association was not observed when adolescents with food allergy were excluded from the analysis.

Conclusion: Our study point towards an association between being overweight and atopic dermatitis. Our results showed that being overweight was associated with an increased risk of allergy in our study population. However, our study does not allow us to draw any conclusion regarding the biological mechanisms underlying the association between overweight and allergy. Future clinical studies are warranted to confirm these findings.

Keywords: Overweight, Obesity, Body mass index, Allergy, Adolescents

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Poster Presentation

A-10-161-1

The Relationship between Allergic Rhinitis and Schizophrenia in Guilan, 2013-2014: A Case-Control Study

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Objective: Schizophrenia, a chronic idiopathic mental disease, and allergic rhinitis (AR), a chronic physical illness, both reveal serum cytokine changes (i.e. IL-6) among individuals. In this study, we aimed to evaluate the relationship between these two morbidities.

Material and Methods: In this descriptive-analytical case-control study, the case group was defined as 1000 known patients with schizophrenia, with health care records confirming the diagnosis by a psychiatrist, while 1000 normal subjects with the same age and gender distribution were considered as the control group. The study protocol was confirmed by the ethical committee at Guilan University of medical sciences. First, demographic features were obtained. To evaluate the psychiatric symptoms, the patients with schizophrenia filled out Symptom checklist 90R (SCL 90R). All of the subjects were evaluated by the Brief Psychiatric Rating Scale (BPRS; version 4.0). Also, the diagnosis of allergic rhinitis (AR) was confirmed by a. scores more than seven from the Score for Allergic Rhinitis (SFAR) questionnaire and b. clinical manifestations of AR. The data were analyzed by X2 and t-test statistical tests by SPSS version 19 software.

Results: The mean age of patients in the case and control groups were 45.04±11.96 and 44.7±12.97 years old, respectively. In both groups, there were more men than women; however, the difference was not significant. AR was significantly more in the case group (10.7%) rather than the control group (6.7%). Mean duration of schizophrenia and mean medication dose were 1.67±9.91 years and 247.34±246.676 mg/dl, respectively. Mean BPRS score was 50.46±21.37 and a correlation between BPRS and SFAR scores was reported (p=0/0002, r=0/1). There were no significant relationships between BPRS scores and the duration of the disease in the patients with and without allergic rhinitis between both groups. In contrast to women, there was a significant relationship between allergic rhinitis and schizophrenia among men (p=0/0001, x2=12.822).

Conclusion: Based on the findings of this study, there was a significant relationship between allergic rhinitis and schizophrenia, thus we recommend future studies focusing basically on the common underlying etiologies of these two morbidities.

Keywords: Allergic Rhinitis, Schizophrenia, Frequency
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Poster Presentation

A-10-145-1

High Serum Levels of CD14 in Patients with Allergic Rhinitis

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Objective: Allergic Rhinitis (AR) is the most common type of chronic rhinitis. It is affecting 10 to 20% of the population. The prevalence of AR has increased worldwide. There are many allergic and inflammatory mediators involved in the immunopathogenesis of AR. Soluble CD14 can be produced by LPS-stimulated antigen presenting cells in the immune system. Previous studies showed that the ratio of Th1 to Th2 and IgE can be affected by CD14 expression. Therefore, the aim of this study was investigated the correlation between the serum levels of CD14 and allergic rhinitis.

Material and Methods: 50 patients with AR and 50 healthy controls were enrolled in this study. The samples were collected randomly and the range of age was between 18 to 60 years. The serum level of CD14 was measured by enzyme-linked immunosorbent assay (ELISA). Data was analyzed by spss16 software.

Results: The mean age of case and control groups was 32.54 ± 9.31 and 31.01 ± 8.01, respectively. The serum levels of CD14 was significantly higher in the case group when comparing with the control group ($p < 0.007$).

Conclusion: Based on the results of this study, CD14 in the serum of patients with AR might be an important immune biomarker for the disorder. We suggest increasing the sample size to get better conclusion.

Keywords: Serum, CD14, Allergic Rhinitis
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Poster Presentation

A-10-421-1

Comparison of Lipoxin A4 Serum and Lipoxin A4 Receptor Gene Expression Levels in Peripheral Blood Cells in Patients with Allergic and Non-Allergic Rhinitis with Healthy Controls

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Objective: Allergic rhinitis is defined as a chronic mucosal inflammation in nasal tissues. Lipoxin A4 (LXA) is well-Known as a specialized pro-resolving lipid mediator for prevent excessive inflammation and tissue homeostasis. The aim of this study was to evaluate the serum levels of lipoxin A4 (LXA4) in patients with allergic rhinitis.

Material and Methods: Peripheral blood was obtained from 37 patients with allergic rhinitis (confirmed by prick test) and 20 age- and sex-matched control cases. Serum levels of lipoxin A4 were quantified by ELISA.

Results: The results indicated that the mean serum levels of LXA4 were significantly lower in allergic rhinitis group compared with the control group ($P<0.05$).

Conclusion: These results suggested that lower serum levels of LXA4 might lead to an increased susceptibility to chronic inflammation in nasal mucus of patients with allergic rhinitis, suggesting a potentially novel therapeutic approach to upper chronic airway inflammation

Keywords: Allergic rhinitis, Lipoxin A4, Specialized pro-resolving lipid mediator (SPMs)
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Poster Presentation

A-10-126-1

Positive Association between C-159T Functional Gene Polymorphism and Allergic Rhinitis

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Objective: Allergic rhinitis is an inflammatory disease of the nasal mucosa. It is the most common allergic disease with a prevalence rate of 15 to 20 percent. According to the recent studies the Serum levels of CD14 is correlated to IgE-dependent response and inflammatory phenotypes in allergic patients. On the other hand, a functional polymorphism named C-159T in the Promoter of CD14 gene is associated with the serum level of CD14. The aim of this study was the investigation on the relationship between C–159T in the CD14 promoter gene in patients with allergic rhinitis.

Material and Methods: Seventy-five patients with allergic rhinitis who referred to the Ghaem Hospital, Mashhad University of Medical Sciences and 75 healthy controls from the national blood center were enrolled in this study. The samples were collected randomly and the range of Age was between 18 to 60 years old in both groups. Any Participants with any other diseases were excluded. The detection of C-159T polymorphism in the CD14 promotor gene was performed by PCR-RFLP method. After collecting data, the results were analyzed by spss16 software.

Results: According to this study, the mean age of case control groups were 30.04 ± 9.41 and 35.32 ± 8.63, respectively. The CD14 gene polymorphism frequency in the case group was 6.7%, 81.3% and 12% for the CC, the CT and the TT genotypes, respectively. Additionally, the genotype frequency of the CC, the CT and the TT were 46.7%, 46.7% and 6.7%, respectively in the control group. The results showed that a significant association between C-159T gene polymorphism and allergic rhinitis ($p<0.001$). The results of statistical analysis showed that TT genotype increased the risk of allergic rhinitis ($p<0.001$, OR, 12.6; CI95%, 2.98-53.17).

Conclusion: The results of this study showed that the functional polymorphism C–159T in the CD14 Promoter gene is one of the effective factors for the development of allergic rhinitis disease. These results might be useful for prediction of the allergic rhinitis.

Keywords: Allergic rhinitis, CD14 gene, C-159T gene polymorphism

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Poster Presentation

A-10-129-2

Acute Lung Function Response among Workers of Flourmills in Qazvin

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Objective: Exposure to flour dust, as an allergic organic particle, plays an important part in developing respiratory system illness and may cause acute and chronic lung function impairment. The aim of the present study was to determine the acute lung function status of Workers exposed to wheat flour dust in flourmills.

Material and Methods: This cross-sectional analysis was conducted in 2015-2016 in Qazvin Flour Mill Industries, Iran, on 30 male flour dust workers and 30 male healthy-control subjects. The pulmonary function test was performed in controls, workers before and after working, by using MIRALAB III spirometer. Workers demographic information and respiratory complaints were collected using American Thoracic Society Questionnaire. The results were analyzed by independent sample t-test, paired t-test, and Chi-square test.

Results: Respiratory symptoms such as sputum and shortness of breath were significantly ($P< 0.05$) higher among exposed workers as compared to unexposed. Moreover, a significant decline in percent predicted values FEV1, FEV1/FVC, PEF, FEF2575, FEF25, FEF50, FEF75, MVV between workers and their matched controls. Furthermore, pulmonary function after exposing with flour dust showed a significant decrease in FVC%, FVE1%, and MVV indices.

Conclusion: Results of comparing pulmonary function of workers before and after working indicated that exposure to flour dust acutely affected the lung function of workers in flour factory and that workers were at a risk of developing occupation related lung function impairment. Therefore, engineering and Administrative controls and use of protective facemasks are required in flour production factories to reduce the exposure of workers.

Keywords: Flour, Pulmonary function indices, Spirometry

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Poster Presentation

A-10-384-2

Cloning, Expression and IgE Binding Analysis of Recombinant Wolf Herring Fish Parvalbumin, the Sole Allergen in Heated Wolf Herring Fish

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Objective: The parvalbumin from Wolf Herring fish was previously found to be as the major allergen in heated fish. In this study, we cloned, expressed and identified the parvalbumin coding sequence of Wolf Herring fish and investigated its IgE-reactivity.

Material and Methods: Parvalbumin coding sequence was amplified by conventional PCR using the cDNA library of Wolf Herring fish and inserted into pET28 vector. Recombinant protein was produced in E. coli BL-21 and following purification by metal affinity chromatography, its allergenicity was evaluated by fish allergic patients' sera. Moreover, we investigated IgG- and IgE-reactivity of the recombinant form with its native one. Furthermore, the IgG- and IgE-reactivity of the calcium-depleted forms were compared with calcium-bond parvalbumin.

Results: Following purification, a 14 kDa recombinant protein was found in SDS-PAGE. This recombinant protein showed IgE-reactivity with fish allergic patients' sera in ELISA and western blotting. The amino acid sequence of parvalbumin showed 94% identity with Cryp c1 (carp parvalbumin). Recombinant parvalbumin was capable to hinder IgE-reactivity of the native parvalbumin in inhibition ELISA. In contrast to IgG-reactivity, IgE-reactivity of parvalbumin was lower in calcium-depleted parvalbumin. ELISA results showed that 72% (18 out of 25) and 80% (20 out 25) of fish allergic patients' sera were IgE-reactive with recombinant and native parvalbumins, respectively. However, crud extract reacted with only 56% (14 out of 25) of fish allergic patients' sera. The mean ODs±SD for IgE-reactivity of the recombinant and native parvalbumin with fish allergic patients' sera were estimated to be 0.520±0.298 and 0.550±0.309, respectively, while, the mean ODs±SD for IgE-reactivity of crud extract was significantly lower (0.341±0.280).

Conclusion: Recombinant parvalbumin from Wolf herring shows equivalent IgE-reactivity with its native form. So it may be used as a diagnostic tool in fish allergy.

Keywords: Carp parvalbumin (Cryp c1), Wolf Herring fish, Parvalbumin, Allergenicity

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Poster Presentation

A-10-463-1

Investigation on Proteolytic Activity of Iranian Probiotic Bacteria on As1-Casein Antigenic Epitopes and Reducing Cow's Milk Allergenicity

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Objective: The high prevalence of food allergy is a growing public health concern due to its life-threatening potential. Hypersensitivity to cow milk proteins is the most frequent food allergy that affects mostly infants when breast-feeding is not possible. Casein is one of the major allergens responsible for Cow's milk allergy (CMA) and thought to play an important role in persistent allergy. The proteolytic activity of lactic acid bacteria (LAB) have considered as a processing method for decreasing allergenicity.

Material and Methods: More than 50 isolates were obtained from 20 Iranian traditional yogurts collected from different regions of Iran. Among them, SDS–PAGE showed 14 LAB isolates were characterized as highly proteolytic. Followed by reversed-phase high-performance liquid chromatography 3 isolates were confirmed as the most proteolytically active. Then, their capacity to inhibit immunoglobulin E (IgE) binding was evaluated by a competitive enzyme-linked immunosorbent assay (ELISA) with the pooled sera of 10 patients with cow's milk allergy.

Results: The less recognition of the hydrolysated αS1-Casein than that of intact proteins by specific IgE indicates that changing the allergen presentation or degrading the allergenic protein epitopes and reduces in the allergenicity properties.

Conclusion: These strains could be used as probiotic material for developing hypoallergenic dairy products.

Keywords: αs1-Casein, Allergenicity, Competitive ELISA, Lactic acid bacteria, IgE

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Poster Presentation

A-10-358-1

Common Aeroallergens among Allergic Patients

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Objective: The prevalence of atopic diseases has increased in recent decades dramatically. The most common aeroallergens in Northeastern Iran have not been fully defined. Define the most common aeroallergens in allergic patients based on the skin prick test (SPT) was aimed in this investigation.

Material and Methods: This cross-sectional study enrolled 1,006 allergic patients (aged 1–86 years) from October 2010 to February 2014 referred to the Allergy clinics of Mashhad University of Medical Science. After completing a checklists including demographic information, the SPT was performed according to the patients' history of aeroallergen sensitivity.

Results: Patients with symptoms of asthma allergic rhinitis, atopic dermatitis, and urticaria were enrolled. 97% of patients had a positive skin test to at least one aeroallergen. The most prevalent allergens were Russian thistle (Salsola kali) (50.2%), ash (Fraxinus excelsior) (36.7%), grass mix (29.1%), tree mix (21.6%), and pigweed mix (19.5%). Common allergens in patients with different symptoms of allergic disorders were as follows: asthma (Russian thistle, grass mix, ash, tree mix, and Dermatophagoides pteronyssinus); allergic rhinitis (Russian thistle, ash, grass mix, tree mix, and pigweed mix); urticaria (Russian thistle, ash, grass mix, pigweed mix, and tree mix) and atopic dermatitis (Russian thistle, grass mix, ash, tree mix, and pigweed mix). In the spring, summer, autumn and winter the most prevalent allergens were Russian thistle, ash and grass mix.

Conclusion: Determination of the most common aeroallergens in this area is unavoidable in the diagnosis and management of allergic disorders.

Understanding the prevalence of the most common aeroallergens such as Russian thistle in 50.2% of people or other common aeroallergens can help patients and specialists to identify more easily suspected allergens, reduce costs, and support immunotherapy of allergic patients in this area. Moreover, it is helpful in avoiding pollens or cross-reactions.

Keywords: Allergens, Pollen, Allergic feature, Seasonal allergy

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Poster Presentation

A-10-85-2

Construction of NT-34, a Recombinant B-cell Epitope Peptide Vaccine from Der p 1 for Specific Immunotherapy

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Objective: House dust mite (HDM) allergy is the leading cause of IgE-mediated hypersensitivity. Identifying potential epitopes in Dermatophagoide pteronyssinus (Der p 1), a major HDM allergen is essential for developing allergen immunotherapy vaccines. Traditional methods of epitope discovery such as, crystallography are not only expensive but also time-consuming thereby delaying allergen screening process. In contrast, computational methods are easy and have been exploited for the production of standardized homogeneous hypoallergens by identifying potential allergens necessary for allergy vaccine formulation. This can help replace side effects associated whole allergen extracts currently in use. The study sought to perform an in silico construction of a recombinant B-cell epitope conjugate vaccine, NT-34 for HDM allergy, by identifying best candidate peptides of Der p 1 and fusing them to a tetanus toxoid carrier molecule. In continue NT-34 will be evaluated in compare with recombinant DerP 1 and whole HDM extract for immunotherapy.

Material and Methods: Immune Epitope Database (IEDB) were applied to predict from a Der p 1 sequence the B and T-cell epitopes, and their corresponding physical and chemical properties. An In silico MHC II binding prediction using NetMHCIIpan was performed. Candidate peptide was linked to a tetanus toxoid carrier using a linker and fusion protein analyzed by NetSurfP. Authentication of NT-34 as a probable vaccine was done using in silico docking techniques.

Results: NT-34 was found to be the most appropriate vaccine derived from Der p 1 that fulfilled all the criteria for becoming an ideal B-cell epitope vaccine with 100% conservancy in Der p 1. Moreover, structural analysis was shown the peptides in both side of carrier are in surface and can be determined by humoral response.

Conclusion: The predicted recombinant B-cell epitope vaccine against HDM allergy must be further validated in vitro and in animal models to verify its safety and efficacy.

Keywords: Epitopes, Allergen, Vaccine, Immunotherapy
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Poster Presentation

A-10-171-1

Self-reported Rate of Food Allrgy in Elementary School Children of Khormabad

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Objective: Food allergy has emerged as an important public health problem affecting people of all ages. Food allergy affects 6% of the U.S. children younger than 5 years of age and 3.5% to 4% of the general population. The aim of this study is to determine the self-reported rate of food allergy in schoolchildren of Khormabad.

Material and Methods: In this cross-sectional descriptive study, 1800 of elementary students were considered. Simple accidental sampling was done with a like publication with 12 choosier clusters from two areas of municipality. All of students were questioned. Information was obtained from both parent and students. The study questionnaire consisted of two parts. Part 1 comprised questions aimed at collecting the socio-demographic data (age, sex, birth weight and breastfeeding). Part two contained questions that focused on food allergy, including self-reporting and food allergy, types of food allergens, and signs and symptoms of food allergy.

Results: Out of 1800 students, 50.4% were boys and 49.6% were girls. 151 students had food allergy (33.3%). food allergy in boys were 15.8% and girls 17.2% respectively. Age of students in 10.2% were 6-7 years old, in 12.2% were 8-9 years old and in 8.6% were more than 9 years old. Among the 151 children that reported having food allergy, 30.1% had urticaria and or angioedema, 22.9 %cough and wheezy, 14% runny nose, sneezing and itchy nose, 0.9% tearing, itching and redness of the eye, 3.8% lips edema, 0.2% Anaphylaxis, 18% gastrointestinal symptoms and 10.2% a combination of symptoms. The most common allergen was brinjal. The second most common allergen was egg followed by cow's milk, nuts, tomatoes, Sweet pepper, khormalu, peach, kiwi, Orange, wheat and soya. In the survey, 33 percent spontaneously recovered, 54.2% were treated as outpatients, 7.6 % admitted to hospital and 4.9% were

treated as long-term. Positive history of allergy in their father was 45.7%, mother 19.4% and 24.2% in their sister and brother.
Conclusion: The prevalence of food allergy was estimated 33.3%. The most common allergen was brinjal.

Keywords: Food allergy, Self-reported, Elementary students
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Poster Presentation

A-10-464-1

Successful Reduction Allergenic Response to Bovin β-lactoglobulin by using Iranian Lactic

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Objective: Cow's milk is one of the most common food allergens and the sixth problem of human health by World Health Organization (WHO). β-Lactoglobulin, one of the major milk allergen protein, has been used in this study to evaluate its proteolytic activity and allergenicity properties. Lactic acid bacteria were screened for their ability to reduce the β-lg antigenity. The results of this study demonstrated that the hydrolysated β-Lactoglobulin is less recognized than native one by IgE from cow's milk allergy patient's sera which indicating reduces in the allergenicity properties of this protein. These bacteria have potential roles for using in Iranian dairy products as an allergen reducer.
Material and Methods: In the present work, 26 traditional milk and yoghurts have been collected from different regions of Iran, and 40 types of Lactobacillus have been isolated in MRS broth and agar medium. The catalase and gram stain tests have been used to recognize Lactobacillus bacteria. The characterization of the proteolytic activity of these bacteria on milk proteins were studied using SDS-PAGE and RP-HPLC techniques. The best proteolytic bacteria were isolated as the main bacteria to hydrolyze beta-Lactoglubolin proteins. The immunoreactivity of protein hydrolysate was investigated to find the amount of reduced immune

system responses; therefore, the competitive ELISA experiments (IgE binding inhibition experiments) were utilized by a pool serum from cow's milk hypoallergen patients (from 1-5 years old).
Results: The resulting antigenic response of fermented pure β-lg, determined by means of SDS-PAGE, RP-HPLC and competitive ELISA, demonstrated a higher reduction of immunoreactivity. These values were relied on the reduction of the antigenicity of milk proteins and IgE-binding capacity.
Conclusion: This screened demonstrates that lactic acid bacteria are suitable to decrease the antigenic response of β-lg in fermented sweet whey and skim milk and could be used as probiotic.

Keywords: Cow's milk allergy, Lactic acid bacteria, Probiotics, Proteolytic activity, Competitive ELISA.
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Poster Presentation

A-10-215-1

Evaluation of Induced Cytokine Response against ZHER2 Affibody in BALB/c Mice

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Objective: Affibodies are new generation of peptides originated from Z domain of staphylococcal protein A. Affibodies could be engineered to bind specifically to target molecules with high affinity.
Compared with available monoclonal/polyclonal antibodies, these peptides could be expressed in prokaryotic host. Affibodies have a great potential to be used in specific diagnostic and treatment protocols for specific targeting of the determined molecules. There are some reports about utilization of affibodies for therapeutic or diagnostic purposes while to our knowledge there is no available data about immunogenicity of this engineered biomolecules in animal models.
Material and Methods: In the current study, immunogenicity of ZHER2 affibody (with a high affinity for HER2 receptor) was evaluated. Gene of ZHER2 affibody

was synthesized by de novo gene synthesis and then inserted in Champion™ pET302/NT-His plasmid. E. coli BL21 cell was used as expression host. IPTG was used for induction of protein expression and recombinant affibody molecules were purified using HisPur™ Ni-NTA resin. Purity of purified ZHER2 affibody was demonstrated using SDS-PAGE and Coomassie brilliant blue staining. For immunization, male BALB/c mice (4-6 weeks) were administered subcutaneously with different concentrations of purified ZHER2 affibody for three times with 2 weeks intervals. Then, treated mice were sacrificed; their spleens were removed, and obtained lymphocyte cells were cultured in the presence of determined concentrations of antigen for assessment of cytokine levels. Levels of IFN-gamma and IL-2 (as Th1 pathway indicator) and also IL-4 and IL-10 (as Th2 pathway indicator) were measured in the supernatant of cell culture medium. Induced IgG was also measured in the serum of treated mice.

Results: Our results showed that ZHER2 affibody could induce production of IFN-gamma and IL-2 in a significant manner. IL-4 secretion was induced weakly. No significant change in the level of IL-10 (in the supernatant of cultured splenocytes) and IgG (in the sera of treated mice) were detected.

Conclusion: In conclusion, it seems that ZHER2 affibody have a potential to induce Th1-type immune response. This potential should be mentioned in future clinical usage of affibody molecules.

Keywords: ZHER2 affibody, Immune Response, Cytokine, Immunoglobulin G, HER2.

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Poster Presentation

A-10-296-1

Evaluation of Adverse Drug Allergy in Patient's Admitted in Shahid Sadoughi Hospital, Yazd 2011-2014

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Objective: Drug reactions are common and can be dangerous. 6 to 10 percent of drug reactions are allergic which can be fatal in some cases. In many cases, adverse drug reactions are predictable and can be prevented. Regarding to the points that there was not any study in the field of drug reactions in the Yazd

University of Medical Sciences, we aimed to evaluate that. Identifying of drug reaction prevalence and common culprit drugs will help researchers in future studies in this filled to plan for prevention of them.

Material and Methods: In a retrospective descriptive study, records of patients who were admitted in shahid sadoughi hospital due to drug reaction from 2011 to 2014 were evaluated. Patient's information such as gender, age, occurred drug reaction, type of drug allergy, duration of hospital stays and the time of drug reaction after drug usage completed in the data form collection.

Results: From 154 cases which admitted with adverse drug reaction, 77 cases (50%) were related to drug allergies and 13 (4.8 percent) were drug complications and 64 cases (41.6 %) were drug toxicity. 78 patients were male (50.6 percent) and 76 (49.4 percent) patients were female. 64 patients (41.6 percent) were less than 6 years and 28 patients (18.2%) were 6 to 14 years and 62 patients (40.3 %) were adults. Antiepileptic drugs were the most common causes of drug reactions (31.2 percent) of which the most common drug was lamotrigine (15.6 percent). Drug allergies were categorized in type I, 12 patients (8.7%), type II no case, type III, 9 patients (8.5%) and type, 56 patients (36.8 percent). Finally, five deaths were reported due to drug reaction.

Conclusion: Adverse drug reaction was common and remarkable in shahid sadoughi hospitals and from 2011 to 2014 its prevalence had increased. General physicians must be aware of these reactions to evaluate patients with immediate and severe reactions. Reduce the consumption of medication without prescription may also be useful in preventing drug reactions.

Keywords: Drug reactions, Drug allergies, Drug toxicity, Side effects

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Poster Presentation

A-10-90-1

Introducing, Report and Immunoinformatics Study of Allergic Protein Sequences in Wheat (Triticum Aestivum) and Identification of Effective Allergen Epitopes by Epitope Mapping Method

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Objective: Wheat is one of the important compounds in the diet. Recognition and introducing of major allergens of wheat plays an important role in modern

therapeutic approaches against non-celiac wheat allergy disease. The aim of this project that was carried out by insilico methods is introducing and categories of the best epitopes from wheat protein sequences. Recognizing of the best epitopes can be a suitable method for the designing of recombinant construct from these epitopes to treatment strategies against non -celiac wheat allergy to such as desensitization and vaccine therapy.

Material and Methods: After extraction of wheat allergenic protein sequences by SDAP server, these allergens were classified. The sequences were analyzed by Predicted Antigenic Peptides software on the basis of antigenicity for humans and the most powerful of them were selected based on software score. Three-dimensional structure of each selected sequences was extracted from the PDB site or designed based on homology modeling by Swiss- Model software. Then epitope mapping was done with Ellipro software and strongest epitopes were selected.

Results: By selection of Triticum aestivum (wheat) from NCBI, Uniprot databases and SDAP, more than 30 types of allergic protein sequences were extracted. Among these proteins, 11 allergic proteins with score of higher than 1.02 in Predicted Antigenic Peptides software were selected. After determining the 3D structure of chosen proteins and epitope mapping by Ellipro software from IEDB server, 30 effective epitopes of these proteins were introduced. Finally, 3D structure and sequence each of epitopes were identified

Conclusion: Designing and producing of recombinant construct containing effective allergic epitopesis one of the most effective ways to vaccine therapy for allergy. Epitope mapping is introducing effective and important epitope. Therefore, Immunoinformatics and in silico methods help to recognition of allergens and best epitopes

Keywords: Allergen, Non-celiac wheat allergy, Epitope mapping, Desensitization, Immunoinformatics methods

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Poster Presentation

A-10-395-1

The Fungal Spore Calendar in 6 Years of the Tehran-IRAN

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Objective: Fungal spores are known as one of the important airborne allergens in human beings in both an outdoor and indoor environment. They are prevalent in all climates and in every geographical area and contribute a major part of suspended bio-particulate matter of the air. In this research investigated to understand the spectrum of fungal diversity of Tehran to prepare fungal spore calendar and influence of metrological parameters and air pollution in seasonal variation.

Material and Methods: By using two samplers, one was daily records Burkard 7-days spore trap during 2011-2016 in Tehran areas with high air pollution (North, South, West, East, center) and control zone with clear area was (Parand city near the Tehran) and using a volumetric petri plate sampler put on the consisting media culture subrodextros agar with chloramphenichol was used and each colony were counted respectively and studying by optical microscopy.

Results: 32 fungal spore types were recorded during the survey period. In the present study, were identified as the peak seasons for different areas in Tehran. Aspergillus species was the main contributor to the total fungal load with %76.7 followed by Alternaria, cladosporium, Fusarium, candida, penicillium, yeasts, Trichotechium, Pesudoallescheria, strilehyphae, Auerobasidium, Acromonium, Ulocladium, Mucor, Rhizopus, Curvularia and Epicoccum percents of a fungal spore calendar. An attempt has also been made to assess the allergenicity of some of the fungal types recorded from the atmosphere of different in Tehran and control areas. Meanwhile the value of daily count of fungal spores was higher in April, September, November and January more than other months and the meteorological parameter that most influenced airborne spore concentrations was temperature and humidity significantly and positively in the case of dry-air

spores and fungal spores concentrations were observed on air polluted days in Tehran significantly p=0.001 with respect to the control area.
Conclusion: Seasonal climatic changes are very important factors in reducing or increasing suspended spores in air and detailed study in this field can get a spore calendar to each patient who has Immunodeficiency, lung disease, allergic and asthma diseases and others.

keywords: Fungal spores, Aspergillus species, Metrological parameters, Tehran
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Poster Presentation
A-10-419-1

A case of DREES Syndrome with Hepatic Involvement

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Objective: DRESS (drug rash with eosinophilia and systemic symptoms) syndrome is a drug allergic reaction that has been described primarily with anticonvulsants, although many other medications have been implicated. It is characterized by fever,maculopapular rash, facial edema, eosinophilia, generalized lymphadenopathy, and potentially life-threatening damage of 1 or more organs, usually renal or hepatic. We want to present a case of DRESS without eosinophilia but hepatic involvement.
Material and Methods: A 4-year-old boy referred to our hospital with fever and rush from 3days ago. There was a HX of a GTC seizure and subsequent phenobarbital administration for 10 days. His physical exam revealed intact eye and oral, urinary mucosal health. No lymphadenopathy, organomegaly but generalized maculopapular skin rush.
Results: WBC:4500 L:35% N:60% E:3% Mon:2%, Hb:12, Plat:155000, Hb:11 U/A:NL BUN:NL Cr:NL
Conclusion: Our patient with Hx of anticonvulsant consumption and 10 days later, initiation of the clinical symptoms consists of fever, generalized pruritic maculo popular rush and liver damage (high level of SGPT, SGOT) we have considered diagnosis of DREES syndrome although there was not eosinophilia. Rush, pruritus

was rehabilitated and Liver enzymes were returned to NL level, 1wk after treatment with methyl prednisolone and antihistamine.

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Poster Presentation

A-10-65-1

Probiotic-therapy of Atopic Dermatitis in Children

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Objective: In recent years, the potential beneficial role of probiotic supplementation in the prevention and control of atopic dermatitis in the infants is well known. It is proved that the probiotics modulate the intestinal microflora composition and may have the immunomodulatory effect.

Material and Methods: This study was a randomized double-blind work to evaluate the efficacy of a milk formula supplemented with viable Bifidobacterium lactis strain Bb 12 (BbF) in the control and treatment of atopic dermatitis in infants younger than 1 year. For this purpose, within two years, from 1469 mothers, who had referred to nutrition centers of children, 4.28 % (63 cases) of them had infants who manifested atopic eczema symptoms during exclusive breast-feeding, were treated with this probiotic supplement for 3 months.

Results: To describe the extent and severity of atopic eczema, the SCORAD score was used. The result showed that the SCORAD score of the infants from pre-treatment (during breastfeeding) to post treatment (Taking probiotic-supplemented formulae), has been reduced from 12.5 to <1 score (P≤0. 05).

Conclusion: This study was the first clinical demonstration of specific probiotic strains modifying the changes related to allergic inflammation in Qazvin province. The result of this research and previous studies indicate that probiotics may counteract inflammatory responses beyond the intestinal milieu. The combined effects of these probiotic strains will guide infants through the weaning period, when sensitization to newly encountered antigens is initiated. The probiotic approach may thus offer a new direction in the search for future foods for allergy treatment and prevention strategies.

Keywords: Atopic Dermatitis, Infants, Probiotics

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Poster Presentation

A-10-195-5

Role of Nutritional Knowledge in Prevent Food Allergic Reactions

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Objective: A food allergy is an adverse immune response to a food protein. These kinds of allergies occur when the body's immune system mistakenly identifies a protein as harmful. Research done in respect to nutrition knowledge on people dealing at the same time with allergy is seldom the subject of dissertation in Iran as well as worldwide social medical literature. These allergic reactions have an acute onset (from seconds to one hour) and may include: hives, itching of mouth- lips- tongue- throat- eyes- skin or other areas, swelling of lips- tongue- eyelids or the whole face, difficulty swallowing, runny or congested nose, hoarse voice, wheezing and/or shortness of breath, nausea, vomiting, abdominal pain or stomach cramps, lightheadedness and fainting.

Material and Methods: This cross-sectional prospective questionnaire survey, were carried out in 200 students non-medical students Kermanshah province of Iran in grades BSc, MSc, PhD and DV. Their Knowledge about kinds of food allergy was evaluated. X2 & one-way ANOVA tests and P value<0.05 were applied for statistical analysis.

Results: Based on allergic questionnaire form, in 2.3% food allergy by students was confirmed. Although sensitivity levels vary from person to person, the most common food allergies are allergies to milk, eggs, peanuts, tree, nuts, vegetables, fruits, seeds, soy, rice, wheat, maize, seafood, shellfish, spices, chemical additives, synthetic and natural colors.

Conclusion: In response to the risk that certain foods pose to those with food allergies, countries have responded by instituting labeling laws that require food products to clearly inform consumers if their products contain major allergens. Therefore, nutritional knowledge and early prevention of exposure to them may help reduce the allergic reactions.

Keywords: Nutritional knowledge, Food allergic, Social non-medical students

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Poster Presentation

A-10-128-1

Comparison of Sleep Quality, Fatigue and Sexual Function between Patients with Allergic Rhinitis before and after Treatment - Amiralmomenin Hospital from January 2014 to March 2015

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Objective: The number of patients with allergic rhinitis during the past 15to 30 years is increasing, some studies have suggested that allergic rhinitis on sleep problems, fatigue and sexual dysfunction are common. Comparison of sleep quality, fatigue and sexual function between patients with Allergic Rhinitis before and after treatment Allergic Rhinitis from January 2014 to March 2015.

Material and Methods: After explaining the purpose of the project and obtaining informed consent, this study was conducted in two phases. At the first stage the following questionnaire data collected in different groups: 1. Participants collecting demographic characteristics 2. The questionnaire about sleep disorders PSQI. 3. The questionnaire fatigue MFI 20 4. FSFI questionnaires about sexual dysfunction for women and for men IIEF.

In the second allergic rhinitis patients treated for 6 weeks are anti-allergy drug. At the end of the sixth week of the questionnaire related to sleep disorders, fatigue and sexual function re-filled.

Results: In this study, 54 patients with allergic rhinitis in terms of quality of sleep, fatigue and sexual function before and after treatment were studied; in terms of gender The majority of the samples were 64.8% female and 35.2% male. Comparison of fatigue in the wake of the samples before and after treatment show that in the public sphere fatigue score physical environment and in the area of mental and the overall, total fatigue score were statistically significant from before and after the treatment. Comparing the quality of sleep and the separation of areas, sleeping areas Helpful hypnotic sleep drugs, in before and after treatment was statistically significant, as well as sexual dysfunction in separate areas in the area of moisture and the area of sexual desire shows that significant differences

Conclusion: In our study, it was shown that treatment and recovery of patients plays an important role in reducing fatigue allergic rhinitis and can lead to improved quality of life, as well as sleep quality in areas of sleep and sleep-

inducing drugs significantly improved after treatment. This factor also affects the quality of their life. The results of our study showed that sexual desire increased after treatment

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Poster Presentation

A-10-156-2

The Prevalence of Allergic Rhinitis, Eczema and Asthma in Guidance Schools

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Objective: Eczema, allergic rhinitis and Asthma as a common chronic disorder in childhood. These disorders have different prevalence in different geographic areas.

Material and Methods: This study does to determine the prevalence of allergic diseases (asthma, allergic rhinitis and eczema) in guidance school in our region. In addition, we evaluate a few environmental factors such as BMI, smoking and delivery in our study. This analytical-cross sectional study was performed on children aged 12-14 years with mean 13.13±0.95 (n=3000, female=1576, 52.54%) during 2012-13, According to ISAAC study. Data was gathered by ISAAC first phase questionnaire and analyzed by SPSS 20 and Chi square test.

Results: The 12-month prevalence rates of symptoms were as follow: wheezing was 30.5%, allergic rhinitis symptoms (sneezing and pruritus) were 30% and atopic dermatitis symptoms (pruritus skin lesion) was 15%. History of pets and smoking was positive 6.6 and 36 percent respectively. 52.5% was born with caesarean section. 32.5% had wheezing during sport. The diagnosis of asthma, allergic rhinitis and eczema was 12.2%, 28.5% and 15% respectively. Eczema, asthma and allergic rhinitis was significantly more common in male students ($p<0.05$).

Conclusion: Our study showed that asthma, allergic rhinitis and eczema have a high Prevalence and they are more common in boys.

Keywords: Asthma, Allergic Rhinitis, Eczema, Guidance school, Students

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Poster Presentation

A-10-330-1

Comparison of Response to Conventional Medical Treatment in Aspirin Sensitive and Aspirin Tolerant patients with Nasal Polyposis

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Objective: Nasal Polyposis is a chronic and recurrent disease. Among patients with nasal polyposis 15% are aspirin sensitive. In parallel with increased disease severity, the prevalence of aspirin sensitivity increases. An oral aspirin challenge is necessary for Diagnosis. Aspirin challenge testing is difficult and time consuming, adverse reactions of aspirin are dose dependent and during aspirin challenge high doses of aspirin are administered, on the other hand aspirin desensitization is a specific treatment for patients with nasal polyposis and aspirin sensitivity. Therefore, it is necessary to find criteria to select patients with high probability of aspirin sensitivity for aspirin challenge testing. This study is done to compare aspirin sensitive and aspirin tolerant patients with nasal polyposis, according to response to standard treatment. SNOT22 scores were compared before and after treatment to evaluate response to treatment.

Material and Methods: The diagnosis of nasal polyposis is made by CT scan. Patients were included in order, until the sample size was fulfilled. SNOT22 questionnaire was used for evaluation of severity of symptoms before and three months after standard treatment.

Results: In this study, 78 patients (25 males and 53 females) with the average age of 41/56±11/74 years (18-63) were included. Aspirin challenge test was positive in 29 patients (37/2%). SNOT22 scores before treatment in aspirin sensitive and aspirin tolerant patients were 52/97±17/73 and 47/04±18/30 respectively and after treatment were 27/41±16/61 and 24/88±16/72 respectively which are not significant (p=0.518).

Conclusion: There is no significant difference between two groups in SNOT22 scores before and after treatment. According to this study, the only factor that could predict aspirin sensitivity is the history of recurrent reactions to NSAIDs, especially to different kinds of NSAIDs.

Keywords: Nasal Polyposis, SNOT22, Aspirin Sensitive.
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Poster Presentation

A-10-307-1

Characteristics and Etiology of Pediatric and Adult Anaphylaxis in 3 Tertiary Hospitals in Iran

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Objective: Despite increasing prevalence of anaphylaxis there is little information about its characteristics and the practice of health providers in treating anaphylaxis. To record the overall characteristics, etiology and therapeutic approaches of anaphylaxis in adult and pediatric population

Material and Methods: From May 2012 until April 2015 we retrospectively collected data of all patients diagnosed as anaphylaxis in the Allergy and Clinical Immunology department of Rasool-e-Akram, Ali Asghar and Firooz abadi hospital, Iran University of Medical sciences, Tehran, Iran. Demographic and clinical features, as well as its triggers and therapeutic approach in attacks were evaluated.

Results: 136 individuals, 64 males (47%), between 6 month and 68 years old (21.01±15.26 year), 72 of them (52.94%) under 18 years old (pediatric) were diagnosed anaphylaxis based on world allergy organization criteria. Skin 86.02% (pediatric 91.66% vs. adult 79.68%), respiratory tract 51.47% (pediatric 43.05% vs.

adult 60.93%), cardio vascular 50.73% (pediatric 54.16% vs. adult 46.87%), gastrointestinal 20.58% (pediatric 27.7% vs. adult 12.5%) and neurologic system 5.88% (only in adult) were the most common involved organs. Foods 69 (50.37%) [42 pediatric and 27 adult], drugs 34 (25%) [14 pediatric and 20 adult], idiopathic 16 (11.77%) [3 pediatric and 13 adult], insect sting7 (5.15%) [3pediatric and 4 adult], exercise 6(4.42%) [1 pediatric and 5 adult] whom three of them were exercise induced food dependent (1pediatric and 2 adult), vaccine 3 (2.2%) [Only pediatric] and latex1 (0.73 %) were the most identified causes. Milk, egg and wheat were the most common causative foods in pediatric but egg, sesame and milk were the most causes in adult. Drugs were more common in adult [14pediatric vs. 20 adult] with NSAIDs and antibiotics were the most common causes.

Conclusion: Cutaneous, respiratory, cardiovascular and gastrointestinal complains were the most common manifestations and food, drug and idiopathic were the most common causes of anaphylaxis in our case series. Anaphylaxis diagnosis, epinephrine subscription and refer to allergist was not optimum but it was significantly better in severe cases when patient was admitted.

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Poster Presentation

A-10-194-2

Chronic Urticaria and IUD (A Case Report)

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Objective: The objective of this case report is to present a patient with chronic urticaria for 3 years duration without response to conventional treatment but improved after removal of IUD (intrauterine device) when urticaria persists more than 6 weeks is defined as chronic urticaria. Its prevalence is 1% of general population, more common in women than men and more in 3rd to 5th decades of life. There is no known cause in most of these patients. Although chronic urticaria is a self-limited disorder, in about one fifth of patients the disease persists more than five years.

Case presentation: A 43 years old woman referred to allergy clinic with chronic urticaria since 3 years ago. The patient did not have any other symptoms. Physical examination was normal. Lab work up including CBC, ESR, CRP, liver and kidney function test, ANA, C3, C4, stool exam and U/A was normal. Patient's symptom

was severe without response to high doses of antihistamines and only partial and temporary responses to systemic corticosteroids. The patient also had IUD (model: copperT380A) for contraception since 3 years ago. The patient was recommended for removal of IUD. urticaria improved after removal of IUD and there was no problem in the follow up for 6 months later.

Conclusion: IUD can be a cause of chronic urticaria that should be considered in females in reproductive ages.

Keywords: Urticaria Chronic, IUD

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Poster Presentation

A-10-467-1

Frequency of HLA DQA1 and HLA DQB1 Alleles in Patients with Celiac Disease from Different Ethnicities of South-west of Iran

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Objective: Celiac disease is a chronic autoimmune intestinal disorder resulting in intestinal villous atrophy and severe long-term complications, which occurs, in genetically predisposed person who receives gluten of wheat, rye and barley. Several research work have shown the significant association of HLA-DQ2 and HLA-DQ8 serotypes and celiac disease in North America and Europe, but less is known for the Asian countries such as Iran.

Material and Methods: We tested 46 patients with celiac using Olerup SSP® DQA1*02,05; DQB1*02,0302 Kit a PCR- SSP method and the results were compared with the formerly published data from Iran.

Results: In the studied patients, the prevalence of DQA1 (05:01:01:01 01:01:02) and DQA1 (05:01:01:01 12:03) alleles include 95.7% of the total alleles. Meanwhile, the risk for catching celiac in individuals with DQA1 (05:01:01:01 12:09 05:11) alleles is more than others are. In our study, a suggestive evidence of association was found between DQB1 (02:01:01 10:29) and DQB1 (03:04) alleles and being infected with Helicobacter pylori (H. pylori). Moreover, borderline

significant associations were observed between DQB1 (03:01:01:0103:01) and DQB1 (02:01:01 10:01:06) alleles with intestinal biopsy, as well as, with the Marsh index. The study group was composed of Lur and Arab ethnicities.

Conclusion: Although, we observed some differences between HLA DQA1 and HLA DQB1 genotypes obtained in this study, further studies using larger population are necessary to shed light on the celiac predisposition and its ethnicity dependence in Iran.

Keywords: Celiac, Ethnic, HLA DQA1, HLA DQB1

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Poster Presentation

A-10-178-1

Hypersensitivity Reaction to Lidocaine: A Case Report

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Objective: LIDOCAINE HYDROCHLORIDE is the favored anesthetic agent used in outpatient surgical procedures. Adverse reactions to lidocaine are uncommon. The purpose of this case report is to present the case and the symptoms, as well as our diagnosis and the further measures taken in managing the patient's condition. The basic goal of this case report has been to trigger the start of more thorough studies regarding this type of hypersensitivity to Lidocaine.

Material and Methods: A 12-year-old boy with the chief complaint of deep caries in his right upper and lower primary second molars and the need for extraction was referred to the dental office. After the injection of lidocaine, he returned with edema around his eyes and a general edematous face appearance, but had no itching.

Results: To initially suppress the symptoms, the case was prescribed a single dose of Dexametasone. The patient returned to the office the next day, with the edema still persistent. This time we prescribed Betametasone for the patient. After the stages of prednisolone therapy, the patient was monitored again, and was discharged successfully.

Conclusion: The patient's symptoms lead us to the diagnosis of a hypersensitivity reaction to lidocaine. Once the diagnosis was confirmed, the patient was given an emergency dose of Dexametasone to which he showed no signs of relief. The final prednisolone therapy finally relieved the patient's symptoms.

Keywords: Hypersensitivity reaction, Lidocaine adverse reactions, Emergency treatment

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Poster Presentation

A-10-240-1

The Impact of Allergic Rhinitis on Quality of Life: A Study in the West of Iran

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Objective: Chronic diseases due to their prolonged and debilitating nature, affect patient's quality of life dramatically. Allergic rhinitis (AR) is one of the most common chronic diseases. The present study aimed to determine quality of life in the patients with allergic rhinitis.

Material and Methods: In a cross-sectional study, 146 patients with AR were enrolled in this study. The required data were collected using the Rhino-conjunctivitis Quality of Life Questionnaire (RQLQ). The questionnaire was distributed among the patients by a physician and analysis of data was carried out by SPSS version 16.

Results: Of the total of 146 AR patients admitted to the clinic, 61% were female and 39% were male and had a mean age of 29±10.17. Rhinorrhea (82.2%) was the most common symptom and moderate to severe intermittent rhinitis (38.4%) was the most common type of the disease. A dramatic reduction in quality of life was observed in 62% of the patients, and severity of the disease reduced significantly the quality of life (P=0.000).

Conclusion: Allergic rhinitis can adversely affect every aspect of a patient's life, including sleep quality, mood and daily activities.

Keywords: Allergic rhinitis, Quality of life, Western Iran

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Poster Presentation

A-10-123-1

Assessment of Specific IgE to Common Aeroallergens among Allergic Patients in Ahvaz City, a Region Affected by Dust Storms

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Objective: Aeroallergens are the most common causes of respiratory allergic diseases in the world. In recent years, due to the industrialization of cities and the problems caused by air pollution, respiratory allergic diseases have increased significantly. In many countries in the Middle East, dust storms have been an important source of air pollution resources that factors such as climate changes can transform it into a phenomenon in this region. The aim of this study was to assess of specific IgE to common aeroallergens using immunoblotting-based assay.
Material and Methods: In a cross sectional study, 124 patients with the sign and symptoms of allergic disease attending Pasteur Medical Laboratories in Ahvaz city were investigated. All blood samples from the patients were taken and their serum ware collected. Allergen-specific IgE antibodies determined by Allergy screen® test strip (Mediwiss Analytic GmbH), which contain up to 49 common aeroallergens in Iran. The result given in classes (from 0 to 6) and IU/ml (range 0 to 100).
Results: Of 124 patients 89 (71.7%) had a positive reaction to at least one of the 49 aeroallergen that bounded as the test line to a nitrocellulose membrane. The most frequent positive test was due to outdoor allergens (67.4%). Among these allergens weed (40.4%), trees (35.4%) and grasses (24.2%), respectively, were the most frequent. Among the weeds, Kochia scoporia had the highest frequency (45.6%). Of indoor allergens (32.5%), fungi (50.3%), shell and animal dander (20.1%) and dermatophagoides (11.6%), respectively, were important.
Conclusion: Pollen is the most common cause of respiratory allergy in Ahvaz city based on immunoblotting-based method. Since pollen and fungal spores are spread through the air, so it seems that dust storms have an important role in the development of allergic diseases. Therefore, accurate identification and characterization of these aeroallergens play an important role in the prevention and treatment of allergic patients in this region.

Keywords: Allergy, Immuno-blotting assay, Aeroallergens, Dust storms, Ahvaz
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Poster Presentation

A-10-121-1

Evaluation of the Level of Seven Different Allergens in Five Different Cities of Iran

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Objective: Exposure to indoor allergens including house dust mites, cockroach, molds, cat and mouse is a major risk factor for development of asthma and allergic rhinitis. Assessing of these allergens in each area, is a critical step for evaluation the risk of sensitization and controlling allergic symptoms. The aim of this study was to evaluate the level of seven important indoor allergens including mites (Der f1 and Der p1), mouse (Mus m1), cat (Fel d1), ambrosia pollen (Amb a1), cockroach (Bla g1 and) and aspergillus (Asp f1) in five different cities around Iran.

Material and Methods: In 2015, 260 dust samples were obtained from living room's carpet in five cities around Iran including Birjand, Zahedan, Shiraz, Khoramshahr and Mashhad with different geo-climatic conditions. Dust samples were weighted and extracted by PBS-T buffer and then the level of different allergens was measured by a commercial ELISA kit in dust extracts.

Results: Mean concentration of Asp f1 was higher than other allergens in all cities and Mashhad had highest concentration of Asp f1 (7.19 ug/ml). Among other allergens, Musm1 had the highest mean concentration in Birjand and Zahedan (2.67 ng/ml vs 5.87 ng/ml). Der f1 and Bla g1 showed the highest concentration in khoramshahr and Shiraz respectively (6.15 ng/ml vs 12.3 ng/ml). Mean concentration of Der f1 was higher than Def p1 and the concentration of Fel d1 was lower than 1 ng/ml in all cities. Concentration of Amb a1 was highest in Mashhad (1.04 U/ml).

Conclusion: The obtained results showed the great variability in concentration of different allergens in different cities. This inconsistency can partly be explained by geoclimatic factors especially temperature and relative humidity.

Keywords: Allergens, ELISA, Iran

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Poster Presentation

A-10-356-1

Production and Study of Immunological Properties of Transformed Lactococcus Lactis Capable of Expressing Sal K1, The Major Allergen of Salsola Kali Pollen, as Live Vaccines for Allergy Treatment

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Objective: The Salsola kali pollen is considered as a main cause of allergic sensitization in the desert and semi-desert regions. We constructed recombinant Lactococcus lactis producing Sal k1 protein with the aim of being used as a mucosal vaccine for specific SLIT immunotherapy that has been introduced as a noninvasive and safer approach for allergen-specific immunotherapies.

Material and Methods: The Sal k1 gene was amplified, and transferred into a PNZ 8148 plasmid. The PNZ8148-Sal k1 recombinant plasmid was transformed into of competent E.coli strain MC1061 for replication, and then cloned into competent L. lactis by electroporation. Production of recombinant Sal K1 (rSal K1) protein was induced by nisin. The rSal K1 protein production confirmed by SDS-PAGE and western blot analyses. Female Balb/c mice were intraperitoneally injected rSal k1 protein and Alum, followed by inhalation of rSal k1 protein on seven consecutive days (20 min per day). SLIT was applied using PBS, wild-type Lactobacillus lactis strain, recombinant strain, rSal k1 and combination of both, every two days for a period of three weeks. Then, serum levels of IgE, IgG1 and IgG2a and IL-2, IL-4, IL-10, IFNγ, and TGFβ secretion in spleen mononuclear cell culture supernatant was measured by ELISA.

Results: The recombinant L. lactis was successfully constructed. Production of a 40-KDa rSal k1 protein with the L. lactis was confirmed by SDS-PAGE analysis. In addition, western blot analysis using specific mouse anti-Sal k1 polyclonal antibodies verified immune-reactivity of 40-KD rSal k1 protein. serum IgE and IgG1 and spleen cell culture IL-4 levels were significantly reduced, while serum IgG2a, as well as spleen cell culture IL-2, IL-10, IFNγ, and TGFβ levels were

elevated in the SLIT mice compared to the control (P< 0.05). The histopathological examination of intestinal tissues revealed no sign of inflammatory response.
Conclusion: This study demonstrated that L. lactis be used as a promising live delivery system for recombinant Sal k1 protein without altering its immunoreactivity and showed provided data on induction of Th1 responses concomitant with down-regulation of Th2 responses induced by various SLIT approaches.

Keywords: Lactococcus lactis, Pollen, Salsola kali, Sal k1, Sublingual immunotherapy
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Poster Presentation
A-10-368-1

Evaluation of the IL-1α and IL-1β Gene Polymorphism in Chronic Spontaneous Urticaria

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Objective: Chronic urticaria is one of the most frequent cutaneous disorders. It is classified as chronic spontaneous and chronic inducible urticaria. Although mast cells are considered as the key cells that play the central role in the pathogenesis of chronic urticaria, other inflammatory cells including neutrophil, eosinophil and mononuclear cells along with T cells might also take part in the pathogenesis of chronic urticaria. The serum level of the inflammatory and anti-inflammatory cytokines such as IL-1β IL-4, IL-6, IL-13, TGF-β and TNF-α has been shown to be altered in the patients with chronic urticaria. In the current study, the IL-1α and IL-1β gene polymorphism was evaluated in patients with chronic urticaria comparing to the control group.

Material and Methods: The study was designed as a matched case- control survey. IL-1α (in position -889 C>T) and IL-1β (in positions -511 and +3962 C>T) gene polymorphism was done by single specific primer-polymerase chain reaction (SSP- PCR) in a total of 90 patients with chronic spontaneous urticaria and 140 healthy controls. Autologous serum skin test (ASST) was done based on the universal guidelines. A thorough history was taken to confirm the diagnosis and rule out the inducible form of chronic urticaria.

Results: Autoimmune chronic urticaria was found in 39 patients (43.8%) who showed positive ASST. At the position of -889 C>T in the IL-1α gene, C allele was the most frequent one. The frequency of TT genotype was the least, however TC and CC genotypes were found to have nearly the same frequency. At the -511 and +3962 C>T position in the gene of IL-1β, the most frequent allele in both group was C, however TC at -511 and CC at +3962 were the most frequent genotypes. No significant difference was found in the frequency of the alleles and genotypes in the polymorphic site of the IL-1α and IL-1β gene comparing to the controls ($p>0.05$).

Conclusion: IL-1α and IL-1β gene polymorphism do not predispose patients to chronic spontaneous urticaria.

Keywords: Urticaria, Gene, Polymorphism

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Poster Presentation

10-180-1

Ofloxacin Induced Anaphylaxis in a Teenage Girl on First Exposure

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Immediate hypersensitivity reactions to quinolones are not common in frequency from 0.4% to 2%. A literature review revealed that ciprofloxacin was the most frequently implicated in adults because of its high consumption, followed by ofloxacin and cinoxacin. The most frequent reactions were urticaria and anaphylaxis. Gastrointestinal complaints are the most frequently reported adverse drug reactions to fluoroquinolones. Other adverse events include headache, dizziness, increased liver enzyme levels, photosensitivity, tachycardia, QT prolongation, and eruptions. Ofloxacin a second generation quinolone, has

been approved for the treatment of acute and chronic bacterial infections. Anaphylaxis has been documented as a rare adverse drug reaction to ofloxacin; however, diagnostic tests are needed to evaluate whether these reactions are the result of ofloxacin reaction. While the results of skin tests are considered unreliable due to false-positive responses, the oral provocation test is currently considered to be the most reliable test. Herein, we report a very young case of immediate hypersensitivity to ofloxacin which according to our knowlege might be the first in children and will show the review of reported cases in pubmed. As anaphylaxis is potentially life-threatening, the uneventful administration of fluoroquinolones to patients who have experienced a prior reaction to this type of agent should be avoided.

Keywords: ofloxacin hypersensitivity, quinolone drug allergy, anaphylaxis
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Asthma

The Third International Congress of
Immunology, Asthma & Allergy

Invited Speaker

A-10-203-1

Nursing Care of Asthma Symptoms

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Objective: Asthma is a chronic disease with acute exacerbations characterized by intermittent airway obstruction in response to a variety of stimuli. The immediate care of patients with asthma symptoms depend on the severity of the symptoms. To identify and summarize nursing care of asthma symptoms

Material and Methods: In the present study, the following websites were used: sid, prequest, Cochran, Elsevier, Web of Science, PubMed, Magiran, Google scholar, and Iran medex. Initially, subject search, MESH, and keywords from 2000 to 2015 were used. Eventually, 24 articles with "nursing care", "asthma symptoms" and "Quality of life" as keywords were remained and studied.

Results: The final sample consisted of 13 studies conducted in the nursing cares appropriate for the patient with asthma include: Obtain a history of allergic reactions to medications before administering medications/ monitoring the severity of symptoms, breath sounds, peak flow, pulse oximetry and vital signs/ Identify medications that the patient is currently taking/ Administer medications as prescribed and monitor the patient's responses to those medications/ Administer medications as prescribed and monitor patient's responses to medications/ Administer fluids if the patient is dehydrated.

Conclusion: A major challenge is to implement basic asthma management principles at the home and community level.

Keywords: Nursing care, Asthma disease, Asthma symptoms

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Invited Speaker

A-10-210-1

Nursing Care Models and Approach in Asthma

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Objective: Asthma is one of the most common chronic diseases in the world and despite medical advances; it is still a Major problem for healthcare systems. The

effective strategy to control asthma is related to education. Standard education programs such as self-management, improvement in self- care and self- efficacy behaviors, partnership care model and Peer education model have important role in asthma successful management. This study was carried out to provide nursing care models and approach in asthma.

Material and Methods: In this study, different papers last 5 years in the field of major databases; approaches, Models and various training programs and their effects on asthma control checked.

Results: Studies showed self confidence in control of asthmatic symptoms, peak flow meter using and track SMS on self- control promotion, peer education Model on patient knowledge and performance and partnership care model on quality of life for adults with asthma have a positive impact. Daneshi & et al findings in partnership care model showed statistically significant differences in quality of life mean score between experimental and control groups($p<0/05$). Hemmati et al also showed peer education students with asthma improved their awareness and performance about asthma ($p<0/001$).

Conclusion: Using of standard models and educational programs on care, cure and control of asthma is effective in all ages. Given the important role of nurses in patient education and continuous care, the implementation of these programs are suggested due to cultural, social and economic in of all ages patients.

Keywords: Asthma, Nursing care, Model

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Invited Speaker

A-10-224-1

Family Role and Asthma Patient

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Objective: Asthma is a chronic disease with acute exacerbations characterized by intermittent airway obstruction in response to a variety of stimuli. The immediate care of patients with asthma symptoms depend on the severity of the symptoms. The aim of this study was to examine the relationship among family management behaviors and asthma morbidity as perceived by maternal caregivers. Numerous studies have identified the relationship of the family caregiver's perception regarding asthma management and the asthma outcomes, although few have

examined family caregiver asthma management behaviors. Several model asthma education programs are available to improve patient self-management, and elements of these models are discussed as they relate to the teaching role of health-care providers. Self-regulation is being explored in current asthma education research, and preliminary findings of a study are presented that show self-regulation behaviors to be associated with more frequent use of asthma management strategies by patients.

Material and Methods: In the present study, the following websites were used: sid, prequest, Cochran, Elsevier, Web of Science, PubMed, Magiran, Google scholar and Iran medex. Initially, subject search, MESH, and keywords from 2000 to 2015 were used. Eventually, 20 articles with family role and asthma were studied.

Results: Improved family management would reduce the disruptive and stressful impact of asthma on the family. Better family management would decrease health care utilization that is hospitalization and emergency room visits.

Conclusion: A major challenge is to implement basic asthma management principles at the home and community level. Improved management would reduce school absences.

Keywords: Asthma disease, Asthma symptoms, Family role

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Invited Speaker

A-10-359-1

Nutrition during Pregnancy and the Risk of Asthma in Offspring

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Objective: Asthma is an increasing global health burden, especially in the western world affecting around 300 million individuals worldwide. Aside from genetic determinants, many experts have proposed that these increases may be a consequence of changing environmental and/or lifestyle factors. Recently, his relationship between a mother's diet during pregnancy and the child's subsequent risk of developing asthma or atopy has become a topic of growing investigation.

Material and Methods: Extensive literature review was carried out by retrieving articles from international databases including Google Scholar, Ovid and Scopus

which published from 2010 to 2016. To find the articles following keywords were used: 'asthma AND pregnancy', 'maternal diet AND asthma', 'maternal diet AND offspring's asthma'.

Results: Maternal nutrition has been recognized as a potential (and potent) factor in the development of the fetal airway and immune system. Nutrients during pregnancy may affect T helper cell differentiation toward a Th2 bias through cytokine regulation and promote normal airway formation in the fetus. Reduced maternal intake of vitamin E, vitamin D, and zinc during pregnancy all have been associated with a greater risk of development of asthma and wheezing symptoms in 5-year-old children. Dietary patterns such as the 'Mediterranean diet', which is characterized by high fruit and vegetable intake and low consumption of saturated fatty acids (SFA) from animal sources has been associated with a lower prevalence of asthma symptoms among children. Frequent maternal intake of fish during pregnancy asthma, particularly in children who have asthmatic mothers, also reduced the risk of food and possibly inhalant allergic sensitizations. However, daily consumption of nut products during pregnancy has been associated with asthma in the child by age 8 years.

Conclusion: Combined, these studies suggest that the prenatal diet can alter the intrauterine environment in complex and possibly inconsistent ways. If these findings are confirmed, a new paradigm for asthma pathogenesis may be emerging.

Keywords: Maternal, Nutrition, Asthma, Diet, Offspring

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Invited Speaker

A-10-353-1

Psychological Aspects of Asthma

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Objective: Evidences are now available about the link between asthma (in terms of severity and control), some psychological aspects (subjective perception, alexithymia, coping style) and mental health (anxiety, depression). Asthma can be affected by psychological disorders like stress, anxiety, sadness, and depression. The psychological impact that asthma has on any individual person is determined

by many factors. This review was aimed to explore these factors and their role in the successful optimal levels of asthma control.

Material and Methods: In this review study, seven research articles about psychological factors, their impact on asthma, and the ways of control them from 2008 to 2016 were reviewed.

Results: Some useful strategies like take an active role in taking care of yourself, learn and practice relaxation exercises or meditation, find a health care provider to feel comfortable with, acknowledge and accept the feelings, and asthma education programs that teach about the nature of the disease, medications, and trigger avoidance tend to reduce asthma morbidity. The education group had greater preventative medication usage, more peak flow meters and better peak flow technique, more self-management plans, less nocturnal wakening, better self-reported asthma control, better knowledge of action to take if their asthma deteriorated, and more people at home who could help in an asthma attack than the control group.

Conclusion: Education to patients and screening of mental symptoms and psychological aspects related to asthma, could lead to plan appropriate interventions to better control asthma and to improve the patient's wellbeing.

Keywords: Asthma, Psychological factors

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Invited Speaker

A-10-239-1

Care Strategies during Pregnancy and Child Birth in Women with Asthma

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Objective: Pregnancy in 50% of cases no effect on asthma severity and process. If asthma is well-controlled, asthma is not a significant negative impact on pregnancy and the fetus. Otherwise increase the risk of preterm birth, low birth weight, intrauterine growth retardation, pregnancy-related hypertension, mortality and morbidity and neonatal hypoxemia. Asthma diagnosis based on

history, physical examination and laboratory findings will be given. Spirometery is the best and most reliable method of assessing asthma severity and response to therapy. It is recommended to do if it will be available in all the affected cases. Treatment of asthma is similar in pregnant and non-pregnant persons with the difference that the fetal heart rate should be evaluated in pregnant patients.

Conclusion: About 10% of asthma patients experiencing acute attacks of the disease at the time of delivery that are treated by classic methods. Chronic patients should continue treatment during childbirth. If it requires labor induction in asthma patients, the drug of choice is oxytocin which is administered according to the classical method. Epidural analgesia in these patients is an ideal method. Prostaglandins cause bronchospasm in Group F and their use should be avoided as much as possible. Asthma control reduces the morbidity and mortality of asthma during pregnancy. Chronic asthma control is based on the four principles: 1- Evaluation of pregnant mother 2- Fetal Assessment 3- Remove or eliminate asthma triggers and 4- Drug therapy.

Keywords: Care strategies, Pregnancy and childbirth, Women with asthma

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Invited Speaker

A-10-385-1

The Effect of Acupressure on Severity of Fatigue in Asthmatic Patients

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Objective: Fatigue, one of the most common complaints of patients with respiratory disease that reduces the person's ability to perform daily activities and quality of life is disturbed. Among chronic respiratory diseases, asthma is the most common incidence is significant. Although the impact of drug treatment for asthma has been demonstrated, but not only is not helpful in all aspects of the disease, there are many side effects. Non-drug treatments such as acupressure, along with drug therapy in patients' relief from uncomfortable symptoms can be used. Therefore, we decided to plan this research with the aim of the effect of acupressure on fatigue in asthmatic patients.

Material and Methods: This is a Randomized clinical trial study in which 72 asthmatic patients participated. Patients were randomly assigned into

intervention and control groups(36 subjects assigned to each group) and Random sampling was done. Patients in the control group received only routine care and in the intervention group in addition to routine care center, Acupressure 3 times a week, each time for 20 minutes on a 5-point pressure was performed for 8 weeks and Acupressure was the implementation of follow-up by telephone. Data collection tools, including: Demographic questionnaire, Fatigue severity scales (FSS) that in both groups at 3 times, baseline, 4 and 8 weeks after the study was completed by patients. Data was collected into spss version16 and data using statistical t-test and chi-squer were analyzed.

Results: The study results revealed that in the intervention group decreased fatigue after intervention statistically significant difference in 8 weeks (p=0/015)

Conclusion: The results showed that the use of acupressure in asthmatic patients reduces fatigue. Therefore, is recommended that nurses use this technique as a complementary method to reduce fatigue in chronic disease especially in asthmatic patients.

Keywords: Acupressure, Fatigue, Asthma, Nursing care

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Invited Speaker

A-10-91-1

Nurses as Educators in Preventing of Acute Attacks Asthma

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Aim and Background: Among chronic respiratory diseases, asthma is the most common incidence is significant. Although the impact of drug treatment for asthma has been demonstrated, but not only is not helpful in all aspects of the disease, there are many side effects. Non-drug treatments such as nursing care, along with drug therapy in patient's relief from uncomfortable symptoms can be used. Relieve patients of this symptoms can also have an impact on their quality of life and Nurses are the best people for the implementation of these interventions on patients. Therefore, we decided to study with the aim of Nurses as Educators in Preventing of Acute Attacks Asthma do.

Material and Method: This is a study of review, which the study of texts and articles for the last five years has been achieved in relation to asthma.

Results: Nurses are the largest health groups that involved in the care of patients. Patients with chronic diseases are one of the layers that need nursing care. One of the key roles of nurses is comprehensive care of patients. In line with this role, it is important to use new techniques for nursing care of patients with asthma**.**
Conclusion: The results showed that the use of acute attacks in asthmatic patients reduces acute attacks and improves quality of life. Therefore, it is recommended that nurses use of nursing care to reduce fatigue and improve their quality of life of patients with asthma.

Keyword: Asthma, Nursing care, Acute attacks asthma
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Invited Speaker
A-10-177-1

Family Education in Patients with Asthma

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Objective: There is a significant n increasing trend of Asthma in both developed and developing countries. More than 150.000.000 people around the world suffer from asthma. Asthma decreases the quality of life of patients and increases the health system cost and financial hardship in patients' family. The purpose of this article is to review asthma risk factors and focus on family-centered education in prevention of asthma.
Case Presentation: In some of the patients, cough is the only sign of asthma. However, asthma attack appears with cough, dyspnea, chest tightness, and respiratory distress particularly in supine position. Other signs and symptoms in asthma patients are cold limbs, decreased pulse pressure, nausea, vomiting and diarrhea. It is suggested patients with asthma has a consultant or nurse specialist for long term follow-up. The consultant or nurse provides a comprehensive care plan and they modify patients' care plan based on life span changes in patients' life. Risk factors: There are many methods to recognize risk factor asthma attack and prevent patients confronting with these allergens. Recognizing allergens helps to control and prevent asthma. Allergens are pet, dust, pollen, smoke, foods

Conclusion: Since asthma involves all age groups, it is suggested all people in society including teachers, police, firefighters, and non-professional health staffs are educated to recognize and manage asthma attack symptoms.

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Invited Speaker

A-10-222-1

Nurses Role in Patient Education and its Impact on Quality of Life Improvement in the Patients with Chronic Asthma

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Objective: Nurses have a unique opportunity as frontline caregivers and patient educators to recognize and help to manage the widespread problem of asthma which has increased significantly over the last decades. Asthmatic patients have complex problems that are related to knowledge deficit and poor adherence to self-management skills. The overall objective of the review was to determine the impact of patient education on the quality of life improvement in asthmatic patients.

Materials and Methods: A literature search from 1996 to 2016 was conducted using the key words nurse, patient education, asthma and quality of life to identify related studies regarding the research question.

Results: Totally 20 studies included in this review. According to the results of the reviewed articles nurses have significant role in improving the patients' self-management skills which led to improvement in the all aspects of the life. Some of the most essential skills include monitoring the symptoms, recognizing and handling worsening asthma, taking the medication and handling the side effects, preventing or limiting exposure to asthma triggers, encountering with psychological problems and identifying the necessity to seek the care.

Conclusion: The nurses have a significant role in asthmatic patient education to reduce the impact of asthma on related morbidity, functional ability, and quality of life. To achieving this goal, the nurse educator should use a collaborative approach that encourages the patient to take responsibility for his or her own care.

Keywords: Nurse, Patient education, Asthma and quality of life

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Invited Speaker

A-10-162-5

Nursing Care in COPD

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Objective: Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used to describe progressive lung diseases including emphysema and chronic bronchitis. This disease is characterized by increasing breathlessness. COPD is a major cause of disability, and it is the third leading cause of death in the United States. In worldwide, about 65 million people have moderate to severe COPD, about 24 million people in the United States have COPD, as many as half are unaware that they have it. There is no cure for COPD, but treatment can help ease symptoms, lower the chance of complications, and generally improve quality of life. In this article we speak about of nursing care in COPD patients.

Material and Methods: This article is a review of the literature on treatment and caring in COPD patients.

Result: COPD requires lifelong disease management. Treatment and caring can ease symptoms, prevent complications, and generally slow disease progression. An effective COPD management plan includes four components: (1) assess and monitor disease; (2) reduce risk factors; (3) manage stable COPD; (4) manage exacerbations. The goals of effective COPD management are to prevent disease progression, relieve symptoms, improve exercise tolerance, improve health status, prevent and treat complications, prevent and treat exacerbations and reduce mortality. In selecting a treatment plan, the benefits and risks to the individual and the costs, direct and indirect, to the community must be considered. Patients should be identified before the end stage of the illness, when disability is substantial. Educating patients and physicians to recognize that cough, sputum production, and especially breathlessness are not trivial symptoms is an essential aspect of the public health care of this disease.

Conclusion: Although there is no cure for COPD, but treatments, caring and lifestyle changes can help patient feel better, stay more active, and slow the progress of the disease.

Keywords: Caring treatment, Nursing, COPD

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Invited Speaker

A-10-162-4

Respiratory Disease and Asthma in Childhood Related to Air Pollution in Pregnancy Period

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Objective: Health effects that ambient and traffic related air pollution has on pregnant women, their infants, and young children. Approximately 1,500,000 births occur every year in Iran. Thus, any effects air pollution has on human development in utero, as well as on infant and children's health, is of great concern to those who live in Iran specific in Tehran.The effect of environment is one of the most vulnerable life stages, during time between conception and birth. The fetus experiences rapid growth and his organ were developed. The maternal environment affects these processes. Evidence showed that environmental exposures can cause high risks of brain, respiratory, and digestive problems in early life beside prematurity (before 37 weeks of gestation), low weight (less than 2500 grams, or 5.5 pounds), or birth defects. The impact of environmental exposures on fetal development may be far-reaching, as data suggest

Material and Methods: Studies related to this subject were reviewed and summarized.

Results: Air pollution exposures in pregnancy and childhood period lead children to higher risk of childhood respiratory diseases. Compared to adults, children also have a larger lung surface area in relation to their body weight, and breathe 50% more air per kilogram of body weight. In addition, children spend more time outdoors doing activities (about 90% of their time indoors), therefore compared to adults, they are breathing more air pollution. “Animal studies have shown that air pollution because inflammation in respiratory systems and greater allergic reactions, and diesel particles can carry allergens into the body, resulting in a magnified allergic sensitivity and response”.

Conclusion: Currently, air pollution impacts on pregnant women and infants are not taken into consideration in setting environmental standards. Since the pregnant women and children are perhaps the most vulnerable to air pollution, taking these impacts into consideration would help strengthen air quality controls. To get rid of air pollution for achieving safety in pregnancy, infant, and children will likely require extreme changes to transportation systems, as well as industrial processes, all of these take many years or maybe decades

Keywords: pregnancy outcomes, air pollution, respiratory systems

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Invited Speaker

A-10-162-3

Effective Solutions for Sleep Disorders in Old patients with Asthma: A Brief Review

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Objective: Asthma, as major public health problem, develops in childhood or adolescence. It often remains undiagnosed in older adults and its mortality rate and hospitalization is higher in comparison to young adults. Older patients with asthma experience sleep disorders that result in poor quality of sleep. Because of increasing trend of old population and role of sleep in physical and psychological health, the aim of this study was to review the effective solutions for sleep disorders in old patients with asthma.

Material and Methods: In this descriptive review (2017), we searched in different data bases such as Medline, Science direct, Scopus, Google scholar, and Barakat Knowledge Network System to find related papers in both Persian and English in Jan. 2006 to Dec. 2016. Thus, we used keywords such as "Dyssomnias", "Aged" and "Asthma". Similarity to the review topic was considered as inclusion criteria.

Results: From retrieved papers, 11 papers were selected and reviewed in 2006-2016. Effective solutions in geriatric sleep disorders can be divided to two categories that include disease management by pharmacological interventions and non- pharmacological interventions for improving the sleep quality. Disease management include continuous positive airway pressure, using inhaled medications with instruction of effective inhalation technique, self- management education with patient active participation, improvement of adherence to therapy by improving knowledge and becoming aware of patients concerns and beliefs, smoking cessation and controlling and managing comorbidities. Non-pharmacological interventions include sleep hygiene, cognitive- behavior therapy, stress reduction techniques, acupuncture, herbal remedies, dark therapy, reflexology and footbath, back and pressure point massage and targeted music therapy.

Conclusion: Results of this study showed that pharmacological and non-pharmacological interventions were effective solution for sleep disorders of old patients with asthma.

Keywords: Dyssomnias, Aged, Asthma, review

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Invited Speaker

A-10-162-2

Children's Asthma Management and Guidelines

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Objective: Asthma affects an estimated 300 million individuals worldwide. It is the most common chronic disease in children in developed countries, affecting approximately 12 percent of children who are less than 18 years of age and more common in males under the age of 15 years (Sawicki, 2016). The aim of this article is overview of management and guidelines in children with Asthma.

Methods and Materials: Data gathered from review of literature, published guidelines and scientific webpages such as UpToDate, Medscape in relation to asthma management and guidelines.

Results: Asthma guidelines have been developed during the past 17 years to increase the awareness of asthma among health professionals, to improve asthma management, to evaluate published reports on asthma and to promote international collaboration in asthma research. The first international guidelines were formulated by the National Heart Lung and Blood Institute (NHLBI) in the USA in 1991 and this expert panel report was updated in 1997 and reviewed by Jahad in a meta-analysis and updated in 2003 and finally published in 2008 as an Expert Panel Report 3 (EPR-3). Currently there are four major guidelines which address the management of asthma in young children. The EPR3 of the National Asthma Education Programme (NAEPP), the PRACTALL Consensus Report published by the European Academy of Asthma and Allergy in 2008, an Evidence Based Approach compiled by the European Respiratory Society task force, published in the European Respiratory Journal in 2008 and most recently the Global Initiative (GINA) published new evidence based guidelines for the diagnosis and management of asthma in children 5 years and younger in 2009 (Potter, 2010). The current guidelines emphasize 4 important components of asthma care, including: Assessment and monitoring, Education, Control of environmental factors and comorbid conditions, and Pharmacologic treatment (Sharma, 2016). A Cochrane review of 32 studies of asthma self-management strategies for children found that interactive programs with written action plans slightly improved lung function, improved the feeling of self-control, and reduced school absences, restrictions on activities, and emergency-department visits (Jones, 2008).

Conclusion: It would be practical for countries to consider all the available guidelines and to adapt.

Keywords: Asthma, Management, Guideline, Children
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Invited Speaker

A-10-163-1

Using Orem's Self-care Model for Asthmatic Adolescents

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Objective: Asthma is a critical health problem among adolescents. Individuals during adolescence are capable of assuming responsibility for their own self-care physically and developmentally, but the increased peer pressure, independence, and risk-taking behaviors that characterize this period can inhibit self-care activities. Thus, adolescents with asthma may find it difficult to make the necessary adaptive changes in their lifestyles. Developing self-care skills related to the illness forms a basis for nursing related to the care of adolescents with asthma. In the present study, we used Orem's self-care model as the basis for educational and consulting services to enhance the development of self-care skills of adolescents with asthma.

Material and Methods: This two-group experimental design randomized subjects to experimental and control groups. Approximately 100 patients between the ages of 12 and 18 years observed in the Child Allergy and Asthma outpatient clinic. 80 patients were included in the study. Only patients diagnosed with asthma at least 1 year ago, who were using at least one long- term medicine and who had also been advised to carry their quick relief medicine with them, who had no chronic illness other than asthma, and who agreed, with parent approval, to participate in the study were included. Forty adolescents comprised each group (experimental and control).

Results: Own treatments had significantly increased, and the number of adolescents whose parents assumed responsibility for their treatment had significantly decreased compared with the first visit ($p < .05$). No significant change was detected in the control group ($p > .05$). The identified nursing diagnoses related to the self-care of the adolescents in the experimental group began to decrease significantly after the third visit and again after the sixth visit ($p > .05$).

Conclusion: The responsibility for treatment should be transferred from the parents to the child during adolescence, and parents should assist in this transfer.

Keywords: Orem's self-care model, Asthmatic adolescents
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Oral Presentation

A-10-154-1

Asthmatic Patients' Lifestyle in Traditional Medicine

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Objective: Public tendency to Traditional, Complementary and Alternative Medicine (TM, CAM) is on the rise, and the World Health Organization (WHO) also recommends paying attention to different fields of this medicine. Furthermore, this medicine may contain solutions for conventional medicine pitfalls. It is necessary for research centers to assay and update TM ideas to enter validated ones to current protocols. The first step in this way is finding out traditional medicine ideas. Elicitation of the best lifestyle for patients with asthma from viewpoint of Maimonides, TM physician who wrote a treatise about managing asthma

Material and Methods: The TM book "on asthma" by Maimonides was divided into three sections and distributed to three research fellows. They were physicians familiar with Iranian Traditional Medicine and they were very good in Arabic and English languages. They were asked to study the sections and then fill out a specific questionnaire, which was about prescriptions to improve asthmatic patient's life style. Afterwards, completed questionnaires were conceptually analyzed and TM lifestyle in patients with asthma was obtained.

Results: 25 questionnaires were about lifestyle principals in asthmatic patients, among theme, 16 were about nutrition and the rest were about other related lifestyle issues such as exercise, sleep, bathe, sexual activities, and massage. Sub-issues were: rules of eating and drinking, variety of useful meats, beneficial and detrimental fruits and vegetables and beneficial recipes, intensity of physical activities, duration and position of sleep, frequency of sexual activity, quality of bath water, frequency and duration of bathing in these patients.

Conclusion: In this study, we found many lifestyle modification options for asthmatic patients, mostly simple and practical. The next step is to design different studies to evaluate the effectiveness of these options.

Keywords: Asthma, Complementary and Alternative Medicine (CAM), Traditional Medicine (TM), Maimonides

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Oral Presentation

A-10-188-1

Evaluation of Parenting and Anxiety and Depression in Mothers of Children with Asthma

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Objective: Asthma is one of the most common chronic diseases in childhood. Parents have an important role in managing asthma in children. Studies have shown higher degree of depression and anxiety and lower family performance in mothers of asthmatic children in comparison with the control group. The aim of this study was to evaluate the parenting styles and also depression, anxiety and stress parameters in mothers of children with asthma.

Material and Methods: This descriptive cross sectional study was performed on 45 mothers (case group) of 3 to 15 years old children with asthma that their disease had been diagnosed by a pediatrician. The parenting styles, as well as depression and anxiety of mothers were evaluated by using parenting scales, and the depression-anxiety-stress scales (DASS). The mothers were also asked to fill the strengths and difficulties questionnaire (SDQ) for their children. Furthermore, parenting styles in case group were compared to mothers of children without asthma as control group.

Results: The results of this study showed that 21 mothers (74.6%) were normal, but 12 mothers (26.7%) had mild, 9 (20%) moderate and 3 (6.7%) severe degree of abnormality according to DASS. Independent T test showed a significant

difference between the case and control groups regarding depression in mothers and laxness (P<0.001), over reactivity (P<0.013) and verbosity (P<0.031) in children with asthma.

Conclusion: The results of this study demonstrated that anxiety and depression are partially frequent in mothers of children with asthma, and parenting styles are less affective in these families.

Keywords: Parenting styles, Depression, Anxiety, Stress, Asthma

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Oral Presentation

A-10-319-1

Prevalence of Aspirin Sensitivity in Patients with Moderate to Severe Asthma According to the Response to 3 Months Asthma Standard Therapy at Allergy and Clinical Immunology Department of Rasool Akram Hospital

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5. Ardebil University of Medical Sciences, Ardabil, Iran

Objective: According to most studies, aspirin sensitivity is associated with asthma severity and occasionally poor response to inhaled corticosteroids. The aim of this study was to assess the prevalence of aspirin sensitivity in patients with moderate to severe asthma according to three months standard treatment response.

Material and Methods: This randomized clinical trial is done on 18 to 65 years old patients with moderate to severe asthma who referred to the Department of Allergy and Clinical Immunology, Rasool Akram Hospital, since February 2015 to February 2016. To evaluate the patient's response to 3 months asthma standard therapy, prebronchodilator FEV1 values and Asthma Control Test (ACT) scores

were assessed before and after the treatment. At the end, patients underwent the oral aspirin challenge test.

Results: 65 patients were eligible for the oral aspirin challenge test. The average age of participants was 40.86 ± 11.53 years. 19 males (29.23%) and 46 females (70.77%) were participated. 27 (41.5%) patients were diagnosed with moderate asthma and 38(58.5%) with severe asthma. History reactions to aspirin or NSAID were positive in 18 (27.7%) subjects. The prevalence of aspirin sensitivity was 35.38% based on oral aspirin challenge test. Aspirin sensitivity was more prevalent in patients with moderate asthma (60.9%). Past history of reaction to aspirin or NSAID was significantly associated with positive aspirin challenge test. There were no statistical significant differences between aspirin sensitive and aspirin tolerant asthma in mean prebronchodilator FEV1 values and ACT scores before and after the treatment.

Conclusion: According to this study aspirin sensitivity was not associated with poor response to standard treatment in patients with moderate or severe asthma.

Keywords: Aspirin sensitivity, Moderate to severe asthma, Prebronchodilator FEV1, ACT scores, Standard treatment

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Oral Presentation

A-10-294-1

Frequency of Asthmas Signs and Symptoms in Hospitalized Infants with Severe Bronchiolitis in Hamedan Besat Hospital in 2010 after 6 Years

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Objective: One of the risk factors of asthma is brontiolitis in infants in many study's research about this relation. Parents have anxiety about brontiolitis changes to preschool asthma. This survey was done in Hamedan with the aim of determining the frequency of asthma in child with severe brontiolitis 6 years ago.

Material and Methods: In a cohort study involving 121 children who admitted in Besat hospital in Hamedan with severe brontiolitis. For following up were surveyed that 3 children dead in thid time and 18 persons do not answer us, and

100 cases in rural-urban hygiene center for control in article used. Cases and controls were matched in sex, age, and place. To collect data, it was used one questionnaire. Data were analyzed with SPSS 16 software and it was used descriptive statistics for presenting results.

Results: In this study, frequency of signs and symptoms of asthma in cases was more than normal children. Chronic dyspnea (18%) was more than chronic wheezing (8%) and chronic coughing was 14%. In controls chronic dyspnea was 9%, chronic wheezing was 6% and chronic coughing was 10%. P.value in all of them was <0.05. Frequency total asthma signs and symptoms in cases is 25% but in controls is 15% and p.value is 0/15.In cases about chronic coughing; in familial asthma, familial and personal allergic disease and familial substance history and in controls in familial substance history p.value was <0.05.in cases about chronic dyspnea in familial asthma, personal allergic history and familial substance history and in controls in familial asthma history; p.value was <0.05.in cases about chronic wheezing in familial asthma history and in controls about familial substance history; p.value was <0.05.

Conclusion: Considering results of this study the frequency of signs and symptoms of asthma in children with severe brontiolitis in infant is more than others but p.value is not significant but p.value in other risk factors of asthma is significant; in this instances: in cases children have positive familial asthma and allergic disease and familial substance history; chronic dyspnea and coughing more than others. Chronic wheezing is related to asthma familial history only.in controls chronic dyspnea is related to asthma familial history and chronic wheezing and coughing is related to familial substance history.

Keywords: Asthma, Brontiolitis, Questionnaire

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Oral Presentation

A-10-236-1

Comparing the Effect of Home Care Nursing and Health Promotion Model on Quality of Life, Sleep Quality and Life style of Patients with Asthma: A Randomized Clinical Trial

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Objective: Asthma is a chronic disease affecting patients' quality of life, sleep quality and lifestyle. One way to improve the health status of patients is using nursing care model. This research aimed to compare the effect of home nursing care and Health Promotion Model on quality of life, sleep quality and lifestyle of patients with asthma.
Material and Methods: The clinical trial was done on patients suffering from asthma in 2016 in Ilam, Iran. Patients were randomly divided into three groups: A (n = 40), B (n = 40) and control (n = 40) groups. Five appointments were done at home by public health nurse in the patient's home for group A. Health Promotion Model was done in 5 group-training sessions in hospital for group B, and usual care was performed for control group. Then, after 1, 2, 3 and 6 months after intervention, quality of life, quality of sleep and lifestyle questionnaires were completed. SPSS 21 was used for data analysis.
Results: Results showed that no significant difference was observed between quality of life, sleep quality and lifestyle of patients with asthma before intervention (p> 0.05). After the intervention, quality of life, quality of sleep and lifestyle of patients in group A and B had significantly increased, but this increase was significant in group A (home nursing) compared to group B (Health Promotion Model).
Conclusion: Home visits by public health nurses are recommended due to the effectiveness of home nursing rather than health promotion model to improve patients' health status.

Keywords: Home nursing, Health promotion model, Asthma, Quality of life, Sleep quality, Lifestyle
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Oral Presentation
A-10-223-1

Synbiotic May Reduce Common Cold in Asthmatic Children: A Randomized Controlled Trial

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Objective: Acute exacerbations impose considerable morbidity, mortality, and increased cost. Viral respiratory infections are the most common cause (80-85%) of pediatric asthma exacerbations and admissions to the hospital. The aim of this study was to determine the effect of a new synbiotic Lactocare® on viral respiratory infections and asthma exacerbations in asthmatic children.

Material and Methods: In this double blind controlled clinical trial, 72 children with mild persistent asthma, aged between 6 and 12 years, were randomized to receive either Lactocare®, a Synbiotic containing 1 billion CFU/Capsule of Lactobacillus casei, Lactobacillus rhamnosus, Streptococcus thermophilus, Bifidobacterium breve, Lactobacillus acidophilus, Bifidobacterium infantis, Lactobacillus bulgaricus, and Fructooligosacharide (Zist Takhmir, Tehran, Iran) or placebo daily for 60 days. The primary outcome was the number of viral respiratory infections, and secondary outcomes were school absence, salbutamol and prednisolone usage, outpatient visits, and hospital admission for asthma. The outcomes were compared among study groups using the SPSS 11.5 program and the Mann Whitney and Fisher exact tests.

Results: Of the 72 children who were enrolled with mild persistent asthma, 36 were assigned randomly to be treated with synbiotic and 36 with placebo. The number of viral respiratory infections was significantly higher in placebo group than the synbiotic group during the first month of intervention (0.74 ± 0.12 vs. 0.44 ± 0.1, $p < 0.007$) but not during the second month (0.5 ± 0.8 vs. 0.5 ± 0.8, $p < 0.641$). Considering the total duration of the study (two months), infection episodes also were significantly lower in the synbiotic group (0.92 ± 0.15 vs. 0.69 ± 0.11, $p < 0.046$). Salbutamol consumption was significantly lower in the synbiotic group, but there were no significant differences in school absenteeism, oral prednisolone use, outpatient visits, or hospital admissions.

Conclusion: This new symbiotic, a mixture of seven probiotic strains plus fructooligosacharide may reduce episodes of viral infection in asthmatic children.

Keywords: Asthma, Children, Synbiotic, Viral infection, Asthma exacerbation
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Oral Presentation

A-10-160-1

To Determine the Educational Needs of Parents of Children with Asthma Admitted to the Pediatric Ward of Amir Hospital Ganaveh

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Objective: Asthma is the most common chronic childhood disease, the leading cause of absenteeism from school and the third leading cause of hospitalization of children in the hospital. The aim of this study was to determine the educational needs of parents of children with asthma.

Material and Methods: This study was a cross-sectional study, study population consisted of 30 parents of children with asthma admitted to the pediatric ward of Amir Hospital who were randomly selected Bandar Ganaveh. Data were collected by questionnaire validity and reliability ill in May researcher in two parts: demographic information and questions to assess parents' knowledge in 6 areas: Understanding the nature of asthma, identifying triggers and banishing them asthmatic children, how physical activity and sport, environment, principles of prevention, how to refer children to medical centers in three areas of good, fair and poor were investigated. The collected data were analyzed with descriptive statistics and application SPSS16.

Results: In the area of parental awareness: Understanding the nature of asthma 52/60% poor, children with asthma is identifying triggers and banishing them 65% poor, 80% poor activity and exercise, environment 20/80% poor, the principles of prevention 90 %, how to refer children to medical centers 50% was poor.

Conclusion: According to the study findings need careful planning in order to increase awareness by parents of children with asthma is of great importance.

Keywords: Asthma, Education, Parents, Children
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Oral Presentation

A-10-305-1

Exercise-induced Vocal Cord Dysfunction Mimicing Exercise-induced Asthma in Children

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Objective: Exercise can provoke asthma symptoms, such as dyspnea, in children with exercise-induced asthma (EIA).However, exercise-induced vocal cord dysfunction (VCD) may also cause wheezing, chest tightness, shortness of breath and cough associated with exercise, mimicing asthma. Therefore, both of these conditions may occur in association with physical exertion. The misdiagnosis of vocal cord dysfunction as exercise-induced asthma often leads to inappropriate treatment such as high-dose corticosteroids.

Material and Methods: 12 children aged 6-12 years with exertional dyspnea, cough, shortness of breath and chest tightness, unresponsive to therapy for EIA was included in this study. Skin prick test(SPT) and pulmonary function test (PFT) were performed for each patient after a detailed individual and family history for allergy and the patients were referred to an otolaryngologist for fiberoptic rhinolaryngoscopy.

Results: 4 (33%) of these children (3 female and 1 male) revealed some degrees of paradoxical vocal cord motion in laryngoscopy when they were symptomatic. SPT and PFT were unremarkable. None of the patients had an individual or family history of allergy.

Conclusion: The diagnosis of VCD is more common than appreciated but is frequently not considered. However, appropriate diagnosis prevents children from undergoing unnecessary and potential harmful therapies. The diagnosis requires fiberoptic endoscopic demonstration of abnormal cord activity.

Keywords: Vocal cord dysfunction, Exercise-induced, Asthma

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Oral Presentation

A-10-159-2

Effect of Nursing Education on How to Properly Use Salbutamol to Prevent its Complications in Patients with Asthma

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Objective: Asthma is a chronic airway disease that causes hypersensitivity of the airways, mucosal edema and mucus production that has significant incidence and prevalence. Salbutamol is the most effective treatment for acute asthma attacks and self-control related to medicine, the knowledge of how to use the drug salbutamol in this category of patients is the most important care measures. The aim of this study was to evaluate the effect of the correct way to use Salbutamol and prevention of complications in patients with asthma

Material and Methods: In this study, a thorough search based on any of the key words education, self-care, complications, salbutamol, called in Persian sources (Yahoo, Google, iranmedex, irandoc, sid, hib) as well as various scientific literature and library related to the subject from 2007 to 2016 a total of 80 articles were titled and research purposes was between 40 related articles.

Results: The study shows that the level of awareness (98%) of cases about the use of salbutamol was moderate (71.2%) had moderate awareness of the effects of salbutamol (28.1%) have a poor knowledge and were generally (87.7%) patients had moderate and others had poor knowledge about the application of salbutamol and its complications. (81.3%) of patients in the salbutamol and skill and good performance (18%) had moderate performance. Including nursing education these cases can be noted: 1. (40%) avoid aerosol spray chance of developing eye causes blurred vision.2-in (20%) due to long-term use in case of tremor in the hands of your doctor know. 3-in (40%) of smoking, alcohol, caffeinated substances to avoid.

Conclusion: Studies show that self-care education in these patients reduces the side effects of salbutamol and therefore to apply the training of nurses with patients can walk to promote health.

Keywords: Education, Self-care, Complications of salbutamol, Asthma
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Oral Presentation

A-10-81-1

Investigate the Relationship between Anxiety and Sleep Quality in Patients with Asthma

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Objective: Asthma is one of the most common disorders of the Respiratory system. Chronic physical illnesses have a high risk of mood or anxiety disorders .As well as the quality of sleep is very important for these patients .Therefore, the aim of this study was to investigate the relationship between anxiety and sleep quality in patients with asthma.

Material and Methods: The study of analytical descriptive type which is on 115 patients with asthma, admitted to the hospital khatam-ol anbiya shoushtar in the year 1394. The overall number of sampling had to be for a month .Data collected by questionnaire of Pittsburgh sleep quality and Beck Anxiety Were collected .The inclusion criteria for asthma patients, personal satisfaction, and complete filling of the questionnaire. Data analysis with SPSS-20 software by descriptive test (frequency distribution, mean and standard deviation) and Chi-square test was used to analyze the data.

Results: The findings showed that the average age of the patients was 56.77 ± 9.87.and 59.5% male and 40.5% were female. 29/7% of patients were taking hypnotic and sedative drugs. 18/9% of patients with severe anxiety and 20/3% had moderate anxiety. Also 73% of patients had a bad sleep quality and 27% had a good sleep quality. The findings of Chi-square test shows that there is a significant relationship between anxiety and sleep quality (P=0.01)

Conclusion: According to the findings of this research, there is a significant relationship between anxiety and sleep quality. Therefore it is concluded that there is an essential need to find out the psychological signs of the patients with respiratory disorders, prevention and treat them completely. It is recommended that care providers consider relevant factors in anxiety and endeavors to reduce its impact on sleep quality.

Keywords: Asthma, Sleep quality, Anxiety

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Poster Presentation

A-10-375-1

A New Report of Iranian Asthma Registry

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Objective: To collect the data of childhood asthma in the registry using a comprehensive questionnaire

Material and Methods: Patients were referred to Immunology, Asthma and Allergy Research Institute (IAARI) from 2008 to 2016. After an inclusive visit, their data were gathered and registered.

Results: A total of 641 children aged above 6 years old (group I) and 214 participants aged less than 5 years old (group II) were registered from which 436 (68%) and 135 (63.1%) patients were male. Statistical analysis revealed that 63.3% and 60.3% of children in group I and II did not attend kindergarten. Most of the children were delivered by cesarean section (62.2% and 67.3% in group I and II, respectively). Our results revealed that 164 (25.6%) patients in group I and 31 (14.5%) children in group II had a history of hospitalization due to asthma attack. Influenza vaccination was performed in 307 (47.9%) and 83 (38.8%) of children in group I and II, respectively. Asthma was incompletely controlled in 252 (39.3%) patients in group I; while 101 (47.2%) children suffered from incomplete asthma control. The relationship between asthma control and influenza vaccination was statistically significant in both groups (p=0.02 and p=0.001, respectively). According to our statistical analysis, 137 (21.4%) and 33 (15.4%) of patients in group I and II were passive smokers.

Conclusion: The findings of this study highlight the critical need for developing an effective intervention program working in harmony to control and reduce the burden of childhood asthma.

Keywords: Asthma, Registry, Prevalence

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Poster Presentation

A-10-88-1

The Effect of Inhaled Corticosteroids after OVA Exposure on Breathing Pattern Complexity as Well as Airway Remodeling and Inflammation in Animal Models of Asthma

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Objective: Allergic asthma is a heterogeneous disorder of the conducting airways involving chronic airway inflammation, declining airway function and tissue remodeling. Inhaled corticosteroids (ICS), through their anti-inflammatory effects have been the mainstay of treatment of asthma for many years. This study was designed to assess the effect of ICS after OVA exposure on AHR, inflammation, airway remodeling and breathing pattern in animal model of allergic airways disease.

Material and Methods: Male Dunkin-Hartley guinea-pigs, weighting 300±50 g, were divided into two groups receiving twelve inhalations of aerosols for 15 min, every 3 d from Day 0 to Day 36. Twelve h after the last aerosol exposure, the animals receiving five inhalations of fluticasone propionate every 12 h for 10 min. Then, 24 h after last inhalations of fluticasone propionate, Animals were anesthetized with urethane and AHR procedures were performed for both groups and then removed lungs were fixed in formalin solution, embedded in paraffin and cut into 5-µm-thick sections. The lung sections were stained with hematoxylin and eosin (H&E) to identify the lung inflammatory cell infiltration, Masson trichrome to determine subepithelial collagen deposition and periodic acid Schiff (PAS) to detect mucus producing goblet cells. The respiration of conscious guinea pigs was recorded on day 0 (before Ovalbumin inhalation) and day 40, using a whole-body plethysmography. Twenty minutes of data with minimum artifact was selected for inter-breath intervals analysis using custom written software in MATLAB. Complexity of breathing pattern was quantified by calculating sample entropy that determines the irregularity degree of a time-series.

Results: FP treatment following OVA challenge did not inhibit airway pressure enhancement that was observed immediately after OVA challenge, also the complexity of breathing pattern had not changed in fluticasone-treated group compared to the control group. But inflammation in BALF samples and stained H&E had decreased compared to the control group. Also airway remodeling in the group receiving fluticasone had decreased compared to the control group.

Conclusion: This study showed that despite the airway inflammation decrement after treatment with fluticasone, the complexity of breathing pattern and AHR had not a significant change compare to asthmatic group.

Keywords: Asthma, Breathing pattern, Inflammation, Inhaled corticosteroids
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Poster Presentation
A-10-195-4

The Need to Educate, Knowledge and Attitudes about Asthma for Quality of Life

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Objective: Bronchial asthma is a chronic disease that affects a high percentage of young people (adolescents), with a significant restriction of daily activities. There is relationship between life style and asthma disease in society people. Knowledge and attitudes toward asthma can condition the integration of people with asthma and affect their quality of life, were assessed, with a view to improving knowledge about the asthmatic people. The aim this study, our objective was to determine the state of knowledge, attitudes on asthma in society people and its relationship to quality of life of pupils with asthma, as an early step to an educational intervention.
Material and Methods: Descriptive and cross-sectional study of aged 19 and 28 years old in non- medical students Universities' Kermanshah province of Iran and Knowledge about Asthma was evaluated 100 students in grades BSc, MSc, DVM and PhD were included. We used, study tools of the asthma knowledge questionnaire, Quality of Life and x2 & one-way ANOVA tests and P value<0.05 were applied for statistical analysis.
Results: We studied on 100 people (grades BSc, MSc, DVM & PhD students) showed, all had little knowledge about asthma. The quality of life in asthma was mild to moderately affected and lower in female 41% than in male 49.4. We found

no relationship between knowledge, attitudes and quality of life in asthma. (P<0.05)

Conclusion: We found a low level of knowledge about asthma in non- medical students Universities' Kermanshah. Asthma sufferers have a mild to moderate asthma quality of life, Female students had less knowledge about asthma. There was also no association with attitudes to asthma in all groups, or with the quality of life of asthma sufferers. However Theoretical material in the form of a booklet can be used in a schools and universities-based asthma education program in order to improve the knowledge of about asthma.

Keywords: Educate, Knowledge, Asthma, Quality of Life

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Poster Presentation

A-10-133-2

Predicting 3D Structure of the Neuropeptide S Receptor: A Candidate for Asthma Treatment

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Objective: The aim of this study is to determine the 3D structure of the neuropeptide S receptor (NPSR) protein through homology modeling. This receptor is a member of the GPCRs (G-protein coupled receptors) superfamily of integral membrane proteins. Mutations in this protein's gene associate with asthma disease. Homology modeling is a process which constructs an atomic resolution of a protein with no determined three dimensional structure (the target) from its amino acid sequence and an experimentally determined 3D structure of a related homologous protein (the template).

Material and Methods: The amino acid sequence of NPSR was obtained from the uniprot database (http://www.uniprot.org) (accession no. Q6W5P4). The BLAST (basic local alignment search tool) software was used to find the homologous protein structures as the template for protein modeling of NPSR. The Clustal Omega program with default parameters was used for multiple sequence alignment of the template sequences and the NPSR sequence. Homology modeling of NPSR was performed by using MODELLER 9.17 program. One hundred models were built and the best model was chosen based upon DOPE (Discrete Optimized Protein Energy) score. This model was therefore used for

model analysis and validation in order to survey the reliability of the predicted model.

Results: Based on the blast results, proteins with PDB ID 2VT4, 2Y00, 5A8E, 4S0V, 4BVN and 4XEE were selected as template for multiple template homology modeling. As shown in Figure 1, the best model NPSR with DOPE score -38531.87 was selected for further analysis.

Conclusion: This study serves as the first work providing an acceptable approximation of the structure of the NPSR protein, resulting in the creation of a theoretical model of the 3D structure of NPSR using computational techniques and homology modeling for in silico studies about asthma candidates.

Keywords: Homology Modeling, Asthma, Modeller, BLAST

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Poster Presentation

A-10-212-1

Role of Somatic Antigens of *Marshallagia Marshali* on TLR4 Expression in Splenocytes of Asthmatic Mice

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Objective: Epidemiological studies suggest an inverse relationship between helminth infections and allergic disease. Innate immunity especially antigen presenting cells (APC) have key role for initiation of allergic responses. Numerous investigations revealed the key role of pattern recognition receptors (PRR) on APCs to balance or imbalance of immune responses. TLR4 is the most important PRR that plays important role during asthma; on the other hand, several studies have shown that helminth parasites are masterful modulators of TLRs. This study was undertaken to evaluate the effect of somatic antigens of *Marshallagia marshalli* on the expression of TLR4 in spleen of asthmatic mice.

Material and Methods: Allergic airway inflammation was induced in BALB/c mice by sensitization with ovalbumin. The effect of M.marshali somatic antigens on the development of asthma was evaluated by lung histology. When mice were

sensitized with ovalbumin together with the somatic antigens, cellular infiltration into the lung was dramatically reduced in comparison with the ovalbumin-treated group.

Results: Results of quantitative real time PCR showed somatic products of M.marshali decreased expression of TLR4 mRNA in asthmatic mice.

Conclusion: This study provides new insights into immune modulation through TLR4 by the M.marshali somatic products, which attenuated airway inflammation in mice.

Keywords: Asthmatic mice, *Marshallagia marshali*. Somatic antigen, TLR4

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Poster Presentation

A-10-456-1

Single Nucleotide Polymorphisms in Asthma Candidate Genes TBXA2R, ADAM33 FCER1B and ORMDL3 in Pakistani Asthmatics a Case Control Study

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Objective: Asthma is a chronic disease of the airways. Many biological pathways and genes in those pathways have been implicated in asthma pathogenesis. It is caused by interaction of multiple genes, some of which have a protective effect and others contribute to the pathogenesis of the disease, with each gene having its own tendency to be influenced by the environment. The present study was conducted to determine association of 16 SNPs in 10 candidate genes with asthma in Pakistani population in 333 asthmatic cases and 220 healthy controls. This is the first study to report associations between SNPs in candidate genes and asthma in Pakistani population.

Material and Methods: Genomic DNA was extracted from whole blood. Genotyping was performed using the Sequenom Mass ARRAY iPLEX platform (14 SNPs) and TaqMan assay (2 SNPs). All tests were in Hardy-Weinberg equilibrium (HWE). Multiple logistic regressions were used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for each SNP.

Results: The minor allele at two of the SNPs showed association with protection from asthma, rs1131882 in TBXA2R gene (OR 0.73, 95% CI 0.52–1.01, P = 0.05) and rs2280091 in the ADAM33 gene (OR 0.69, 95% CI 0.50–0.97, P = 0.03). For FCER1B gene, rs2583476 the asthmatic male gender had higher TT genotype counts as compared to controls (OR=1.86, 95% CI=1.09-3.17, p=0.01). In rs11650680 of ORMDL3 gene the CT genotype is more prevalent in female asthma cases in comparison with female controls (OR=1.99, 95% CI=1.02-3.89, p=0.03).
Conclusion: This data suggests that variations at TBXA2R and ADAM33 genes are found to be associated with asthma susceptibility in Pakistan. FCER1B gene is associated with male and ORMDL3 in female asthmatics. These genetic markers can be important source of asthma risk in Pakistani population.

Keywords: Asthma, Genetic polymorphisms, Pakistan
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Poster Presentation
A-10-133-3

Homology Modeling of the Toll-like Receptor 7: New Insight into Asthma Treatment

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Objective: The aim of the present study was to specify the 3D structure of the toll-like receptor 7 (TLR7) protein through homology modeling. It is a member of the toll-like receptor superfamily and a single-stranded viral RNA receptor that is expressed in the airways and has a considerable interest as a therapeutic target in asthma. Homology modeling is a process, which creates a protein with no identified 3D structure (the target) from its amino acid sequence and an experimentally determined 3D structure of a related homologous protein (the template).
Material and Methods: The amino acid sequence of TLR7 was obtained from the uniprot database (http://www.uniprot.org) (accession no. Q9NYK1). The BLAST (basic local alignment search tool) software was recruited to find the homologous protein structures as the template for protein modeling of TLR7. The multiple sequence alignment of the template sequences and the TLR7 sequence was done using the Clustal Omega program. Homology modeling of TLR7 was implemented using MODELLER 9.17 program. One hundred models were constructed and the

best model was chosen based upon DOPE (Discrete Optimized Protein Energy) score. This model was therefore used for further analysis.

Results: According to the blast results, proteins with PDB ID 3W3G, 3WPB, 5GMF and 5HDH were selected as template for multiple template homology modeling. As illustrated in Figure 1, the best modeled TLR7 with DOPE score - 109781.10 was selected for further analysis.

Conclusion: This study serves as the first work providing an acceptable approximation of the structure of the TLR7 protein, resulting in the construction of a theoretical model of the 3D structure of TLR7 using computational techniques and homology modeling for in silico studies about asthma candidates.

Keywords: Homology Modeling, Asthma, Modeller, BLAST

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Poster Presentation

A-10-444-1

Improvement of Total and Differential WBC and Serum Oxidant, Antioxidant Biomarkers in Rat Model of Asthma by the Extract of Curcuma longa Rhizome and its Constituent, Curcumin

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Objective: The effects of *Curcuma longa* (*C. longa*) and curcumin on total and differential WBC count and oxidant, antioxidant biomarkers, in rat model of asthma were evaluated.

Material and Methods: Total and differential WBC count in the blood, NO2, NO3, MDA, SOD, CAT and thiol levels in serum were examined in control, asthma (A), A treated with *C. longa* (0.75, 1.50, and 3.00 mg/mL), curcumin (0.15, 0.30, and 0.60 mg/ml), and dexamethasone (1.25 µg/ml) rats.

Results: Total and most differential WBC count, NO2, NO3 and MDA were increased but lymphocytes, SOD, CAT and thiol were decreased in asthmatic animals compared to controls ($p<0.001$). Total WBC, NO2 and NO3 were

significantly reduced in treated groups with dexamethasone and all concentrations of C. longa and curcumin compared to asthmatic group ($p<0.001$ for all cases). MDA was significantly decreased, but SOD, CAT and thiol increased in treated animals with dexamethasone and two higher concentrations of C. longa and curcumin ($p<0.01$ to $p<0.001$). There were significant improvement in eosinophil percentage due to treatment of highest concentration of the extract and curcumin, neutrophil and monocyte due to highest concentration of curcumin and lymphocyte due to highest concentration of the extract and two higher concentrations of curcumin compared to asthmatic group ($p<0.01$ to $p<0.001$). Dexamethasone treatment improved monocyte ($p<0.001$) and lymphocyte ($p<0.01$) percentages.

Conclusion: Antioxidant and anti-inflammatory effects of C. longa extract and its constituent curcumin in animal model of asthma was observed which suggest a therapeutic potential for the plant and its constituent on asthma.

Keywords: *Curcuma longa*, Curcumin, Rat model of asthma, Oxidative stress, WBC, Inflammation

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Poster Presentation

A-10-452-1

The Effect of Onion (*Allium cepa*) Extract on Serum Oxidant, Antioxidant Biomarkers in Rat Model of Asthma

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Objective: The effects of onion (*Allium cepa*) on oxidant, antioxidant biomarkers, in rat model of asthma were evaluated.

Material and Methods: The serum levels of oxidant, antioxidant biomarkers including NO2, NO3, MDA, SOD, CAT and thiol were examined in control, asthma (A), A treated with onion (700, 350, and 175µg/mL), and dexamethasone (1.25 µg/ml) rats.

Results: The serum level of NO2, NO3 and MDA were increased but SOD, CAT and thiol were decreased in asthmatic animals compared to controls ($p<0.001$ for all cases). The levels of NO2 and NO3 were significantly reduced in treated groups with dexamethasone and all concentrations of onion compared to asthmatic

group (p<0.001 for all cases). MDA was significantly decreased, but SOD, CAT and thiol increased in treated animals with dexamethasone and two higher concentrations of onion (p<0.01 to p<0.001).

Conclusion: The results showed antioxidant effects of onion (*Allium cepa*) extract in animal model of asthma comparable to the effect of dexamethasone which suggest a therapeutic potential for the plant on asthma.

Keywords: Onion (Allium cepa), Rat model of asthma, Oxidative biomarkers, Oxidant biomarkers

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Poster Presentation

A-10-379-1

Conjugated Alpha-Alumina Nanoparticle with Vasoactive Intestinal as a Nano-drug in Treatment of Allergic Asthma in Mice Peptide

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Objective: Asthma is a chronic respiratory disease characterized by airway inflammation, bronchoconstriction, airway hyperresponsiveness and recurring attacks of impaired breathing. Vasoactive intestinal peptide (VIP) has been proposed as a novel anti-asthma drug due to its effects on airway smooth muscle relaxation, bronchodilation and vasodilation along with its immunomodulatory and anti-inflammatory properties.

Material and Methods: In the current study, we investigated the therapeutic effects of VIP when conjugated with α-alumina nanoparticle (α-AN) to prevent enzymatic degradation of VIP in the respiratory tract. VIP was conjugated with α-AN. Balb/c mice were sensitized and challenges with ovalbumin (OVA) or PBS and were divided in four groups; VIP-treated, α-ANtreated, α-AN-VIP-treated and beclomethasone-treated as a positive control group. Specific and total IgE level, airway hyperresponsiveness (AHR), bronchial cytokine expression, and lung histology were measured.

Results: α-ANVIP significantly reduced the number of eosinophil (Eos), serum IgE level, Th2 cytokines and AHR. These effects of α-AN-VIP were more pronounced than that seen with beclomethasone or VIP alone (P<0.05).
Conclusion: The current data indicate that α-AN-VIP can be considered as an effective nano-drug for the treatment of asthma.

Keywords: Alpha-Alumina nanoparticle, Vasoactive intestinal peptide, Allergic asthma
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Poster Presentation
A-10-451-1

Effect of Carvacrol on T Helper Cells Subtypes in Sensitized Mice

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Objective: Carvacrol, the main constituent of *Zataria multiflora*, showed various pharmacological effects including anti-inflammatory property. The present study aimed to determine the effects of carvacrol on Th1, Th2, Th17 and Tregulatory subpopulations in sensitized mice.
Material and Methods: Control, sensitized (S, by ovalbumin injection and inhalation), S treated with dexamethasone (0.1mM), and carvacrol (75, 150 and 300 mg/kg) groups of mice were studied. Spleen cells were extracted and Th1, Th2, Th17 and Treg cells were evaluated by flow cytometry.
Results: Th2 and Th17 were significantly increased but Th1 and Th1/Th2 ratio were reduced in S group (*p<0.001* for all cases). Carvacrol treatment caused significant and dose dependent reduction in Th2 and Th17 cells but increase in Treg cells and Th1/Th2 ratio (*p<0.001* for all cases). Th1, Th2 and Th17 were significantly decreased but only Treg was increased in dexamethasone treatment (*p<0.001* for all cases).
Conclusion: Carvacrol treatment during sensitization period showed more specific therapeutic impact on Th1/Th2 imbalance in inflammatory disorders such as asthma than dexamethasone.

Keywords: Carvacrol, Asthma, Animal model, Flow cytometry
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Poster Presentation

A-10-102-1

Investigation of FcRL3 Gene Polymorphism (rs7528684) with Susceptibility to Allergic Asthma

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Objective: Fc receptor - like (FCRL) 3 is a transmembrane molecule that has putative roles in B-cell biology, and could be involved in antibody-mediated immune disorders including allergy and asthma, and also in B-cell malignancies. We aimed to investigate the possible association of rs7528684 SNP (-169C/T or FCRL3_3) in FCRL3 gen with predisposition to allergic asthma in Azeri population of Iran.
Material and Methods: Frequency of genotypes and alleles of rs7528684 SNP in FCRL3 gene was determined using TaqMan genotyping method in 191 asthmatic patients and 186 healthy controls.
Results: The most frequent genotype in patients and control groups were CT (n=81¸ 42.4%) and TT (n=76, 40.9%) respectively. Statistical analysis showed no significant difference in genotype frequency (p=0.81) and also in frequency of C and T alleles (p=0.52) between two groups.
Conclusion: Our results revealed no association between rs7528684 SNP with susceptibility to allergic asthma in Azeri population of Iran.

Keywords: Asthma, FCRL3, SNP, rs7528684
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Poster Presentation

A-10-154-2

Did Ancient Iranian Physicians Know Asthma?

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Objective: Since people tendency to Complementary and Alternative Medicine is significantly increasing and many of them are consumers of the methods of such medicines, so it is necessary for medical researchers to evaluate these methods and address people to safe and effective ones. According to "WHO Traditional Medicine Strategy", most efforts must be employed for diseases with much load, in which current treatments are not completely sufficient or impose significant side effects. Therefore, asthma is a proper disease to search for in traditional or complementary medicines. The objective was finding out clues about asthma in Iranian Traditional Medicine (ITM) textbooks.

Material and Methods: Main ITM textbooks such as Al-Qanun fit-tib [The Canon of Medicine], Zakhire Kharazmshahi, Kholasat Al- Hekmah, Eksire Azam and Tebbe Akbari were included. The chapter of respiratory diseases was studied and description of every disease was punctually reviewed. Then diseases with most similarity to asthma were extracted. Finally, asthma was evaluated with diagnostic algorithm for osr-ol-nafas and zigh-ol-nafas, both mean dyspnea in ITM.

Results: Among respiratory diseases mentioned in main ITM textbooks, four including zigh-ol-nafas, entesab-ol-nafas, rabv, and bohr were the most similar diseases to asthma. We tried to characterize these diseases according to ITM and then compare them with asthma.

Conclusion: However, asthma is close to these four diseases in ITM, but attribution of Asthma to exclusively one of theme is not accurate and does not result in practical outcomes, while diagnostic and therapeutic approaches in all four diseases are the same. If asthmatic patients are evaluated on the basis of ITM relevant algorithm, they will categorized in many subgroups such as 1)moist, dry or cold temperament of lungs, 2) complex temperament of lungs such as cold and moist temperaments simultaneously, 3)secondary to other organs disorders such as heart or gastric disorders. Therefore, there are many causes for asthma and many treatments are suggested for every patient in ITM.

Keywords: Asthma, Iranian Traditional Medicine, Traditional Medicine, Complementary and Alternative Medicine, CAM

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Poster Presentation

A-10-395-2

Atomic Force Microscopy Images of Comparative of Nanoscale Characterization of Airborne Ash (*Fraxinus excelsiorL.*) Pollen Grains in Pollutants and Non-pollutant Area

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Objective: In recently air pollution is motivated by many agents and in the aerosol we can distinguish smallest airways, composed by biological particles, such as pollen grains and particulate of anthropogenic origin. During the last decade the size, shape, composition, sources and effect of these particle matters (PM) on human health have been studied by microscopic methods. Atomic force microscopy (AFM) is therefore a valuable complementary microscopy technique for the comparative study of the pollen grains surface morphology. The main goals of this research we investigated to characterize the elemental differences in the composition of the airborne ash pollen exine wall and to describe the particulate matter found adhered to this pollen in the Tehran, capital city of Iran, using an Energy Dispersive X-Ray analysis (EDX) on the SEM and Atomic force microscopy (AFM).

Material and Methods: The first stage, pollen grains were collected in pollutant area (Tehran regions) and nonpollutant area (Parand city near the Tehran).Then used SEM/EDX for pollen grains analysis and advantages of two samples for AFM for the imaging of reside in the sticky PM on the ash pollen surface of the high spatial resolution, compared with SEM images, and the unique three-dimensional rendition of the exine surface topography, which avoids cross sectioning of the samples.

Results: Images showed of exine units from the tectum of polluted and non-polluted pollen were done by AFM. These units of polluted sample showed were

recorded adhered the PM in exine surface as being 250 to 300nm wide. This particle matter size is lower than $PM_{2.5}$. We have obtained atomically resolved images on single aerosol particles in Tehran at the first on environmental biological samples.

Conclusion: Our results showed AFM images method can be used for identifying pollen surface contamination and evaluation of PM size more exact and showed good agreement with light and electron microscopy micrographs.

Keywords: Pollen grains, Exine, Atomic Force Microscopy, Fraxinus excelsiorL.

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Poster Presentation

A-10-454-1

Carvacrol Affects Serum Cytokines and Endothelin Levels of Ovalbumin Sensitized Guinea-pigs

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Objective: Different pharmacological effects of carvacrol including relaxant effect, its inhibitory effect on muscarinic and histamine (H1) and stimulatory effect on β-adrenoceptors have been demonstrated on guinea pig tracheal chains in previous studies. In the present study, the effect of carvacrol on blood IL-4, IFN- γ and endothelin levels of sensitized guinea pigs is examined.

Material and Methods: Five groups of guinea pigs sensitized to ovalbumin (OA) were given pure drinking water (group S), drinking water containing three concentrations of carvacrol (40, 80 and 160 µg/ml) and dexamethasone. The blood IL-4, IFN- γ and endothelin levels of sensitized and control guinea pigs were evaluated (n=6, for all groups).

Results: Blood IL-4 and IFN-γ levels ($P<0.001$ for both cases) as well as endothelin ($P<0.01$) were increased but IFN-γ/IL4- ratio decreased ($P<0.05$) in sensitized animals compared to controls. The treatment of S animals by dexamethasone ($P<0.01$) and two higher concentrations of carvacrol ($P<0.001$ for both cases) significantly decreased the IL-4 level. The treatment of S animals with dexamethasone did not changed IFN-γ levels but treatment with high

concentration of carvacrol significantly increased its level (P<0.001). In addition, IFN-γ/IL4- ratio was significantly increased in S groups, who were treated with dexamethasone (P<0.05) and two higher concentrations of carvacrol (P<0.001 for both cases). Treatment of S animals by dexamethasone (P<0.01) and all concentrations of carvacrol also significantly decreased endothelin level (P<0.01 to P<0.001).

Conclusion: The results show that carvacrol causes the reduction of IL-4 and endothelin, but it increases IFN-γ and IFN-γ/IL4- ratio in the blood of sensitized guinea pigs. The results also suggest more specific effect of carvacrol compared to dexamethasone due to the absence of the effect of later on IFN-γ.

Keywords: Carvacrol, Relaxant effect, Cytokine, Endothelin.

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Poster Presentation

A-10-106-2

Level of Agreement between Children with Asthma and their Parents on Quality of Life

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Objective: Child-parent agreement is a controversial aspect of measuring health-related quality of life (HRQoL) in children and adolescents. The aim of this study was to assess the agreement between the children self-reports and parent proxy reports of the PedsQL 3.0 Asthma Module in Iranian children with asthma to evaluate HRQoL. Moreover, the psychometric properties of the child and parent reports of the PedsQL 3.0 Asthma Module were assessed in the present study.

Material and Methods: Participants were 112 children with asthma and their parents, who completed the Farsi version of the PedsQL 3.0 Asthma Module. The multitrait-multimethod correlation matrix and factor analysis were used to test whether the child self-reports and the parent proxy reports measured the same construct. Additionally, convergent and discriminant validity and internal consistency were assessed using the Pearson correlation.

Results: The correlation between the child and parent HRQoL perceptions ranged between 0.13 and 0.36 across the same domains. Our factor analysis revealed

that the child self-reports and the parent proxy reports measured 2 different constructs of HRQoL. Furthermore, our findings showed that both the child self-reports and the parent proxy reports of the PedsQL 3.0 Asthma Module had excellent internal consistency and acceptable convergent and discriminant validity.

Conclusion: Although the child self-reports and the parent proxy reports of the Farsi version of PedsQL 3.0 Asthma Module showed good psychometric properties, they were not interchangeable. Our children with asthma and their parents evaluated child HRQoL from their own viewpoints.

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Poster Presentation

A-10-404-1

Asthma and Helminthic Infections: Toxocara is Contributing to the Inflammatory Disorders

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Objective: Human allergic diseases in industrialized countries, generally in the form of asthma arise. Asthma is a major chronic inflammatory disorders of the conducting airways, which affecting up to 300 million people in the world and by adopting a westernized lifestyle and become urbanized, it is expected that there will be much more. Due to previous reports close correlation between parasitic infections (helminthiasis) and allergic diseases such as asthma have been observed. However, the contradictions in these findings made us to study association of one of the nematode infection and allergic diseases such as asthma. Toxocariasis caused by the nematode larvae of Toxocara cati and Toxocara canis. These roundworms primly infected cat and dogs, as common hosts, following it humans are infected by using uncooked meat of infected parasitic paratenic hosts or through with contaminated hands and fomites. Despite the fact that in most seropositivity cases for toxocariasis, infection does not cause specific symptoms, but in some patients migration of larvae through the different tissues and organs, leading to various clinical symptoms and diseases such as: fever, hepatosplenomegaly, dermatological disorders, myositis, lymphadenopathy, pseudo rheumatic syndromes that divided into visceral larva migrans (VLM) and ocular larva migrans (OLM), neurotoxocariasis (NT) and covert toxocariasis (CT). In

visceral involvements, vital organs like a lungs or heart have an afoul mal or dysfunctions. In more than 50% of cases migration of larvae through the lungs may result in allergic sign and pulmonary symptoms such as wheezing, coughs, mucous production hyper-reactivity of the airways asthma and, acute bronchitis. This article will review the evidence for association between toxocariasis and asthma with a more detailed study of the immunological mechanisms involved.

Keywords: Asthma, Helminthic diseases, Toxocariasis, Visceral larva migrans, Risk factors

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Poster Presentation

A-10-133-1

Proposal of a New Insight into Asthma Disease Study: Homology Modeling of the Cysteinyl Leukotriene Receptor 1

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Objective: The goal of the present work was to identify the 3D structure of the Cysteinyl leukotriene receptor 1 (CLR1) protein through homology modeling. It is a lipid mediator of inflammation in airways, which successfully targeted for drug development in asthma. Homology modeling is a process, which creates a protein with no identified 3D structure (the target) from its amino acid sequence and an experimentally determined 3D structure of a related homologous protein (the template).

Material and Methods: The amino acid sequence of CLR1 was obtained from the uniprot database (http://www.uniprot.org) (accession no. Q9Y271). The BLAST (basic local alignment search tool) software was exerted to find the homologous protein structures as the template for protein modeling of CLR1. The multiple sequence alignment of the template sequences and the CLR1 sequence was done using the Clustal Omega program. Homology modeling of the TLR7 was implemented using MODELLER 9.17 software. One hundred models were constructed and the best model was chosen based on DOPE (Discrete Optimized Protein Energy) score. This model was therefore utilized for further analysis.

Results: According to the blast results, proteins with PDB ID 4XNV, 4XT1, 4YAY, 4ZUD and 5C1M were selected as template for multiple template homology

modeling. As shown in Figure 1, the best modeled CLR1 with DOPE score -33441.07 was selected for further analysis.
Conclusion: This study performs as the first work providing a satisfying estimation of the structure of the CLR1 protein, resulting in the composition of a theoretical model of the 3D structure of CLR1 using computational techniques and homology modeling for in silico studies about asthma entrants.

Keywords: Homology Modeling, Asthma, Modeller, BLAST
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Poster Presentation
A-10-150-1

Effectiveness of Applying the Making Sensitivity Caring Model on Drug Adherence and Quality of Life among Patients with Asthma

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Objective: Research is aimed at study on effects of implementing of the Making Sensitivity caring model on quality life and medicinal adherence of asthmatic patients who referred to asthma and allergy clinics of educational hospitals of Ahvaz, Iran.
Material and Methods: In this interventional study which was conducted on asthmatic patients referring the above mentioned clinics, 74 subjects were selected using convenience sampling method and were randomly allocated into 2 interventions (37 subjects) and control group (37 subjects). Data collection tool was a researcher-made Medical Adherence Inventory (MAI) and quality life of sf 36. Patients and their families were sensitized to medical adherence in the intervention group in order to enhance the quality of life among patients with asthma and prevent recurrent asthmatic attacks. A month later, the subjects both in control and intervention group filled the MAI and quality life sf36 and their scores were analyzed. The collected data were analyzed using SPSS software, Independent t-test, Paired t-test and Chi-Square.
Results: The results revealed that there were 40 males and 37 females with age mean of 41. The length of affliction was 8.4 years, on average. However, following

applying the "Making Sensitivity" caring model for two months, Average score drug adherence (The intervention and control groups, 39/7±5/7 and 46/2±2/9 respectively, p-value=0/00), Average score quality of life (The intervention and control groups, 56/7±20/4 and 71/6±13/6 respectively, p-value=0/001) The difference was statistically significant.

Conclusion: The results of the present study showed that implementing the "Making Sensitivity" caring model had a positive effect on quality life and medicinal adherence among asthmatic patients; that is, applying the model made the patients, their family, and nurses sensitive to medicinal adherence and enhance quality of life in order to manage asthmatic signs. Therefore, considering this condition and its heavy treatment costs, and due to the efficiency of this domestic model in management and prevention of asthmatic complications, applying of this model is recommended by caregivers.

Keywords: Asthma, "Making Sensitivity" caring model, Medical adherence, Quality of life

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Poster Presentation

A-10-169-1

The Study of Relationship between Selenium Serum Level in Asthmatic Children Referred to Shahid Madani Pediatric's Clinic in Khorram Abad

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Objective: Asthma is a chronic inflammatory disease of the airways that various genetic and environmental factors play a role in its creation. Free radicals play a role in the pathogenesis of asthma. Antioxidants that trace elements such as selenium is in their structure, has an important role against the production and harmful effects of free radicals and ultimately reduce the severity of asthma. Because asthma can increase oxidative stress, maybe selenium plays an important role in the pathogenesis of the asthma. The relationship between prevalence and

severity of asthma and the level of selenium in human studies have not shown exactly.

Material and Methods: In this cross-sectional study, all children with asthma admitted to the Khorram Abad pediatric clinic of Madani hospital were studied. 65 asthmatic children and 65 healthy children were selected as target group. In both groups in the form of a questionnaire variables such as: Age, sex, location, contact with smoke, family size, family history of asthma and allergy, type of feeding in infancy was evaluated. Blood sample was taken to measure the quantitative level of selenium.

Results: In patients with asthma, 40 were male and 25 were female, in control group 36 male and 29 females. 8% of girls and 5% of boys with asthma had Selenium deficiency, according to Fisher test, this difference was not significant. Selenium deficiency in 12.9% of the rural asthmatic children was observed but this deficiency was not seen in the urban and there was a significant association between selenium deficiency and living place (p_v =0.031). There was no relation between the mean of serum selenium levels in asthmatic children and family size, family history of asthma and allergy, family size, type of feeding, exposure to cigarette. Selenium deficiency was seen in 2.6 % of children with asthma and 1.3% of healthy children but there was no significant difference between two groups.

Conclusion: There was not statistically significant difference between Serum selenium levels in children with asthma and control groups in the city of Khorram Abad and selenium supplementation in children with asthma in this city is not necessary.

Keywords: Asthma, children, Selenium

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Poster Presentation

A-10-204-1

The Relationship between Asthma and Allergic Rhinitis with Working in Palm Tree Gardens in Jahrom City in 2016

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Objective: Asthma and allergic rhinitis are diseases that can be related to occupation.The present study aimed to investigate the relationship between asthma and allergic rhinitis with employment in the palm trees gardens of Jahrom, Iran.
Material and Methods: This study was a cross-sectional and descriptive study. A group including 50 palm tree garden workers and a control group including 50 office employees were selected. Data collection was performed by using the standard ISAAC and ASQ questionnaire. Data were analyzed by SPSS22. Frequency and percentage were reported for demographic information and chi-square tests, t-test and logistics regression were used to analyze factors influencing disease.
Results: A significant relationship was observed between asthma and occupation (P =0.046) and asthma was higher in palm tree garden workers. However, no relationship was observed between age, duration of employment, smoking cigarettes, hookah or addiction with asthma. Furthermore, in this study, no significant relation was observed between the prevalence of asthma and contact with dust, contact with pets' skin and hair, family history of asthma or the use of perfume and air freshener. Rhinitis was significantly higher in the palm tree garden workers (P=0.038).The symptoms of allergic rhinitis in both workers and office employees were higher in spring.
Conclusion: The prevalence of asthma and allergic rhinitis in palm tree garden workers is more likely than in the general population and this occupational group should undertake necessary precautions.

Keywords: Allergic rhinitis, Asthma, Date garden, Iran, Jahrom

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Poster Presentation

A-10-351-1

Rho-kinase Inhibition Attenuates Airway Hyperresponsiveness and Remodeling, but not Inflammation and Breathing Complexity

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Objective: Asthma is a heterogeneous group of conditions that result in reversible, recurrent bronchial obstruction. Current therapeutic approaches are focus on amelioration of disease symptoms, but are only partially effective on most features of asthma. Rho-Rho-kinase signaling is involved in many biological processes. It is believed that biological roles associated with Rho-kinase, are related to pathophysiological features of asthma including airway hyper-responsiveness (AHR), beta 2-adrenergic receptor desensitization, extracellular matrix remodeling, eosinophil recruitment and goblet cell metaplasia. This study was designed to assess the effect of Rho-kinase inhibitor (y-27632) on AHR, inflammation, airway remodeling and breathing pattern in animal model of allergic airways disease.

Material and Methodes: Guinea pigs were subjected with twelve OVA or saline inhalation exposures. Repeated challenges with OVA induced airway inflammation and remodeling as well as AHR, and decreased complexity of breathing pattern compared to saline group. Y-27632 applied from fifth OVA inhalation in OVA/Rho-kinase group and before methacholine challenges in OVA+ Rho-kinase group.

Results: OVA-induced AHR was completely attenuated in both groups of animals that were treated with Rho-kinase inhibitor. Histological analysis of lungs showed that treatment with Rho-kinase inhibitor significantly reduced the thickness of airways smooth muscles and collagen deposition in OVA/Rho-kinase group. However, Rho-kinase inhibitor did not significantly affect airways inflammation and complexity of breathing pattern.

Conclusion: The present study showed that Rho-kinase signaling pathway plays a cardinal role in airway hyperresponsiveness and remodeling. It seems that inhibition of Rho-kinase could be considered as a novel therapeutic target in treatment of asthma.

Keywords: Asthma, Rho-kinase, Airway hyperresponsiveness, Airway remodeling, Breathing complexity

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Poster Presentation

A-10-234-1

Assessment of Use and Cleaning Method of Spacer Devices in Asthmatic Children in Karaj

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Objective: Most of spacers were made of plastic that causes an electrostatic charge on their surfaces resulting in reduced drug delivery to the lungs by attraction of the aerosol. To avoid the effect of charge; detergent-washing and air-drying of spacers is recommended on a regular basis.
Material and Methods: We have investigated the routine methods used by 60 asthmatics out patients to clean and dry and how to use their spacers were assessed by completing a questionnaire.
Results: The patient age ranged from 2 to 14 yr with a mean age of 7 yr. There were 44 patients aged more than 4 years old and among them 44% used their spacers with mask in an incorrect manner.18.3% of mothers clean the spacer everyday: 43.3% every week: 30% every month or more and 8.3% never clean their spacers.40% wash their spacers only with water: 43% with detergent and then rinse them and only 7.3%wash their spacer with detergent but without rinsing. For drying the spacer after washing 29.1% use cloth and 70.9% allow it to drip dry. The duration of use for one spacer in 43.3% was less than 6 months; 33.3% for 6 to 12 months; 15% for 1-3 year and 8.3% of the patients was more than 3 years (in 2 patients up to 5 year).
Conclusion: There are serious problems in the use of spacer in our patients. We should all spend a few extra minutes with our patients and their parents for teaching them how to use and store their spacers to ensure that the aerosol we prescribe are delivered in the best possible manner. Manufacturers have to explain correct cleaning method of spacers clearly in their instructions.

Keywords: Spacer-cleaning method, Asthmatic children
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Poster Presentation

A-10-209-1

Effect of Mind's Relaxation and Diaphragmatic Respiration on Base of Scientific Yoga on Asthma

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Objective: Asthma is a chronic lung disease that influences and narrows the airways by spastic contraction of the smooth muscle in the bronchioles, which

partially obstructs the bronchioles and causes recurring periods of wheezing, chest tidiness, shortness of breath, and coughing. Asthma is categorized as a psycho-somatic disorder. On the other hand, it has been shown that application of the ancient science of Yoga has potential effect for prevention and recovery from various psycho-somatic disorders such as asthma through harmony between mind and body function. To study the effect of mind's relaxation and diaphragmatic respiration (MRDR) techniques on base of scientific Yoga at the aim of reducing the attacks period and drug's application in asthmatics

Material and Methods: Seventy sufferers were identified for bronchial asthma based on their history or regular paroxysmal dyspnea (breathlessness) and cough, and according to the severity of their attacks were categorized into mild, moderate, and severe asthmatics. Then they attended the respiratory camp at the various MRDR techniques such as physical postures (Asana) and consciousness and controlled diaphragmatic respiration (Pranayama) for period of 6 months. The pulmonary function tests of patients were done internally i.e. Forced Vital Capacity (FVC), Forced Expiratory Volume (FEV), and Peak flow rate.

Results: In general, patients having FVC less than 2 Lt. before MRDR exercises, showed about 20% of improvement after exercises. Patients having FEV less than 2 Lt. after exercises, FEV was seen 25% improvement. In addition, there was a significantly greater improvement after practice of MRDR in the weekly number of asthma, scores for drug treatment, and peak of flow rate, resulted in a decreased in a number of day and night attacks and use of drugs.

Conclusion: These finding provide practitioners with important information and potential benefit of mind's relaxation and diaphragmatic respiration (MRDR) techniques and as a possible adjunctive therapy for asthmatics to help psychological distress, physical effects and to improve quality of life. Nevertheless, more attention must be paid to the methodological quality of future research, as well as to progress these areas in the upcoming.

Keywords: Asthma, Diaphragmatic respiration, Scientific yoga

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Poster Presentation

A-10-479-1

Congenital Sacular Cyst of the Larynx: a Rare Differential Diagnosis for Asthma

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Objective: Stridor is a noise in infants, which mostly produced by laryngomalacia and less common by laryngeal sacular cyst.
It also may be considered as the uncommon presentation of hyper-reactive airway disease.
Case Presentation: A two years old boy was referred to our clinic with persistent stridor and diagnosis of laryngomalacia and having no improvement during the past eighteen months observation.
There was history of three times hospital admission of the case with respiratory distress presentation in the past two years, considered as a difficult to treat asthmatic patient. Therefore, each time he was treated with antiasthmatic medications.
On physical examination, he had biphasic stridor and inspiratory wheezing and increased breathing work while crying.
Conclusion: The patient was referred to pulmonologist for further investigations. Laryngoscopic examination was performed which revealed sacular cyst of the larynx. Marsupialization procedure was done for the case, which changed him free of symptoms and well in the following-up visits.
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Poster Presentation

A-10-176-1

Air Pollution on Mortality from Asthma in Tehran during the Years 1391 to 1394

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Objective: Nowadays, Asthma prevalence, as a respiratory illness, particularly enhances between children in many countries including Iran. Symptoms of asthma include wheezing, trouble breathing, chest tightness, and cough. It is estimated that the mean prevalence of asthma in Iran from 1998 to 2003 to be 13 percent with the minimum in Kerman (2.7%) and maximum in Tehran cities (35.3%). Poor asthma control, prevention, and management may result in acute asthma exacerbations. Effective factors on the enhanced asthma prevalence are: genetic and environmental parameters including allergens, viral infections, pollutants, life style, socioeconomically conditions, geographical area, food diet, and tobacco smoke. The aim of this study is to estimate the number of deaths from asthma related to air pollution in Tehran city during the years 1391 to 1394 respectively.

Material and Methods: In this cross-sectional study, death statistic of related asthma in Tehran city in 2011- 2014 are obtained in a census sampling. The data are collected from the Environmental Protection Agency and the cemetery. The collected data is analyzed by SPSS 18 software.

Results: The results show that 55 people, 51 people, 46 people, and 42 people died from asthma in Tehran city in 1393, 1394, 1392, and 1391, respectively. The mean of dead people age is 67.7±5.52. Of 194 dead, 57.7% (112 people) are male, 72.2% (140 people) are older than 65 years. Of 194 dead, 52.1% (101 people) occurred in November, December, and January months. The maximum and minimum mortality rates are estimated zone 10 and zones 21 and 22 in Tehran city, respectively. Between death statistic of related asthma and variables: air quality index (AQI), age, month, and gender is seen meaningful statistic relationship ($P<0.05$).

Conclusion: Between death statistic of related asthma and January, November, December, February, and March months is seen increasing trend, respectively. It is concluded that asthma prevalence rate in men is higher women. It is concluded that aging people (>65 years old) are more sensitive to air pollution.

Keywords: Asthma, Air pollution, Mortality, Tehran city

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Poster Presentation

A-10-195-8

Evaluation Information Sources of Students Non-medical Universities in Kermanshah Province, Iran about Asthma

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Objective: Asthma is a chronic (long-term) lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing. The coughing often occurs at night or early in the morning. Asthma affects people of all ages, but it most often starts during childhood. The relationships between life style and asthma disease. This study was aimed to clarify the source of information (SI) of the 4 student groups in Kermanshah's non-medical universities including BSc, MSc, PhD in non-medical sciences and Doctors of Veterinary Medicine (DVM) about asthma.

Material and Methods: This cross-sectional prospective questionnaire survey was carried out in non-medical students Kermanshah province of Iran and Knowledge about asthma was evaluated. 300 students in grades BSc, MSc, PhD and DVM were included.x2 and one way ANOVA tests and p value<0.05 were applied for statistical analysis.

Results: The majority of study population (%37) mentioned television as their main source of information, while only one person (%3.5) obtained information from newspapers. A significant correlation between field of study and source type of information were observed (p<0.05).

Conclusion: Our result indicated that modification of the red lines existed in strategist sights and the media, especially in RAI & TV, will reduce the risk of Asthma with improving Life Style, revision and improvement of SI should be a priority for all institutions and universities especially in study area.

Keyword: Information sources, Students Non-medical, Asthma

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Poster Presentation

A-10-244-1

A 7-year-old Boy with Chronic Recurrent Respiratory Distress, Double Aortic Arch Mimics Asthma, A Case Report

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Case Presentation: This report describes a 7 years old boy who has had chronic and recurrent respiratory distress and wheezing episodes since infancy. He had been treated for hyper-reactive airway disease and asthma, with partial response. The problem had been associated with cyanosis and did not improve with asthma treatment; therefore, we consider other underlying diseases, such as cardiovascular problems. In “double aortic arch” the ascending aorta bifurcates and ends to a right and left sided arch which surround the esophagus and trachea and then join together to compose the descending aorta. The right arch is often larger than the left one. The diagnostic work-ups revealed the ‘‘double aortic arch’’ which had not been diagnosed for years.

Vascular ring is among the differential diagnoses of chronic cough. Other possible causes of chronic cough include: Gastroesophageal reflux disease, cystic fibrosis, inhaled foreign body, infection, tracheomalacia, immune deficiency, vocal cord dysfunction, bronchiectasia, chronic sinusitis with or without postnasal drip, allergic disease, and branchial cleft cysts. The clinical signs and symptoms of vascular ring in children vary from a completely asymptomatic patient to severe respiratory distress in a neonate. The most prevalent presentations in children are nonspecific and include; choking, vomiting, dysphagia, cough, stridor, wheezing and episodes of upper respiratory tract infection. The clinical presentation of double aortic arch most often occurs in infancy. External pressure on the airway by vascular ring causes respiratory and feeding problems. Feeding problems such as slow feeding, difficult swallowing, hyperextension of head during eating, may occur later in life, since these problems typically present when solid foods are introduced. Chronic wheezing is aggravated by eating, crying and neck flexion, while neck extension alleviates the noisy breathing. Severe problems such as apnea and cyanosis may also occur.

Conclusion: Patients with vascular rings usually present with nonspecific and vague complaints and can mimic asthma or hyper-reactive airway disease. Physicians should consider vascular rings in the list of differential diagnosis of chronic cough, respiratory problems and refractory asthma to prevent the unnecessary interventions and procedures and delaying the diagnosis.

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Poster Presentation

A-10-171-2

Quality of Life in Children 8 to 12 Years with Allergic Asthma

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Objective: Asthma is the most common chronic diseases of childhood. Asthma not only affects the health of children but also on other aspects of life such as school attendance, physical activity and performance children's mental health and sleep and overall quality of life. The aim of this study was to evaluate quality of life for children 8 to 12 years old was diagnosed with allergic asthma. The aim of this study was to evaluate quality of life for children 8 to 12 years old was diagnosed with allergic asthma.

Material and Methods: In this study, 44 children 8 to 12 years with allergic asthma referred to the Madani hospital for control and follow-up treatment selected randomly. Quality of life was measured using standardized questionnaires Paediatric Asthma Quality of Life Questionnaire (PAQLQ). The standard questionnaire as the 23 questions used to measure quality of life in the domains of symptoms, the scope of psychosocial and physical activity. The maximum score is calculated from responses to the questionnaire will be 161 and a minimum score of 23. The questionnaire completed and final score of the quality of life calculated. Collected questionnaire analyzed for statistical with the software SPSS / 21 by using t-test and analysis of covariance.

Results: The average age was 9.90 years, with a standard deviation of 1.447 and a minimum age of 8 and a maximum of 12 years.43.2% children in the age group 8-9 years, 36.4% in the age group 10-11 years and 20.5% were 12 years of age. 61.4% of the children were male and 38.6 % children female. 9 children with mild, 30 with moderate and 5 with severe asthma. Quality of life was in 60% of patients 97. 98, in 35% of 77.6 and in 15% of 119.8.

Conclusion: The quality of life of children with asthma is moderate to low.

Keywords: Allergic asthma, Quality of life, Children

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Poster Presentation

A-10-140-1

The Effect of Salt Space on Clinical Findings and Peak Expiratory Flow in Children with Mild to Moderate Asthma: A Randomized Crossover Trial

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Objective: The asthma treatment and control of disease might be associated with significant burden on family and community, thus exploring other therapeutic plans could be desirable. The aim of study was to investigate the effect of salt space on clinical findings and peak expiratory flow rate among children with asthma.

Material and Methods: In this randomized crossover trial, thirty-four patients aged 6-14 years old with mild to moderate asthma were selected and randomly divided into two groups. The first group went through a period of salt therapy by staying in the salt room for one hour, three times a week for three consecutive weeks and then was under observation for three weeks. This process was reversed for the second group (three weeks under observation followed by salt therapy). The wash-out period was one week. During the study, the morning and evening peak expiratory flow (PEF), the frequency of coughing, wheezing, dyspnea and use of rescue medications were measured

Results: Salt therapy had a significant effect on rising the morning and evening PEF in the second week. However, there was no significant effect on PEF variabilities, cough, wheezing, dyspnea and the frequency of rescue medication. No side effect was observed during salt therapy.

Conclusion: This study showed the significant effect of salt therapy on PEF rate of the patients in the second week. However, further studies with different frequency and time of salt therapy on respiratory disorders is recommended.

Keywords: Asthma, Salt therapy, Children, Peak Expiratory Flow Rate (PEFR)

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Poster Presentation

A-10-170-1

Self-Management of Asthma Using Telemedicine

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Objective: Asthma is common, affecting an estimated 300 million people worldwide. Telemedicine, the use of telecommunications technology to deliver care at a distance has reached a maturity, which can effectively support the promotion of health, reduction of treatment costs, prevention and self-management of chronic diseases like Diabetes, hypertension and asthma. The aim of this paper is to investigate effectiveness of self-management of asthma using telemedicine.

Material and Methods: A systematic review of application of telemedicine for improving asthma controlling was performed. The electronic articles published between November 2006 and November 2016 indexed in Pubmed were reviewed using asthma, self-management and telemedicine, telehealth and other related terms as keywords. Numbers of 94 articles focusing on asthma management through telemedicine were found. After removing articles which were not available in full text format (n=48) and duplicated papers (n=6), two reviewers screened titles and abstracts of these articles on the basis of inclusion criteria. The remaining articles matched with inclusion criteria (n=37) were reviewed in full text, and finally 21 publications were included based on eligibility criteria in the review.

Results: Studied telemedicine systems were developed based on various technologies such as web (n=9), mobile (n=5), telephone (n=3) and computers (n=3). In the previous studies telemedicine has used for education (n=5) and self-management (n=11) of asthmatic patient and intervention duration ranged from 0.5 to 24 months. In addition, many of authors reported effectiveness of telemedicine by various sets of quality measures such as improvement of asthma self-management (n=12),access and patient-centered communication with physicians (n=4), adherence to asthma medications (n=2), quality of life (n=3) and reduction of planned or unplanned visits to a health care professional for asthma-related concerns (n=3),number of days lost from work or study due to asthma (n=1) and potentially long-distance travels to see specialists (n=2).

Conclusion: This study provides insight into effectiveness of interventions based on telemedicine for asthmatic patient. Few studies have addressed Clinical effectiveness and cost-effectiveness of treatments for patients so future research should be focused on assessing the (cost-clinical) effectiveness of implementation strategies.

Keywords: Asthma, Telemedicine, Self-management
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Poster Presentation

A-10-201-1

Retrospective Study of 281 Asthma Cases in Sina Hospital of Hamadan (2010 - 2015)

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Asthma is an obstructive pulmonary disease caused by immunogenic and non-immunogenic agents. It is mostly prevalent in autumn and winter seasons resulting in hospitalization of the patients. In the present study, 281 hospitalized asthma cases stayed at Sina hospital Hamadan from 2010 to 2015 were evaluated. The total prevalence rate of Asthma in women was 66% and in men was 33%. 1- The maximum prevalence rate was for year 2015 (21.35%). 2- Statistically the rate of the disease from 2010 to 2015 was increasing. 3- The maximum rate of the disease in women was in 2010 (85.71%) and for men was in 2013 (43.13%). The maximum prevalence rate for asthma was in winter at 32.38% and the minimum prevalence rate of the disease was in summer at 16.73%.
In sum, the prevalence of pulmonary diseases is probably up-regulated in cold seasons and that during these seasons asthma in the patients increase. On the other hand, the gender and aging can affect asthma symptoms in women and immunologic and non-immunologic stimulators can increase the prevalence rate of asthma.

Key words: Asthma, Hamedan, Women, Winter
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Poster Presentation

A-10-457-1

Theraputic Effect of Zataria Multiflora Bios on Asthmatic Patients

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Objective: There is no definitive evidence about the effect of *zataria multiflora boiss* on asthmatic patients. In the present study, the preventive effect of *zataria multiflora boiss* on pulmonary function test and inflammation markers was studied in asthmatic patients.

Material and Methods: Thirty-six asthmatic patients were randomly allocated to three groups (n=12) and drugs were prescribed (double-blind) for two months. Groups included: placebo group (P) and two experimental groups that received two concentrations of *Zataria multiflora Boiss* (Z 5 and Z 10 mg/kg/day). Pulmonary function tests (PFT), respiratory symptoms, Haematological indices and inflammatory mediators were assessed at the beginning, one and two months after treatment.

Results: Haemoglobin and haematocrit in Z 10 ($p<0.05$ and $p<0.01$) were decreased. In all treated groups the mean corpuscular volume significantly reduced ($p<0.05$ and $p<0.01$. Total WBC decreased in all treated groups ($p<0.05$ - 0.001). The level of hs-CRP was also reduced in treated groups. Respiratory symptoms were significantly reduced among treated groups during two months treatment ($p<0.05$ - $p<0.001$). Most values of pulmonary function tests among treated groups significantly increased during two months ($p<0.05$ - $p<0.001$).

Conclusion: *Z. multiflora* ameliorates pulmonary function tests and respiratory symptoms in asthmatic patients. Furthermore, this plant can be effective in decrement inflammatory biomarkers and haematological indices.

Keywords (3-5 word): *zataria multiflora boiss*, Asthma, pulmonary function tests, inflammatory biomarker.

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Multi-Disciplinary Field

The Third International Congress of
Immunology, Asthma & Allergy

Invited Speaker

A-10-339-1

Primary Immunodeficiency Diseases and Lung

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Objective: Primary Immune deficiencies (PIDs) are congenital genetic defects associated to an expanding spectrum of clinical phenotypes that include infections, chronic inflammation, autoimmunity, lymphoproliferation, allergic manifestations or rarer, certain forms of cancer. Pulmonary complications present a significant cause of morbidity and also mortality among patients suffering from different forms of PIDs.

Material and Methods: The PubMed and Scopus databases were searched to identify pulmonary complications in CGD patients. 50 articles were included in the present study.

Results: The most commonly involved organ in PIDs is the lung, manifested as infectious or non-infectious involvement. Infectious complications are characterized by pneumonia and, less frequently, abscess, pleural effusion and bronchitis. According to the immune defect the most common causative agents of pulmonary infections aretypical spectrum of etiological pathogens. Acute infections should be treated by early and aggressive therapies with antimicrobial agents. Stem cell transplants, such as bone marrow stem cell transplantation, are the phenomenal restorative treatment plan for some of these patients. In addition, as survival from infectious disease improves, noninfectious pulmonary complications of PIDs, ranging from bronchiectasis and interstitial lung disease (ILD) to pulmonary malignancy and autoimmunity, are increasingly responsible for poor outcomes in PIDs.

Conclusion: Since the most common site of involvement in PIDs is the lung, the pulmonologists (pediatrics or adult), Internists and General Practitioners may be among the first to recognize the pattern of pulmonary complications, leading to diagnosis of PIDs.

Keywords: Primary immunodeficiency diseases, Complications, Lung

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Invited Speaker

A-10-424-2

Correlation between Total Serum Free Light Chain Immunoglobulins in Respiratory and Food Allergies

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Objectives: Tetrameric Ig are produced and secreted by plasma cells, but they also produce and secrete Ig-free light chains (FLC κ andλ). Studies in animal models of allergic disease suggest the existence of an IgE-independent hypersensitivity response involving antigen-induced mast cell activation mediated by FLCs. FLCs are increased during mucosal immune responses and are possibly involved in the pathogenesis of various atopic and non-atopic diseases.

We aimed to explore the relation between serum FLC and IgE in patients with high levels of specific IgE for food and respiratory allergens.

Material and Methods: 37 subjects with food allergy, 27 subjects with respiratory allergy and controls were selected and serum was collected for determination of κ and λ FLCs, total IgE by ELISA. Specific food and respiratory allergens were detected using Improvio C Blotting.

Results: Serum FLCs were found significantly increased in respiratory and food allergic patients. In cow's milk allergic patients, no increase in specific IgE was detected, while serum FLCs were found increased. No correlation between FLC and total serum IgE was found.

Conclusions: We show that FLCs are significantly augmented in patients with high total and allergen-specific IgE. No significant correlation between FLC and allergen-specific IgE was found indicating an IgE-independent production of FLCs. Interestingly; total FLC levels in cow's milk allergic subjects are raised even in the

absence of elevated allergen-specific IgE, which suggests that detection of FLC may be a complementary biomarker for allergy.

Keywords: FLC, Allergy, Food allergen
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Poster Presentation

A-10-108-1

Anti-inflammatory Effects of Flavenoid Quercetin, on Activated Human Peripheral Blood Neutrophils

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Objectives: Neutrophils are the major cellular type of the innate immune response. Immediately after the stimulation, neutrophilic enzymes are activated and produced toxic mediators such as Nitric oxide (NO), Myeloperoxidase (MPO) and Tumor Necrosis Factor-alpha (TNF-α). These mediators can be toxic not only for infectious agents but also for host tissues. Since flavonoids exhibit antioxidant and anti-inflammatory effects, they are subjects of interest for pharmacological regulation of inflammation. In the present study the effect of flavonoid, Quercetin, on the stimulus-induced MPO, NO and TNF-α production in human neutrophils was studied. When the cells were pre-incubated with Quercetin, the MPO, NO and TNF-α generation induced by phorbol 12-myristate 13-acetate (PMA) was significantly suppressed, showing anti-inflammatory effects of this flavonoid.

Materials and Methods: Human peripheral blood neutrophils were isolated via density gradient centrifugation using Ficoll coupled with dextran sedimentation. The cell preparations containing >99.9% granulocytes were determined by morphological examination through Giemsa staining. Neutrophils were cultured in complete RPMI medium. Neutrophils were pre-incubated with or without Quercetin for 30 min, and stimulated with 20 nM PMA or left unstimulated. After

2 hours, the supernatants were collected; NO and MPO production were analyzed using Griess Reagent, MPO assay Kit and TNF-α, respectively. Samples without PMA treatment were used as control.
Results: The results revealed that Quercetin, strongly and significantly inhibited neutrophil NO, MPO and TNF-α production.
Conclusion: In this study, it was shown that Quercetin significantly inhibits the release of NO, MPO and TNF-α by human neutrophils. Treatment with flavenoids may be considered as therapeutic strategies for neutrophilmediatory and inflammatory/autoimmune diseases.

Keywords: Human Neutrophils, Quercetin, Nitric Oxide, Myeloperoxidise, TNF-α
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Poster Presentation
A-10-113-3

Differences between Bovine and Human SIgA

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Objective: Secretory IgA (SIgA) from milk contributes to early colonization and maintenance of commensal/symbiotic bacteria in the gut, as well as providing defense against pathogens. SIgA binds bacteria using specific antigenic sites or non-specifically via its glycans attached to a-heavy-chain and secretory component. In our study, we tested the hypothesis that human and bovine SIgA have similar innate binding activity for bacteria.
Material and Methods: SIgAs, isolated from human and bovine milk, were incubated with a selection of commensal, pathogenic and probiotic bacteria. Using flow cytometry, we measured numbers of bacteria binding SIgA and their level of SIgA binding.
Results: The percentage of bacteria bound by human and bovine SIgA varied from 30 to 90% depending on bacterial species and strains, but was remarkably consistent between human and bovine SIgA. The level of SIgA binding per bacterial cell was lower for those bacteria that had a higher percentage of SIgA-bound bacteria, and higher for those bacteria that had lower percentage of SIgA-bound bacteria. Overall, human and bovine SIgA interacted with bacteria in a comparable way.

Conclusion: This contributes to longer term research about the potential benefits of bovine SIgA for human consumers.

Keywords: Secretory IgA, Bovine IgA, Human IgA, Infection, Milk

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Poster Presentation

A-10-139-1

The Effects of Opium Addiction on the Immune System Function in Patients with Fungal Infection

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Objective: The use of narcotics such as opium exposes addicts as susceptible targets of different diseases so that they might easily be exposed to different diseases such as fungal infections. The present study aimed to investigate the effects of addiction to opium and fungal infection on plasma levels of certain cytokines including IL-4, IL-6, IL-17, IFN-γ, and TGF-β.

Material and Methods: Present study includes 72 individuals who were divided into 4 groups: 1) opium addicted with fungal infection; 2) opium-addicted without fungal infection; 3) non-opium-addicted with fungal infection; and 4) normal individuals (non-opium-addicted and non-fungal infection). The fungal samples, after being detected and confirmed by a physician, were prepared based on clinical symptoms and then analyzed by direct smear and culture method. The measurement of the plasma level of cytokines was done by ELISA method.

Results: The comparison of the mean of the plasma level of cytokines shows that addiction to opium and fungal infection had respectively the significant effects on the plasma levels of IL-17, IFN-γ, TGF-β cytokines in all studied groups. The interaction of addiction to opium and fungal infection was only significant in the case of plasma level of IL-6.

Conclusion: Addiction to opium and fungal infection, either separately or simultaneously with each other, pose significant effects on the immune system

and cause disorders in the cytokine network and the immune system and also provides a suitable environment for fungal infection.

Keywords: Opium, Addiction, Fungal infection, Cytokine

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Poster Presentation

A-10-155-2

Increased Expression of Integrin β7 Gene in Newly Diagnosed Rheumatoid Arthritis

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Objective: Integrin molecules and chemokines play critical role in Lymphocytes and leukocytes migration and recirculation during autoimmune disorders. Normally gut-homing T cells express CCR9 and integrin *β7* in order to home back to lamina propria of intestine from peripheral blood. Our study was conducted to evaluate expression levels of the chemokine receptor CCR9 and the integrin *β7* in circulating leukocytes and lymphocytes from newly diagnosed Rheumatoid arthritis (RA) patients and compare these values with the same data obtained from healthy individuals without inflammatory disease.

Material and Methods: Total RNA was extracted from peripheral blood samples immediately cDNA was synthesized and finally gene expression of CCR9 and *β7* evaluated by quantitative Real time PCR. The T-test and ANOVA were used in order to compare the differences between two groups.

Results: The β7 gene expression showed significant difference between RA patients and healthy controls (P value= 0.007).

Conclusion: In our newly diagnosed patients who did not received any medication for RA the gene expression of integrin *β7* was higher than healthy controls. CCR9 gene expression did not reach significant different between two groups. Our results bring up disposability that over expression β7 gene may have a role in pathogenesis of RA.

Keywords: Rheumatoid arthritis, CCR9, Integrin β7, MALT

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Poster Presentation

A-10-157-1

Investigation on the Effect of Captopril on the Production of IFN-γ and IL-10

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Objective: Multiple Sclerosis, a chronic autoimmune neurodegenerative inflammatory disease, is the main reason of physical disability in young adults. Have been many efforts to find a better understanding of disease and subsequently effective drugs. Surprisingly Angiotensin converting enzyme (ACE) inhibitors have recently attracted attentions for their immunomodulatory effects, besides to their known effectiveness on hypertension. Captopril is one of the well-known ACE inhibitors which is used as an effective drug, for hypertension and congestive heart failure. Inconsistent results have been reported about the effect of captopril on cytokines.

Material and Methods: Blood samples were collected from 20 patients diagnosed as MS patients, in heparinized tubes. Peripheral blood mononuclear cells (PBMCs) were extracted by the Ficoll-hypaque technique. Isolated cells were washed by PBS and then resuspended in RPMI 1640 media, containing 10% heat-inactivated FBS, 100 U/ml penicillin, 100 µg/ml streptomycin, and cultured at 37°C in a humidified 5% CO2 incubator. The suspensions then divided in 96-well microplate at density of 2×105 cells/well. PBMCs from each patient were stimulated using 20µl of 0.5 and 2 mM concentrations of Captopril for 48h and 72h periods.

Results: Based on our results lower concentration of Captopril (0.5 mM) increases the amount of IFNγ in both 48 and 72 hours' treatments, and at the same time reduces IL-10 in both time periods. Passing of time shows more severe effect in both cytokines. In higher concentrations (2 mM) Captopril reduces both IFNγ and IL-10, and time passing amplifies the reduction. **Conclusion:** Since IFN-γ is considered as an inflammatory cytokine, and in return Interleukin 10 is known with anti-inflammatory effects, our experiments show that using Captopril be risky for a MS patient. Our results are in consistent with some of previous data have shown that taking Captopril may increase the risk of affecting by MS. Further investigations are necessary to specify the effect of Captopril on the development of autoimmune diseases such as multiple sclerosis.

Keywords: Multiple Sclerosis, Captopril, Cytokine, Interleukin 10, Interferon gamma

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Poster Presentation

A-10-157-2

Study the Effect of Ascorbic Acid on the Production of Cytokines in Multiple Sclerosis Patients

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Objective: Multiple Sclerosis, a chronic autoimmune neurodegenerative inflammatory disease, is the main reason of physical disability in young adults. More than 2 million people are affected worldwide and the rate of the disease is rather high, about 70 of 100000 in Tehran and Isfahan. Ascorbic Acid, known as vitamin C, is one of important required vitamins for humans, which must be received by food. One of the probable characteristics is anti-inflammatory activity. Since Cytokines as the key molecules in the process of inflammation and autoimmune diseases, can be appropriate targets to follow the process, have been used to check the effect of compounds on inflammation. Inconsistent results have been reported about the effect of captopril on cytokines.

Material and Methods: Blood samples were collected from 20 patients diagnosed as MS patients, in heparinized tubes. Peripheral blood mononuclear cells (PBMCs) were extracted by the Ficoll-hypaque technique. Isolated cells were washed by PBS and then resuspended in RPMI 1640 media, containing 10% heat-inactivated FBS, 100 U/ml penicillin, 100 µg/ml streptomycin, and cultured at 37°C in a humidified 5% CO2 incubator. The suspensions then divided in 96-well microplate at density of 2×105 cells/well. PBMCs from each patient were stimulated using 20µl of 0.5 and 2 mM concentrations of Ascorbic Acid for 48h and 72h periods.

Results: Based on our results lower concentration of Captopril (0.5 mM) increases the amount of IFN-γin both 48 and 72 hours' treatments, and also increases IL-10 in both time periods. Passing of time shows weakens the effect in both cytokines. In higher concentrations (2 mM) Ascorbic Acid still increases Interferon gamma, but also starts to reduce IL-10, and time passing unbrace the changes.

Conclusion: Since IFN-γ is considered as an inflammatory cytokine, and in return Interleukin 10 is known with anti-inflammatory effects, our experiments surprisingly showed strong inflammatory effect for Ascorbic Acid. Our results are in consistent with some of previous data have shown the reduction effect of vitamin C on Interleukin 10. More investigations are necessary to specify the effect of Vitamin C on the development of autoimmune diseases such as multiple sclerosis.

Keywords: Multiple Sclerosis, Vitamin C, Cytokine, Interleukin 10, Interferon gamma

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Poster Presentation

A-10-175-1

Evaluation the Clinical efficacy and Immunological Pathways under Micronutrients in Combination with Methotrexate Therapy in Chronic Plaque of Psoriatic Patients

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Objective: Psoriasis is a T cell-mediated autoimmune disease with elevated level of pro-inflammatory cytokines belonging mainly to Th1 and Th17 pathways. We investigated whether treatment with micronutrients supplement along with methotrexate (MTX) is able to induce significant modulation in mRNA expression of T cell immune patterns and its correlation with clinical response.
Material and Methods: Thirty patients suffered from plaque type psoriasis with Psoriasis Area and Severity Index (PASI) higher than 10 were recruited; 15 non-micronutrients taker (NMT) patients, treated by MTX daily (0.2-0.3 mg/kg/week) and 15 micronutrients taker (MT) patients treated by MTX plus micronutrient supplement daily for 12 weeks. Blood samples were collected at baseline and after 12 weeks. TaqMan quantitative real-time polymerase chain reaction was applied to analyses the expression of T-bet, IL-12, IFN- γ (Th1); GATA-3, IL-4 (Th2); IL-17, IL-23, RORγt (Th17); Foxp3, IL-2 (T_{reg}). Disease severity measured by PASI scoring system.

Results: Patients in showed noticeable and more rapid reduction of PASI score, scaling and involvement of lesions compared to group A (*P*=0.04; *P*=0.01; *P*=0.03, respectively). Respect to PASI-75 cut-point, expression of IFN-γ in MT group with upper PASI-75 was significantly lower than in related patients in NMT group (*P*=0.05). In addition, mRNA expressions of GATA3 and IL-4 in MT group with upper PASI-75 were significantly higher than patients in NMT group respectively (*P*=0.05, *P*=0.04). In addition, better clinical response in MT group was associated with decrease in expression of IL-17 and RORγt levels concomitant significant increment of Foxp3 expression (P<0.05).

Conclusion: According to significant attenuating of PASI score and up regulation of regulatory pathway in favor of MT group, we suggest consumption of micronutrients in combination MTX in psoriasis patients. Our results contribute to a better understanding of methotrexate immune-pathogenesis mechanisms and its correlation to clinical response in psoriasis.

Keywords: Psoriasis, Methotrexate, Micronutrients, Cytokine, Gene expression, Transcription factor

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Poster Presentation

A-10-173-4

Aquatic Birds' Serology in Zayndeh Rood River for NDV and AIV

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Objective: Zayandeh Rood River is located in the central part of Iran and goes from chaharmahal toward Isfahan and Gavkhooni Marsh. This river is more than 350 Km along the central watershed of Iran. Is responsible for nature of these area, different types of animals and plants are related to the river and some birds special aquatic and lentics are living in the Zayandeh rood river and its Marsh.
In current study some aquatic birds of Zayandeh Rood River are investigated for serology against Newcastle virus and Avian Influenza Virus.

Matherial and Methods: So after trapping by net or cage some birds were surrounded and just using a 5 ml siring about 2-3 ml of blood from wing vein were collected and the birds were marked and released at fall and winter of 1394. The

investigated birds were Goose (12), Green head Duk (10 birds), Duck Common (11 birds), Wild Duck (9 birds), Flamingo Gcreat (5 birds) and Coot (11 birds) with a total population of 58 birds. The blood samples were transported beside the ice to the lab and treatment done for serology by HI test

Results and Conclusion: Based on the lab results the NDV titers were ranged from 0 in Green Head Duck to 5 in Duck common and mean titer were3.7. The AI titer for H9N2 ,H5N1 and H7N7 were examined, Regarding to the result none of the samples were positive for H5 and H7 but the titer for H9 were ranged from 0 in Green head Duck to 4 in Great flamingo ,the mean titer for H9N2 were 1.6.

Keywords: Serology, NDV, AIV, Aquatic birds

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Poster Presentation

A-10-179-1

Computational Design of Potential siRNA Molecules for STAT4 Gene Silencing in Human Th1 cells: A Therapeutic Approach for Immunomodulation of Atherosclerosis

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Objective: Small interfering RNAs (siRNAs) are widely used to suppress gene expression by targeting mRNAs. Signal transducer and activator of transcription 4 (STAT4) is an important transcription factor for the Th1 cell generation. Targeting STAT4 or key downstream targets could provide novel therapeutic opportunities to prevent atherosclerosis. Therefore, the current study was conducted to design efficient siRNAs specific for STAT4 and to evaluate different criteria affecting their functionality.

Material and Methods: For the purpose of present study, all sequences of STAT4 gene were retrieved from Gen Bank database. Multiple sequence alignment was carried out to identify ORF (Open reading frame) and conserved region. Then, siDirect 2.0 tool was used for designing of potential siRNA molecules and

confirmation of predicted molecules was performed using Dharma siRNA technology and GeneScript siRNA target-finder. For checking any off target sequence similarity in other non-targeted organism's genome against whole Genebank datasets, blast tool was used. DNA/RNA GC content calculator and mfold server were used to calculate GC content and secondary structure prediction of designed siRNA, respectively. Finally, RNAcofold program was used to study the thermodynamics of interaction between predicted siRNA and target gene.

Results: Based on obtained results, three effective siRNA molecules for silencing of STAT4 were rationally designed and validated using computational methods, which may lead to knockdown STAT4 gene expression.

Conclusion: According to our results, this study demonstrated that siRNA targeting STAT4 can effectively suppress STAT4 gene expression and subsequently can be considered as a therapeutic agent in many Th1-mediated pathologic conditions specially atherosclerosis.

Keywords: Atherosclerosis, STAT4, SiRNA, In silico, Gene silencing

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Poster Presentation

A-10-195-2

Study of Sero-prevalence of IgM and IgG Antibodies to *Toxoplasma* Infection

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Objective: Toxoplasmosis, caused by the protozoan parasite Toxoplasma gondii, is one of the most common parasites of man and other warm-blooded animals. Humans are infected through contaminated food, water, and blood transfusion, organ transplantation, from mother to fetus through the placenta, once the host becomes immunocompromised or immunosuppressed.

Materials and Methods: In this study, 315 blood samples were collected from people suspected to Toxoplasmosis admitted to the Kermanshah Razi Laboratory during 1 year (2016) and Anti Toxoplasma IgM and IgG concentrations were determined using chemiluminescence method.

Results: Totally 40 antibody positive sera obtained, 5 (12.5%) were from males while 35 (87.5%) were from females showed positive levels of anti-Toxoplasma IgG and IgM, respectively. The highest rate of sero-positivity was observed in 14 to 50 year-old women. The peak of infection was observed among patients in the age group of 14-50in both sexes. While no positive samples were found in people under 14 years.

Conclusion: This study indicated Toxoplasma IgM and IgG were found to be significantly associated with age of the people. Histories of farming, stillbirth, eating of raw vegetables were associated with sero-prevalence of Toxoplasma Antibodies. The results showed that high infection rate in this population could not be ignored and the sero-prevalence rate need to include the testing of Toxoplasma as a part of the investigation that should be run on people for us to educate about the risk factors that lead to Toxoplasma infection.

Keywords: Toxoplasmosis, IgM, IgG, Chemiluminescence

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Poster Presentation

A-10-236-2

The Effect of Adaptive Sustainability Care Model on Readmission in patients with COPD: A Randomized Clinical Trial

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Objective: Readmission is one of the problems in patients with COPD. Adaptive sustainability model is one of the nursing models effective in reducing readmission of patients. Therefore, this study aimed to determine the effect of Adaptive Sustainability Care Model on the readmission of patients with COPD.

Material and Methods: This study is a clinical trial conducted on patients with COPD in Ilam, Iran in 2016. Patients were randomly assigned into two groups: test (40) and control (40) groups. The control group received the previous routine care. Adaptive sustainability model was performed for patients in test group in 4 steps as following: investigating the demographic characteristics of family, desensitization, collaboration and continuous monitoring during 6 months. The two groups were compared in terms of readmission after 6 months. The data were analyzed by SPSS 21.

Results: Results showed that before implementing Adaptive Sustainability Care Model there was no statistically significant difference between readmission of patients in test and control groups (P> 0.05). However, after intervention based on adaptive sustainability care model for test group, readmission of patients in the test group was significantly reduced compared to the readmission of patients in control group (P < 0.05).

Conclusion: Applying adaptive sustainability care model reduced admission of patients with COPD. So, Community Health Nursing are recommended to provide nursing care to patients in the care model.

Keywords: COPD, Adaptive sustainability care model, Readmission

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Poster Presentation

A-10-243-1

Crohn's Disease and Regulatory T Cell

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Objective: Crohn's disease is an idiopathic and progressive inflammatory disease of gastrointestinal tract. Regulatory T cell has a key role in autoimmune diseases. We evaluated regulatory function of regulatory T cells and IL-10, IL-35 concentration in co-culture supernatant.

Material and Methods: Purified $CD4^+CD25^+CD127^{low/-}$Treg and $CD4^+CD25^-$Treg cells were labeled with CFSE for assessing the suppressive capacity of regulatory T cells. The proliferation of $CD4^+$Tres cells was analyzed by flow cytometry based on CFSE signal. In addition, the amounts of IL-10 and IL-35 cytokines in culture supernatants were measured by ELISA assay after stimulation with anti-CD2/CD3/CD28.

Results: In this case-control study, 23 patients who clinically diagnosed with CD and 25 age, sex-matched healthy individuals as a control group were recruited. $CD4^+$ $CD25^+$ subpopulation was divided into two groups in basis of the Foxp3 expression for determining of $CD4^+$ $CD25^+$ T effector cells and $CD4^+$ $CD25^+$ T regulatory cells frequencies. The CFSE is distributed to division cells after CFSE-labeled cells proliferation. $CD4^+$ $CD25^+$ $CD127^{low}$ $FoxP3^+$ Treg cells in CD disease had shown that a significant difference in comparison with control (P =0.0404).

There was a significant difference in the secretion of IL-10 in response to anti-CD2/CD3/CD28 in comparison with HC (p= 0.0074).
Conclusion: The regulatory function of $CD4^+$ $CD25^+$ $CD127^{low}$ $FoxP3^+$ Treg cells indicate that have an important properties and therapeutic potential. We suggest that expansion and modulation of Treg cells in culture media will provide a mean for antigen specific control of unwanted immune reactions in CD patients.

Keywords: Crohn's Disease, Regulatory T cell, Autoimmunity
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Poster Presentation
A-10-362-1

Euphorbia Microciadia Stimulation of Lymphocytes and T Cell Modulation

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Objective: Immunomodulation using medicinal plants can provide an alternative to conventional chemotherapy for a variety of diseases, especially when the host defense mechanism has to be activated under conditions of impaired immune response. Euphorbia microciadia (Farfion in Persian) is a plant traditionally being used for various diseases in folk medicine. In the present study, we aimed to investigate the immunomodulatory effects of *E. microciadia* extract on lymphocyte activation in the presence and absence of mitogen and determine the cytokine secretion pattern of the treated lymphocytes.
Material and Methods: Human peripheral blood lymphocytes (PBLs) were stimulated with mitogen and then cultured in the presence of various concentrations of the butanol extract of the plant. BrdU incorporation assay was used for to analyze the activation of PBLs and T cell cytokines secretion was determined by ELISA.
Results: The plant extract increased the proliferation of PHA-treated lymphocytes. *E. microciadia* extract treatment of lymphocytes in the absence of PHA also resulted in an increased proliferation of the cells indicating the mitogenic activity of the extract (stimulation index; 4.9 ± 0.4 at 10 µg/ml). This extract had no effects on IL-4 production but stimulated lymphocytes to produce IL-17, which showed its possible effects on Th17 cells activation.

Conclusion: This extract had the ability to modulate T cell responses which would help to identify the underlying mechanism responsible for the beneficial of this plant for various infectious and/or immunodeficiency diseases.

Keywords: Immunomodulation*, Euphorbia*, lymphocyte activation
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Poster Presentation

A-10-431-1

The Effects of all-trans Retinoic Acid on Hyperglycemia-induced Activation of NF-κB and AP-1 Via RelA and c-Jun Gene Regulation

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Objective: All-trans retinoic acid (ATRA) participates in many important biological functions including inflammatory cascades in cells. In this investigation, we studied the anti-inflammatory aspect of ATRA, by following changes in gene expression of RelA and c-Jun – the subunits of NF-κB and AP-1 transcription factors.

Material and Methods: HepG2 cells were settled an overnight in high concentrations of glucose (30 mM) and insulin (1 μM) serum-free medium to mimic hyperglycemia and inflammatory circumstances. Then, cells were treated with 0. 1, 1, and 10 μM ATRA for 24h, 48 and 72h. RelA and c-Jun gene expression were assessed by using Real-time quantitative polymerase chain reaction (qRT-PCR).

Results: P65 expression were increased time dependently in response of hyperglycemia status and then, decreased dose dependently after 72h exposure with 10 μM ATRA ($p<0.005$). In addition, c-Jun expression were fluctuate increased in hyperglycemia exposure and then, decreased after 72h treatment with10 μM ATRA ($p<0.005$). Whilst, incubating whit 1 μM ATRA for 48h increased c-Jun expression ($p<0.005$).

Conclusion: Our results implied that ATRA could reduce NF-κB activity via P65 gene regulation. However, the effects on MAPK cascade via c-Jun expression is

depend on ATRA doses. This study would recommend cautiously ATRA as a preventive and therapeutic agent for inflammatory conditions.

Keywords: Inflammation, NF-κB; MAPK, C-Jun; P65, Hyperglycemia
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Poster Presentation

A-10-432-1

The Association of AIRE Polymorphism and the Susceptibility to MS in Iranian Population

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Objective: Multiple sclerosis (MS) is the most common cause of neurologic disability in young adults. Recently, the AIRE gene was identified as a genetic risk factor for several autoimmune diseases in genome wide association studies. The aim of this study was to further investigate the possible role of the AIRE gene in susceptibility to MS in Iranian population.

Material and Methods: A total of 112 MS patients and 94 ethnically matched controls were included in the study. The single-nucleotide polymorphism (SNP) (rs1800520) with a minor allele frequency >0.05 in the Caucasian population was selected and genotyped using HRM real-time PCR method.

Results: We found that AIRE SNP rs1800520 was significantly more frequent in the control group than in the MS patient group (46.8% vs. 32.14%, pc = 0.032, OR = 0.538278, 95% CI 0.305, 0.949). In addition, the frequency of the C8723G allele of rs1800520 was significantly higher among the control group than in the case group (37.77% vs. 25%, pc= 0.014). Regarding the distribution of the rs1800520 genotypes, a higher frequency of GG homozygous individuals was found in the control group (28.7% vs. 17.85%). Interestingly, mRNA transcribed on the rs1800520 SNP showed decreased free energy than the wild type suggesting that its increased stability may be responsible for the different activity of the polymorphic AIRE molecule.

Conclusion: This is the first study establishing a relationship between the AIRE gene and the susceptibility to MS in an Iranian population, suggesting the AIRE gene can be used in the predisposition and prognosis of MS in Iranian population.

Keywords: AIRE, Polymorphism, Multiple sclerosis, Iranian population, SNP
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Poster Presentation

A-10-436-1

Study of Th1/Th2 Balance in Patients with Autoimmune Hepatitis

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Objective: Autoimmune hepatitis (AIH) is a relapsing inflammatory disease. AIH is driven by distribution of Th1 and Th2 balance that causes elevated transaminase, circulating autoantibodies and level of immunoglobulin G. In this study, to investigate the immunopathogenic mechanism of autoimmune hepatitis, we determine the mRNA gene expression levels of IFN-γ and T-bet as regulator of Th1 differentiation pathway and IL-4 and GATA3 as regulator of Th2 differentiation pathway in T cell lineage decisions.
Material and Methods: Twenty new-case patients with autoimmune hepatitis and twenty controls were enrolled. Relative quantification of IFN-γ, T-bet, IL-4 and GATA3 in peripheral mononuclear cells were measured using real-time polymerase chain reaction.
Results: We demonstrated that in comparison with the control group, expression of transcription factor associated with Th1 (T-bet) and IFN-γ were significantly up-regulated in patients, whereas mRNA expression levels of IL-4 and GATA3 did not show significant difference between two mentioned groups.
Conclusion: This study results identify Th1/Th2 imbalance in autoimmune hepatitis patients and show that AIH is a Th1 predominant state, thus by targeting regulation elements of T cells differentiation pathway, the new therapeutic way can be suggested for cure and disease control.

Keyword: Autoimmune hepatitis, Th1/Th2, Real-time PCR, Differentiation pathway

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Poster Presentation

A-10-437-1

Study of Expression Rate of OX40 Gene in Peripheral Blood in Patients with Parkinson's Disease

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Objective: Parkinson's disease is a common neurodegenerative disease that mainly affects central nervous system (CNS) and consequently motor system. Inflammation of immune system and CNS has been known as an important predisposing factor for Parkinson's disease. OX40 protein (CD134) is from family of tumor necrosis receptors that acts on T cells surface. Increased expression of this protein has been known as a factor for increase in inflammation and initiation of NF-kappaB signaling pathway in different diseases. This study investigates OX40 gene expression in the patients with Parkinson's disease.

Materials and Methods: 20 people with Parkinson's disease and 20 healthy people, as controls, were enrolled in the study. Measurement of OX40 gene expression was conducted by real-time PCR.

Results: The mean expression rate of OX40 gene in the patients increased compared to the controls yet *in*significantly ($p>0.05$).

Conclusion: The expression of this gene could be helped develop new treatment and prevention approaches through suppression of OX40 gene and OX40L interaction. However, additional clinical, cellular, and interventional studies should be conducted to confirm the treatment approaches.

Keywords: Parkinson's disease, OX40, Autoimmunity, Neurodegenerative
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Poster Presentation

A-10-235-1

Comparative Study of Mast Cell's Recalling in Brain, Spinal Cord, Around of Injured Sciatic Nerve, and Plantar Region of Mail Rats, Following Plantar Injection of Formalin and Histamine

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Objective: This study was designed to determine the recalling of mast cells in the brain, spinal cord, sciatic nerve and plantar surface of hindpow skin in intact and sciatic nerve ligated rats after intraplantar injection of normal saline, histamine 5% and formalin 5%.

Material and Methods: In this study 48 male rats used in two phases (ligated and non-ligated), four groups in each of them. One hour after injection, the animals were killed and histological sections were taken from the skin of plantar surface of the hindpow, sciatic nerve, spinal cord and brain, and then stained with tuloidin blue method. Distribution of mast cells were counted using a latticed lens device in 1mm². Data were analyzed by Factorial Anova and Duncan's test.

Results: The number of mast cells in the above mentioned tissue sections, except of spinal cord sections, in the sciatic nerve injured rats were significantly ($P<0.05$) higher than those of intact rats. Mean distribution of mast cells of sciatic nerve in ligated rats and injected with formalin 5% compared to histamine 5%, were increased significantly($P<0.05$).

Conclusion: It is concluded that in the presence an injury in the peripheral nerves, the number of mast cells increase in response to histamine and formalin.

Keywords: Mast cells, Plantar skin, Nervous system, Histamine, Formalin
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Other

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Oral Presentation

A-10-430-1

Chronic Cough

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Objective: Chronic cough is one of the most common causes of absence from school, education and disturbances in ordinary works. According to its high prevalence in our population and lack of study (ies) about this in our country, this study has been performed to estimate chronic cough preformed, to estimate chronic cough prevalence and determinate its relations to variables such as age, sex, location, parent's education and smoking.

Materials and methods: This descriptive analytic cross- sectional study has been performed on 3222 students of primary school during 1379-80. Date was acquired by interview, completion of questionaries' and sanitary service records. Then information became analyzed and tested by person chi-square test if needed.

Results: Findings showed that the prevalence of chronic cough in our population was 3.6% (3.5% male and 3.8% female). Among 3222 students, 1748 (962 male and 786 female) subjects were from urban and 1474 (719 male and 755 female) rural population. 118 cases had chronic cough in urban population the prevalence was 4 percent (3.2% male and 4.7% female) and in rural population 3.2% (3.6% male and 2.9% female). Among 118 involved students, 60 cases had a smoker father (50.8%) and among 3104 others, 1438 cases had a non-smoker father (46.3%).

Conclusion: Our finding showed that sex, age location smoking and parent's education had relation to chronic cough of students. So we decide that for reducing the chronic cough prevalence in our society especially primary school ones. Health and sanity education planned and distributed in a wide array to diagnostic modalities and appropriate therapeutic plans for reduction of chronic cough complication.

Keyword: Chronic cough, Prevalence, Pediatric

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Poster Presentation

A-10-357-2

Comparison the Immunogenicity of HPV16-E7d Vaccine Formulated in Montanide ISA 266 and Imiquimod in C57BL/6 Mouse Model

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Objective: Cervical cancer is the second most common cancer in women worldwide and the human papillomavirus (HPV) is known as the main risk factor for the development of this disease. About 200 types of HPV have been identified and 100 species of genome has been completely sequenced. In order to Increasing the immunogenicity of therapeutic vaccines against cancers caused by HPV, activation of immune cells through Toll-like receptors (TLRs) has been known as a key issue in the development of vaccines. Therefore, in this study for the first time effect of immunization subcutaneous injection imiquimod as agonist of both TLR7 and TLR8 and also oil adjuvant Inducer of cellular immunity, Montanide ISA 266, were evaluated in C57BL/c mice.

Materials and Methods: Recombinant pET28a / E7d plasmid transformed into E. coli BL21 and then recombinant E7d protein was expressed using 1mM IPTG and was purified using Ni-NTA column. Recombinant protein expression was confirmed by SDS-PAGE and Western blot. The purified protein was dialyzed and protein concentration was evaluated by the Bradford method. Female C57bl/c mice were vaccinated subcutaneously, three times at 2-week intervals with 10 µg of E7d protein mixed in 20 µg of imiquimod or emulsified in Montanide ISA 266 (E7d: Montanide ISA 266 with a ratio of 30:70) or E7d alone with proper control groups. Two weeks after the last injection, the mice sera were collected and stored at -20◦C until use. Total IgG, IgG isotype antibodies, IFN-γ and IL-4 cytokines by ELISA and lymphocyte proliferation assay was done using BrdU/ELISA method.

Results: the E7d-imiquimod vaccine Led to increase of IFN-γ cytokine and The dramatic proliferation of spleen lymphocytes than group vaccinated with E7d. In addition, recombinant E7d protein emulsified in Montanide ISA 266 induced both cellular and humoral immune responses in mice compared to E7d only, although imiquimod containing vaccine showed a much more successful performance in the induction of Th1 pattern.

Conclusion: It seems formulation of E7d-imiquimod vaccine is a good strategy to achieve Th1 immune platform as a necessity for therapeutic HPV vaccines.

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Poster Presentation

A-10-458-1

Evaluation of Relationship between Mast Cells Infiltration Rate in Prostatic Adenocarcinoma with Gleason's Grading Compared to Benign Prostatic Hyperplasia

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Objective: Prostate cancer is one of the common urologic cancers and role of Mast cells in its prognosis or targeting them for cancer treatment, have been studied in several studies. Gleason's grading system is used to indicate the degree of tumor cell differentiation in histopathologic studies. We conducted this study to evaluate Mast cells' presence in prostate adenocarcinoma related to Gleason's score, age, perineural and vascular invasion and comparing the results with benign prostatic hyperplasia (BPH) specimens.

Materials and Methods: Hematoxylin-Eosin and Toluidine blue stained slides of prostatic adenocarcinoma and 51 benign prostatic hyperplasia specimens were evaluated and the data were analyzed with SPSS 20.

Results: The age mean was 74.88±8.35 years in adenocarcinoma group and 68.64±11.94 years in BPH group. Gleason's score was 6 in 2(4%), 7 in 6 (12%), 8 in 14 (28%), 9 in 19 (38%) and 10 in 9 (18%). Perineural invasion was seen in 11 (22%) and vascular invasion in 1 (2%). Mast cells infiltration mean in extratumoral areas was 12.3±1.59, in intratumoral areas was 4.7±0.85 and in BPH it was 14.86±1.56. Intratumoral mast cell numbers were less than extratumoral areas (p=0) and less than BPH (p=0), but there was no statistically significant difference between extratumoral mast cells and BPH (p=0.12). Mean number of intratumoral and extratumoral mast cells in Gleason's score ≤7 was greater than for Gleason's scores more than 7 (p=0.006 and p=0.05 respectively). Mast cell infiltration was not related to age of patients, vascular invasion, and perineural invasion.

Conclusion: In Our study, the age range and Gleason's scores were higher than similar studies which indicates the need for screening methods of prostate cancer. Several studies showed different results such as positive correlation of mast cell numbers with Gleason's score, no relationship between them, negative and positive relationships between mast cell numbers and small vessel density, and

favorable and poor prognoses of prostate cancer in high mast cell numbers. So, it is concluded that before using mast cells as treatment targets, further studies are needed to prove their exact roles in tumor progression or inhibition.

Keywords: Mast cell, Prostate adenocarcinoma, Benign prostatic hyperplasia, Gleason's grading

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Poster Presentation

A-10-99-1

Down-regulation of Matrix Metalloproteinase-9 Activity by Spearmint in a Human Monocytic Cell Line

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Objective: Spearmint is a medicinal plant with antioxidant and anti- inflammatory activities. MMP-9 (matrix metalloproteinase-9) is an enzyme degredates the extracellular matrix and has an essential role in airway inflammation and inhibition of lung tissue repair in asthma. In this study effect of spearmint aqueous extract on MMP-9 activity in human immunocompetent cells has been evaluated in vitro.

Materials and methods: Human monocytic THP1 cells were cultured in complete RPMI medium. Next, the cells at logarithmic growth phase were incubated with different concentrations of spearmint aqueous extract (0.05 – 10 mg/ml) in the presence of PMA (phorbol 12-myristate 13-acetate) for 48 hours. Then the culture supernates were collected and MMP-9 activity was assessed by gelatin zymography.

Results: Spearmint aqueous extract significantly decreased MMP -9 activity in PMA- stimulated THP1 monocytic cells dose-dependently.

Conclusions: Our results showed that spearmint aqueous extract down-regulates MMP-9 activity in human monocytic THP1 cells. Regarding that MMP-9 is an inflammatory mediator, inhibitory effect of spearmint on pulmonary inflammation and damage may be partially due to its suppressive effect on MMP-9 activity. Furthermore, as MMP-9 has an inhibitory effect on tissue repair, spearmint with suppressive effect on MMP-9 may be useful in bronchial tissue

repair and so a therapeutic candidate for asthma in which MMP-9 is overexpressed. Additional studies on the effect of locally exposure of spearmint on MMP-activity in immunocompetent cells are required.

Keywords: Spearmint, MMP-9, THP1 cells
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Poster Presentation

A-10-373-1

The Level of miR-146a and miR-155 in PBMCs of SLE Patients are Significantly Higher than Healthy Control

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Objective: Systemic Lupus Erythematosus (SLE) is a multi-organ autoimmune disease characterized generation of autoantibodies to components of the cell nucleus. SLE typically involves women in childbearing age. The pathogenesis of SLE is contributed by together genetic factors and epigenetic modifications that arise from disposal to the environment. Epigenetic factors such as modifications of microRNAs (miRNAs) interact with genetic programs to regulate immune responses. MicroRNAs are a group of small and noncoding RNAs which regulated gene expression at the post-transcriptional level by degrading or blocking translation of mRNA. MicroRNAs play key roles in the pathogenesis of various autoimmune diseases including SLE. Among the recognized miRNA species, miR-146a and miR-155 have reported being important regulators of the immune system. Therefore, we investigated the levels of miR-146a and miR-155 in the peripheral blood mononuclear cells (PBMCs) of SLE patients compared with the control group.

Material and Methods: A total of 30 SLE patients and 30 healthy controls were enrolled in this study. PBMCs were isolated from whole blood by Ficoll gradient

centrifugation. Then, total RNA containing miRNAs was extracted using trizol method. cDNA was synthesized and the level of gene expression of miR-146a and miR-155 were analyzed by TaqMan probe Real-Time PCR method.
Results: results showed that miR-146a was reduced and miR-155 was increased in SLE patients compared with healthy control. The level of gene expression of the miR-146a and miR-155 in patients with SLE were more significantly higher than that in healthy controls.
Conclusion: Our results showed that the level of miR-146a and miR-155 in PBMCs significantly correlated with disease activity in SLE patients and their level could be used as potential markers for disease activity. miR-146a and miR-155 play important roles in the pathogenesis of SLE and it is clear that miRNAs are emerging as potential targets for new therapeutic strategies in the treatment and prevention of SLE.

Keywords: MicroRNA 146a, MicroRNA 155, Systemic Lupus Erythematosus, Autoimmunity
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Poster Presentation
A-10-134-4

Transforming Growth Factor- α Gene Expression and AST, ALT and Lipase Serum Levels Changes in Response to 8 Weeks Resistance Training

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Objective: The aim of this study was to investigation of transforming growth factor- α gene expression and AST, ALT and lipase serum levels changes in response to 8 weeks resistance training.
Material and Methods: Totally 26 healthy non-active men (age: 35-55 years, BMI: 25.52 K/m^2) were volunteered in this study and randomly divided into control (n=13) and exercise (n=13) groups. The exercise group performed eight weeks resistance training (30 min/day, 3 days/week) by 65% (1RM) on the first weeks until 85% (1RM) on the end of 8 weeks. Body composition, BP, blood samples and

transforming growth factor-a gene expression were measured in basal conditions and 48 hours after the training program. Bio Easy Master Mix Kit and Real-time PCR method used for TGF- α gene expression, ELISA method for analyzed of IL-6, IL-12 and standard laboratory methods used for white blood cell counts. Our data have been analyzed by independent t-test on SPSS software version 23.

Results: The result showed that TGF- α gene expression in the exercise group compared to control group showed a significant reduction after 8 weeks exercise training ($p<0.001$). However, AST, ALT and Lipase serum levels in the exercise group compare with control group after 8 weeks resistance training didn't have significant changes ($p>0.05$).

Conclusion: It seems that resistance training by entering less pressure and less damage on liver membranes causes to reduction of TGF- α gene expression as an inflammatory marker and stabilize lipase secreted that finally it decreases the release of AST and ALT to blood as a liver damage indexes.

Keywords: **TGF- α, Resistance training, Liver enzymes, Gene expression.**

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Poster Presentation

A-10-134-3

Interval Training and Honey Supplementation: Response of Men's Immune System and Inflammatory

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Objective: It is established that inflammation is linked to the process of most diseases which may influence the immune system. Therefore, the aim of this study was the study of response of men's inflammatory and immune system markers to HIIT training with honey supplementation.

Material and Methods: Healthy non-active men (n=38) were randomly assigned into 4 groups: 10 EX+H, 10 EX+P, 10 H and 8 P (EX = exercise, H = honey supplementation, and P = placebo). Exercise training consisted of intervals of 2 minutes running at the intensity of 70 of HR_{max} and 1-minute

active rest lasting for 50 minutes. EX+H and EX+P performed HIIT training for 8 weeks. Before and 24 hours after the experimental period blood samples were taken to be analyzed levels of IL-6 and IL-12 and white blood cell counts. Our data have been analyzed by Paired *t*-test, Two-Way ANOVA, LSD post-hoc test.

Results: The results of the present study showed that 8 weeks high intensity intervals training combined with honey supplementation significantly reduced IL-6 levels ($P<0.05$). However, the interventions had no significant effect on IL-12 and white blood cell counts ($P>0.05$).

Conclusion: Although we observed that HIIT training along with honey consumption had no remarkable effect on circulatory levels of IL-12 and white blood cell subgroups, based on the changes in serum levels of IL-6 we concluded that the combination of this combined intervention may have the potential to modify inflammation.

Keywords: HIIT, Sedentary, Supplementation, Inflammation.

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Poster Presentation

A-10-134-10

HSP70 mRNA Expression as an Immune Response Changes under Effect of Moderate Intensity Aerobic Exercise

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Objective: Heat shock proteins 70 play a significant role in the immune response. Therefore, the purpose of this study was to investigate the response of men's heat shock protein 70 gene expression under the effect of moderate intensity aerobic exercise.

Material and Methods: 21 subjects randomly divided into two groups of moderate intensity aerobic exercise (n=10) and control (n=11). Moderate intensity aerobic exercise group were performed exercise training on the treadmill with intensity of 55 to 70 percent of maximum heart rate reserve, 8 weeks, 3 sessions per week at zero slope and minimum temperature of 22 ° C. To measure HSP70 mRNA, Real-time PCR method was used. Data Analysis was used paired samples t-test and two-way ANCOVA.

Results: The results indicated that HSP70 mRNA 24 hours after the 8-week aerobic exercise training in comparison with control group and basal levels had non significantly increased (P=0.94).

Conclusion: Moderate intensity aerobic exercise leads to an insignificant increase in the HSP70 gene expression that plays significant role in the immune response in defending against diverse environmental threats or stresses.

Keywords: Immune, Stress, Exercise, Gene expression

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Poster Presentation

A-10-131-1

Recovery of Type-1 Diabetes Using Tolerogenic Dendritic Cells Produced by CD40 Molecule Inhibition Through-RNA Interference (RNAi)

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Objective: T1D is an autoimmune disease that results from autoimmune destruction of insulin-producing β-cells by T lymphocytes. Generation of Novel methods of tolerogenic dendritic cells (TDCs) such as use of lentiviral vector have been developed to control self-reactive T cells and recover of diabetic parameters in patients.

Materials and Methods: Lentivirus vector production was achieved by GIPZ mouse CD40 shRNA, psPAX2 and pMD2G plasmids DNA. Purified bone marrow derived DCs were treated with CD40 shRNA and the expression of CD40 and mRNA level was evaluated by flow cytometry and Real Time PCR, respectively. CD40 down-regulated DCs were injected into STZ-induced diabetic mice. Blood glucose; glucose tolerance test and weight were analyzed in DCstreated mice.

Results: Mice treated with CD40 shRNA transfected DCs, showed considerable differences in blood glucose, glucose tolerance, and weight, compared to other groups. Cytokine assays also indicated an increase in IL-13 production level in CD40 shRNA received group.

Conclusion: In streptozotocin induced diabetic mice model, administration of TDCs could recover diabetic parameters.

Keywords: Tolerogenic Dendritic Cells, CD40, Lentiviral vector, Type1 diabetes
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Poster Presentation

A-10-238-1

Differentiation of Non-adherent Bone Marrow Cells to Mast Cells by Supernatant of Spleen Cells Culture Medium in Rat

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Objective: Mast cells are connective tissue cells that mostly known for their role in allergic and other inflammatory disease. They play important role in immediate allergic reactions and inflammatory responses. There are evidences illustrating the involvement of these cells in other numerous physiological and pathophysiological reactions. The aim of the present study was to establish a simple and affordable method for the differentiation and culture of murine mast cells from rat bone marrow.

Materials and Methods: Mast cells were generated from bone marrow of 10-15 weeked aged male mice based on a modified method change of the tissue culture flasks from 75-cm^2 to 25-cm^2 via supernatant of the spleen cell culture medium. The granularity of the mast cells was determined using toluidine blue staining. Mast cells were characterized and analyzed using Mast Cell Tryptase Antibody and CD 117, CD 34. Tryptase activity was present only in mast cell. It is helpful method to distinguish the activation of mast cell from other cells as neutrophils.

Results: Mast cells were generated from bone marrow of male rat. The cells were positive for Mast cell-related antigens for each of CD117 and Tryptase, and negative for CD34.

Conclusions: In the present study change of the tissue culture flasks from 75-cm2 to 25-cm2 ended up more dense arrangement of the cells and subsequently the effect of the secreting factors like IL4, IL3 and SCF was enhanced and improved.

Keywords: Mast cell, Bone marrow, Cell isolation, Supernatant, Rat
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Poster Presentation

A-10-134-6

High-Intensity Interval Training / Resistance Exercise Lead to Greater Lung Function: Improvement of FEV_1/ FVC% and FEF25-75%

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Objective: The role of exercise on respiratory system and prevention of diseases is notable. So the purpose of this study was to investigate the effects of two different exercise modalities on some spirometry parameters in sedentary men.

Material and Methods: Participants were aged from 40 to 50 years. They were classified into one of three groups RT (n = 12, 60 min/day, 3 days/week by 60% - 90% of 1RM for 8 weeks), HIIT (n = 12, 30 min/day, 3 days/week at 60-90% of heart rate reserve for 8 weeks) and non-exercise (NON-EX, n = 12). They performed spirometry test (FEV1/ FVC% and FEF 25-75%) following guidelines for standardized spirometry.

Results: The result showed that FEV_1/ FVC% in HIIT group ($p<0.001$) and RT group ($p<0.04$) compared to NON-EX group increase significantly. Also FEF 25-75% showed a significant increase after 8 weeks HIIT ($p<0.001$) and RT ($p<0.04$) program.

Conclusion: Improving of FEV1/FVC% and FEF25-75% as pattern of pulmonary function provides the lowest risk of asthma and other respiratory system disorders.

Keywords: Exercise, Pulmonary function, Middle-aged men.
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Poster Presentation

A-10-428-1

CD26 Could be a Surface Marker to Identify the Memory Regulatory T Cells

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Objective: CD26 is a surface molecule that originally found on T cells. In the immune system it has been considering as activator and regulator marker. It is expressed mainly on Th-17, Th-1 and Th-2, however, it is negative or low on the regulatory T cells (Treg). In this study, we aimed to investigate the CD26 expression on memory Treg cells.

Material and Methods: 20 ml peripheral blood was taken from 5 healthy subjects. After isolation of PBMC, memory regulatory T cells were separated by MACS (Miltenyi Biotec). The cells were cultured and stimulated with anti CD3 and anti CD28. Then, the cells were stained for CD25 and CD26 and also Foxp3. The samples were acquired on flow cytometry and data were analyzed by FlowJo 7.6.

Results: At the first, we evaluated the stimulated memory CD4+ T cells considering CD26 expression. At least, 250000 events were analysed. After gating the memory lymphocytes according to forward (FSC) and side (SSC) scatter properties, CD26 expression was analyzed. In that regard, gated cells were divided into two categories: 1: CD26 -/low that were considered to harbor the regulatory T cells and 2: CD26hi. Then the subsets were evaluated for Foxp3 and CD25 expression. *Mean* of percentages ± *SD* of the CD26-/low and CD26hi subsets were 89.5± 3 and 10 ± 3, respectively. The *Mean* of percentages ± *SD* of CD26 -/low CD25 + foxp3+ cells were 19.3 ± 5 whereas the majority part of CD26 hi cells were CD25+ foxp3+ (51.3 ± 3.4). When the memory T cells were gated based on Foxp3hi and CD25 hi, we found the surprising result. In both states, the CD26 hi cells were seen in the gated population.

Conclusion: Taken together, our results showed that gating the cells just base on CD26 expression does not guaranty to have the pure Foxp3hi and CD25 hi Treg cells. On the other hand, gated cells using Foxp3hi and or CD25 hi may be contain

the CD26 hi cells. This results need to further investigation to exactly determine the nature of CD26hi cells in the Foxp3hi and CD25 hi populations.

Keywords: Regulatory T cells, Foxp3, CD26

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Poster Presentation

A-10-134-2

Effects of Honey Supplementation on Non-active Men's white Blood Cell Subgroups Counts and TNF-α levels during 8 Weeks of High Intensity Interval Training

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Objective: Physical activity has numerous effects on the immune and inflammatory system. The aim of present study was to investigate the response of immune and inflammatory system during 8 weeks HIIT training and honey supplementation in sedentary individuals.

Material and Methods: Thirty-eight healthy non-active men participated in this study. The participants were randomly divided to Exercise + Honey (EX+H, n=10), Exercise + Placebo (EX+P, n=10), Honey (n=10) and Placebo (n=8) groups. Exercise group performed intervals running (50 min/day, 3 days/week at 70 of HR_{max}) for 8 weeks. Besides, subjects consumed 5ml/kg of either %13 honey-containing fluid or placebo 1 hour before every exercise session. Before and 24 hours after the experimental period blood samples were taken to analyze of TNF-α levels and white blood cell counts. Our data have been analyzed by Paired *t*-test, Two-Way ANOVA, LSD post-hoc test on SPSS software 23version.

Results: The results of the present study showed that 8 weeks HIIT training combined with honey supplementation had no significant effect on white blood cell counts and levels of TNF-α ($P>0.05$).

Conclusion: The result showed that HIIT training along with honey consumption had no remarkable effect on circulatory levels of TNF-α and white blood cell subgroups.

Keywords: HIIT, Honey¸ Non-active men.
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Poster Presentation

A-10-134-9

Respiratory Indexes and Inflammatory Marker Change by Different Exercise Training

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Objective: Increased levels of inflammation disturbed the function of the respiratory system. So the aim of this study was to investigate the effects of eight weeks High-intensity interval training and resistance training on lung function and inflammation status.

Material and Methods: Healthy non-active men (n=36) were randomly assigned into 3 groups: RT (n = 12, 60 min/day, 3 days/week by 60% -90% of 1RM for 8 weeks), HIIT (n = 12, 30 min/day, 3 days/week at 60-90% of heart rate reserve for 8 weeks) and non-exercise (NON-EX, n = 12). TGF-α serum levels, Blood Pressure were measured in basal conditions and 24 hours after the end of training program.

Results: TGF-α serum levels in the HIIT and RT groups compared to NON-EX group showed a significant reduction after ($p<0.001$). Also FEV1/FVC% and FEF 25-75% showed a significant increase after HIIT ($p<0.001$) and RT ($p<0.04$) period. A significant negative relationship was observed between TGF-α serum levels and FEV1/FVC% and FEF 25-75% in the HIIT ($r_=$ -0/714 $p_=$ 0/010) and RT ($r_=$ -0/648 $p_=$ 0/018) groups after period training.

Conclusion: Reduction of TGF-α serum levels as inflammatory cytokines can be a sign of reduced secretion by alveolar macrophages that finally prevent the respiratory system injury and improve lung function in middle-aged men.

Keywords: Macrophages, Immune, Respiratory, Exercise
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Poster Presentation

A-10-233-1

Effect of Chloroquine on Autophagic Process in PBMCs of Chronic HCV Patients

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Objective: Hepatitis C virus is a main cause of progressive and chronic liver disease such as hepatitis, cirrhosis and hepatocellular carcinoma which resulted in global health concern. There are 170 million people infecting HCV in the world. Autophagy is a catabolic process،degrading damaged organelles and cellular components for recycling. There are conflict reports about the role of autophagy in production of cytokines in viral infection. It may depend on the type of virus and the type of infected cells. However, it has been reported that in HCV infected cells, dysfunction of autophagy led to enhancement in some products of native immunity factors such as interferon-α. HCV has been shown to induce autophagy to increase viral growth in vitro. Pharmacological inhibition of autophagic process remarkably inhibited expression level of HCV replicon. In this study we examined the impact of autophagy inhibition by chloroquine،a lysosomal acidification inhibitor،on IFNα mRNA expression and HCV replication in PBMCs.

Material and Methods: Immediately after blood collection from HCV positive patients who have chronic HCV genotype1a before treatment the PBMCs were separated from whole blood by centrifugation on a Ficoll-Hypaque density gradient. The same number of normal samples were tested as controls. The cells were cultured in RPMI medium and incubated with 50µgr chloroquine. MTT assay was applied to indicate the dose of chloroquine that has minimum cytotoxicity for cells. After 72h, viral RNA was extracted. The real-time PCR was carried out after a reverse transcription step. The result had been analyzed by REST software.

Results: The use of CQ for inhibition of autophagy in infected PBMCs with HCV resulted in a decrease amount HCV mRNA with an increase in IFNα mRNA expression. These results indicated that chloroquine may consider as a complementary new anti-HCV agent that targets the autophagic proteolysis.

Conclusion: Inhibition of autophagy may be a new therapeutic strategy for HCV treatment. CQ (chloroquine), inhibits autophagy in infected PBMCs and led to increase of IFNα mRNA expression. This increase has an inhibitory effect on HCV

replication. These findings imply that chloroquine effectively impairs the function of autophagy in our experiment.

Keywords: HCV،Autophagy،IFNα،Chloroquine

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Poster Presentation

A-10-134-8

The Relationship of FEV_1/ FVC%, FEF25-75% with Transforming Growth Factor- α mRNA Expression in Response to 8 Weeks of HIIT and RT Training

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Objective: There is a close relationship between growth factors of bronchial cells and respiratory system function. Therefore, the purpose of this study was to investigate the relationship between FEV1/FVC%, FEF25%-75% with Transforming Growth factor-α mRNA expression response to 8 weeks of high intensity exercise training (HIIT) and resistance training (RT).

Material and Methods: Totally 36 healthy non-active men (age= 40-50 years, VO2max: 34.8ml/kg/min) participated in this study. They were classified into one of three groups RT (n = 12, 60 min/day, 3 days/week by 60% -90% of 1RM for 8 weeks), HIIT (n = 12, 30 min/day, 3 days/week at 60-90% of heart rate reserve for 8 weeks) and non-exercise (NON-EX, n = 12). Participants' blood samples, vo_2max, TGF-α gene expression and spirometry parameters including FEV1/ FVC% and FEF 25-75% was measured 24 hours before and after the HIIT and RT. Bio Easy Master Mix Kit and Real-time PCR method used for TGF-α gene expression.

Results: TGF-α gene expression in the HIIT and RT groups compared to NON-EX group showed a significant reduction after 8 weeks training period ($p<0.001$). In addition, FEV1/FVC% and FEF 25-75% showed a significant increase after 8 weeks HIIT ($p<0.001$) and RT ($p<0.04$) program. A significant negative relationship was observed between TGF-α gene expression and FEV1/FVC% and FEF 25-75% in the HIIT and RT groups after period training ($r_=$ -0/672 $p_=$ 0/012, $r_=$ -0/612 $p_=$ 0/019).

Conclusion: HIIT and RT by reduction of TGF-α gene expression probably prevent from increasing the diameter of bronchial cell walls and narrowing of the bronchioles, which helps to improve the functioning of the respiratory system.

Keywords: Respiratory, Exercise, Gene expression
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Poster Presentation

A-10-399-1

Archaeosomes as Adjuvante and DNA Vaccine Nanodelivery Systems for Human Papillomavirus

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Objective: A main goal of modern vaccinology is to emulate the efficacy of such live vaccines with suitable adjuvant end, defined acellular vaccines. Therefore, the success of cancer vaccines depends on identification of specific antigenic targets and the ability to evoke a strong and appropriate immune response. Nanoparticulate carriers provide adjuvant activity by enhancing antigen delivery or by activating innate immune responses. The nanovesicles such as archaeosomes have become important carrier systems. Archaeosomes are prepared from archaeal glycerolipids which show great adjuvant activity and capability to promote both Th1 and Th2 response with long memories and can be used in drug, gene and vaccine delivery. Among therapeutic HPV vaccines, DNA vaccines have emerged as a potentially promising approach due to their safety profile, simplicity of preparation and stability. In this study, archaeosomes are prepared from polar lipid of the Halobacterium salinarum and the formulation of the E6/E7/L1 chimeric gene with archaeosome as a Human papillomavirus (HPV) vaccine candidate and examined in tumor mice model.

Material and Methods: The recombinant pIRES2- E6/E7/L1 chimeric plasmid of HPV were multiplied in a DH5α strain of Escherichia coli and purified using a modification of alkaline lysis maxi-preparation. Archaeosomes prepared with total polar lipids of Halobacterium salinarum by the method of Bligh and Dyer. The formation of the archaeosome-pDNA complex was achieved by the addition of plasmid DNA to archaeal lipid solution and the mixture was kept at room

temperature for several hours to allow complex formation to take place. Particle sizes and zeta potential of the samples was measured using dynamic light scattering [Zetasizer Nano ZS (Malvern Instruments)]. After development of tumor by administration of TC-1 cells in C57BL/6 mice, relative tumor volume measurements were carried out.

Results: Results showed that Archaeosome containing E6/E7/L1 chimeric gene significantly inhibit the rate of tumor growth in comparison with control groups.

Conclusion: In general, due to the suitable inhibitory effect of archaeosome-pDNA complex in reduction of tumor size, they can be considered as a good therapeutic strategy and may be a promising candidate for development of therapeutic vaccine against HPV-16 cancers.

Keywords: Adjuvant, Archaeosomes, DNA vaccines, HPV

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Poster Presentation

A-10-293-3

Henoch-Schonlein Purpura and Unusual Face Involvement

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Objective: Henoch-Schonlein purpura (HSP) is a leukocytoclastic vasculitis, which is the most common vasculitis in children 3-9 years old. It is benign and self-limited disease with involvement of multiple organs such as; skin, gastrointestinal, renal and joints. Cutaneous manifestation in upper and lower extremities often presents in all patients with HSP. We report a case of HSP with unusual involvement on the face.

Case presentation: A 6- year -old boy referred to the Pediatric hospital with purpuric, pruritic rashes in upper and lower extremities for 2 weeks. He had also bloody stool and abdominal pain from 3 days ago. On physical examination he had painless purpuric palpable on face, mostly on bilateral maxillary, mandibular regions and ears. After diagnosis of HSP by clinical manifestations and normal laboratory findings, treatment with corticosteroids for bloody stool began and his symptoms subsided.

Keywords: Henoch-Schonlein purpura, Face rash, Children
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Poster Presentation

A-10-134-1

IL-6 and IL-12 Levels in Response to Honey Supplementation Combined With HIIT Training in Sedentary Individuals

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Objective: The aim of this study was investigation of the effects of 8 weeks high intensity interval training combined with honey on some acute and chronic inflammatory indices in sedentary individuals.

Material and Methods: 38 inactive male subjects were randomly assigned to 4 groups: Exercise + Honey (EX+H, n=10), Exercise + Placebo (EX+P, n=10), Honey (n=10) and Placebo (n=8). The exercise groups were performed at 4 days/week and honey was given at a dosage of 5ml/kg of either %13 honey-containing fluid or placebo 1 hour before every exercise session for 8 weeks. Before and 24 hours after the experimental period blood samples were taken to be analyzed for circulatory levels of IL-6 and IL-12. Paired *t*-test and Two-Way ANOVA were used to analyze the data at a significance level of $P<0.05$. Inter-group differences indicated by ANOVA, LSD post-hoc test was applied to determine the difference.

Results: High intensity interval training reduced IL-6 levels in EX+H group ($P<0.05$). However, the interventions had no significant effect on other inflammatory indices ($P<0.05$).

Conclusion: The result showed that HIIT training leads to reduction of IL-6 levels as a pro-inflammatory cytokine that eventually reduces inflammation levels.

Keywords: Inflammations, Exercise, Supplement
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Poster Presentation

A-10-114-1

Roles of Micro RNA in Metastatic Breast Cancer

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Objective: MicroRNAs (miRNA) are a subclass of non-coding RNAs which is an endogenous regulator of the cellular transcriptase. Deregulations in miRNA expression contribute to a large number of human diseases including cancer. Breast cancer responsible for a majority of female mortality due to cancer. One of the primary reasons for this high mortality rate could be the inadequacy of current disease diagnostic techniques which intensifies the importance of developing advanced screening and diagnostic techniques. Therefore, the aim of this review is to summarize major roles of miRNAs in breast cancer development and its potential clinical applications in this regard.

Materials and Methods: Urinary miRNA expression levels of nine BC-related miRNAs (miR-21, miR-34a, miR-125b, miR-155, miR-195, miR-200b, miR-200c, miR-375, miR-451) from 24 untreated, primary BC patients and 24 healthy controls were quantified by Real time-PCR. The receiver operating characteristic analyses (ROC) and logistic regression were calculated to assess discriminatory accuracy.

Results: Significant differences were found in the expression of four BC-associated miRNAs quantified as median miRNA Expression levels. Urinary miR-155 levels were significantly higher in BC patients compared with healthy controls (1.49vs.0.25; $p < 0.001$). In contrast, compared to healthy controls, BC patients exhibited significantly lower urinary expression levels of miR-21 (2.27vs.5.07; $p < 0.001$), miR-125b (0.71vs.1.62; $p < 0.001$), and miR-451 (0.02vs.0.59 $p = 0.004$), respectively. In ROC, including all miRNAs as well as the group of the four significant deregulated miRNAs separated BC patients from healthy controls with a very high (area under the receiver operating characteristic curve [AUC] = 0.932) and high accuracy (AUC = 0.887), respectively.

Conclusion: We could detect distinct BC-dependent urinary miRNA profiles. The expression levels of four urinary miRNAs were specifically altered in BC patients compared to healthy controls. This sustains the potential role of urinary miRNAs as non-invasive innovative urine-based biomarkers for BC detection.

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Poster Presentation

A-10-173-2

Aquatic birds' Serology in Zayndeh Rood River for NDV and AIV

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Objective: Zayandeh Rood River is located in the central part of Iran and goes from chaharmahal toward Isfahan and Gavkhooni Marsh. This river is more than 350 Km along the central watershed of Iran. Is responsible for nature of these area, different types of animals and plants are related to the river and some bird's special aquatic and lentics are living in the Zayandeh rood river and its Marsh. In current study, some aquatic birds of Zayandeh Rood River are investigated for serology against Newcastle virus and Avian Influenza Virus.

Materials and Methods: So after trapping by net or cage some birds were surrounded and just using a 5 ml siring about 2-3 ml of blood from wing vein were collected and the birds were marked and released at fall and winter of 1394. The investigated birds were Goose (12), Green head Duck (10 birds), Duck Common (11 birds), Wild Duck (9 birds), Flamingo Gcreat (5 birds) and Coot (11 birds) with a total population of 58 birds. The blood samples were transported beside the ice to the lab and treatment done for serology by HI test.

Results: Based on the lab results the NDV titers were ranged from zero in Green Head Duck to 5 in Duck common and mean titer were3.7. The AI titer for H9N2, H5N1 and H7N7 were examined, regarding to the result none of the samples were positive for H5 and H7 but the titer for H9 were ranged from 0 in Green Head Duck to 4 in Great flamingo, the mean titer for H9N2 were 1.6.

Keywords: Serology, NDV, AIV, Aquatic birds

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Poster Presentation

A-10-134-5

The Effects of Two Different Exercise Modalities on Gene Expression of Inflammatory Marker in Male

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Objective: Physical activity has an extreme relationship with gene expression. So the purpose of this study was to investigate the effects of resistance training (RT) and High-intensity interval training (HIIT) on transforming growth factor-α (TGF-α) gene expression of non-active middle-aged men.
Material and Methods: 36 healthy male volunteers were randomly assigned to one of the resistance training (RT: n = 12), High-intensity interval training (HIIT: n = 12) and non-exercise (NON-EX, n = 12) groups. Transforming growth factor- α gene expression were measured 24 hours before and after the 8 weeks training program (RT: 60 min/day,3 days/week by 60% of one repetition maximum (1RM) on the first week until 90% (1RM) on last week, HIIT: 30 min/day, 3 days/week at 60-90% of heart rate reserve).
Results: The result showed that exercise could change gene expression. TGF-a gene expression in the HIIT and RT groups compared to NON-EX group and basal conditions showed a significant reduction after 8 week exercise training ($p<0.001$).
Conclusion: This sensitivity to physiological stress, combined with TGF-a role in innate immune defense, suggests that these genes may mediate a link between regular physical activity and overall health status.

Keywords: Inflammation, Exercise, Gene expression
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Poster Presentation

A-10-173-1

Using Garlic for Immunity-boosting in Broiler Poultry

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Objective: Garlic is an ancient medical plants used from 4000 years ago and in second world war were well known as Russian penicillin. Allium sativum with an effective material known as Allicine shows antiviral, antibacterial, Antifungal and helminticidal activity it also can stimulate immune system both in humoral and cellular types and shows antiradical activity. It is suppose that garlic can boost effectively the immune system and here the vaccination response against some viral

diseases of broiler included bronchitis, Newcastle, Influenza and Gumbro were examined with and without garlic using.

Materials and methods: So 2 groups of broilers with a population of 25 birds per group used for study, all of techniques for breeding were the same just in first group (treatment) garlic powder were added 2Kg/1000kg diet from 3 to 5 weeks of age, therefore the second group did not used any garlic powder in the diet. Vaccination program were included the H120 bronchitis(IB) at 1 day, B1 Newcastle eye drop with injection of a double AI and ND killed vaccine at 7 days, also in 14th days the Gumbro vaccine (IBD) were drink in all birds, the vaccination with Lasota Newcastle vaccine were continued in 2 groups at 20 and 28 days old.

Results: Regarding to the result of titer investigation by HI and ELISA at 24 days of age, it was oriented that the treated group shows an antibody response about 0.5-1 logs (1-2 fold) more than the control group. The mean titer in the control group were 4567 for b IB, 5748 for IBD, 3.5 for AI and 4.9 for ND in the day against 2690 (IB), 2986 (IBD), 2.4 (AI) and 3.3 (ND) in control group.

Keywords: Garlic, Immunity, Broiler, Boosting

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Poster Presentation

A-10-117-1

Synergistic Effect of Glucantim with Shark Cartilage Extract in Therapy of Visceral Leishmaniasis in BALB/c Mice

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Objective: Visceral leishmaniasis is the acute form of leishmaniasis, which is always fatal if left untreated. In visceral leishmaniasis treatment, there are reports about drug resistance and failure treatment in some countries. Thus, using combned drugs as glucantim with shark cartilage axtract as an immunomedulator might be suitable. On the other hand, Combination therapy of antileishmanial drugs is currently noted as one of the most curative way to lower treatment failure rate. In this study, we used glucantim alone and combined with shark cartilage extract for treatment of visceral leishmaniasis in murine model for the first time.

Material and Methods: Glucantim (20mg/kg) and shark cartilage extract (20 mg/kg) was given intraperituan injection and oral. Parasite loads in the spleen and liver were defined by homogenizing and culthering the parasite and were compared with those in the untreated mice. At the end, INF-γ and IL-4 cytokines levels were assayed by ELISA in spleen cell culture supernatants.
Results: Parasite burden in the spleen and liver were reduced in combined form of drugs ($p < 0.001$) against to the single drug treatments given at the similar dosages. Although parasite burden was little low ($p < 0.05$) in the glucantim plus shark cartilage, extract group than in the glucantim group. The results of lymphocyte proliferation in a three- week treatment of mice indicated a significant increase of IFNγ and IL-4 ($P<0.05$) after the treatment. But IFNγ increase more than Il-4. In this study also, shark cartilage extract in the test group had shown increase of IFNγ, so showed significant difference compared to control group ($P<0.05$). The IFN-γ in glucantim-shark cartilage extract treated group were very higher than those of glucantim groups ($P<0.05$).
Conclusion: In conclusion, we have demonstrated the positive advantage and possible application of glucantim/shark cartilage extract drug combination in the safe and effective treatment of VL.

Keywords: Synergism glucantim shark- cartilage- extract Visceral Leishmaniasis
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Poster Presentation

A-10-134-7

Response of Serum Inflammatory Protein to Exercise as a Physiological Stress: Two Different Training Protocol

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Objective: Different types of exercise can have a tremendous effect on the immune system mediators. Therefore, the aim of this study was the response of serum inflammatory protein as a physiological stress to different kinds of exercise training.
Material and Methods: Totally 36 healthy non-active men (age= 40-50 years,

body fat of 26.25%) participated in this study. Volunteers were recruited as subjects and were divided randomly into three groups: non-exercise (NON-EX), resistance training (RT) and High-intensity interval training (HIIT) with 12 subjects in each groups. Blood samples of volunteers were collected in 24 hours before and after the exercise protocol. ELISA method used for serum TGF-α levels measurement.

Results: The results showed serum TGF-α level, 24 hours after the RT protocol in comparison with the NON-EX group and basal levels decreased significantly ($p<0.002$). Also serum TGF-α level has a significant increase in HIIT group comparison with baseline levels in NON-EX group ($p<0.001$).

Conclusion: Reduction in serum TGF-α level can predict inhibition stimulation activity of inflammatory markers and this leads to improvement of immune system.

Keywords: HIIT, Resistance training, Inflammation.

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Poster Presentation

A-10-134-11

The Effect of HIIT Training on IGF-1 Marker that Affect on Some Cancers

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Objective: The increase of IGF-1 levels is associated with acceleration metabolism and cell growth in some cancers. Therefore, the purpose of this research was to investigate the effect of HIIT on serum levels of IGF-1 that implicate in some cancers.

Material and Methods: 22 sedentary young men volunteer in this study and randomly divided into control (n=11) and exercise (n=11) groups. Exercise group performed HIIT training on the treadmill (30 min/day, 3 days/week) for 8 weeks. Blood samples were collected at resting time, and 24 hours after the training

period and ELISA method was used for measuring insulin-like growth factor 1 (IGF-1). Our data were determined by using independent t-test on SPSS.
Results The result indicates that IGF-1 serum levels in exercise group compared to basic conditions and control group, increase insignificantly after 8 weeks of HIIT training ($p>0.05$).
Conclusion: We can say that high intensity interval training does not have a significant effect on increase of liver IGF-1 secreted levels and subsequently it leads to prevent from upregulate IGF-1 activity and stimulation of IGF receptor signaling pathway as a factor in accelerating the cancer process.

Keywords: Cancer, Liver, Growth hormone, Exercise.
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Poster Presentation

A-10-142-1

Evaluation of serum IgG and IgM levels against Toxoplasma Gondii, Rubella, Cytomegalovirus infections among women of reproductive age at javaheri Hospital and Kaveh Pathology Laboratory in Tehran

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Objective: The purpose of this study is to determine the immune status of women of reproductive age against Toxoplasma, Rubella and CMV microorganisms at northern regions of Tehran.
Materials and Methods: During a cross sectional study at Javaheri Hospital and Kaveh Pathobiology Laboratory between August 2015 to October 2016 sera of 200 preconceptional women are collected and tested for Toxoplasma, Rubella and CMV IgM and IgG by ELISA method and then statistically processed by using SPSS version 16.
Results: Among 200 participants, 21 cases (10.5%) are found to be positive for presence of Toxoplasma IgM, 61 cases (30.5%) positive for Toxoplasma IgG1 case is positive for presence of Rubella IgM, 193 cases (97%) positive for Rubella IgG 22 cases (11%) are positive for presence of CMV IgM while 186 cases (93%) positive for CMV IgG.
Conclusion: Most of the studied women (97%) are seropositive against Rubella, which indicates the efficacy of Anti - rubella vaccination. The prevalence of active

Toxoplasmosis among the preconception women, showing increased serum Toxo IgM is high. A high proportion of preconception women show immunity against CMV.

Keywords: Toxoplasma, CMV

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Poster Presentation

A-10-461-1

Molecular Detection of G1691A in the Factor 5 Liden and its Relation with TNF- α Gene Polymorphisms in Abortion human

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Objective: Abortion is the most common of pregnancy complications. In the pathogenesis abortion, Genetic factors are involved. In the pathogenesis of abortion as a multifactorial disease, genetic factors and environmental factors are related. Hereditary thrombophilia as one of the factors known to be involved in abortion and Factor 5 Leiden (G1691A) is one of the most important factors is the hereditary coagulation thrombosis. In connection with this mutation and abortion, there are contradictions. In connection with this mutation and abortion, there are contradictions. Another factor in recurrent miscarriage fetal inflammatory factors is considered that TNFα is one of the most important pro-inflammatory cytokines and played a key role in many infections and inflammatory diseases as well. Polymorphism TNFα Susceptibility to various diseases associated with chronic inflammation. Of course, this Polymorphism association with abortion caused by inflammation in Iran has been less studied. This study aimed to investigate the relationship between each of Polymorphisms G1691A and 308 -TNFα with abortion and the relationship of these two Polymorphisms, are at an increased risk in women with abortion was performed.

Material and Methods: In this case-control study, 47 patients with a history of abortion and 105 Genomic DNA and 58 controls were selected. DNA extracted from the venous blood and then to determine the genotypes of polymorphisms G1691A and 308- TNFα, were used Multiplex- PCR and electrophoresis techniques were evaluated

Results: In connection with the polymorphism G1691A,GG and GA genotype frequencies in controls, respectively 95% and 5% and 87% and 13% respectively in patient samples relationship between case and control groups was significant (P=0/05). About polymorphism 308- TNFα genotype frequencies GA, GG and AA in the control samples, respectively 54%, 31% and 15% in patient samples, 19%, 45%, 36%, which is still a significant correlation between the control group and patients there (P = 0/00001) results. However, at the same Frequency, GA genotype G1691A mutation and polymorphism AA genotype of 308- TNFα, there is a significant relationship between the two groups was not significant.
Conclusion: In general, it can be concluded that molecular analysis of mutations in Factor 5 Leiden G1691A polymorphism and 308- TNFα in early detection and early treatment is effective abortion

Keywords: Abortion, Polymorphism G1691A, Polymorphism 308- TNFα
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Poster Presentation

A-10-44-1

Comparison of the Immunomodulatory Properties of Root and Leaves of Arctium lappa (Burdock) in vitro

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Objective: The roots and leaves of Arctium lappa (burdock) have been used for different therapeutic purposes, especially for diseases linked to chronic inflammation. The present study was designed to evaluate and compare the immunomodulatory activities of root extract of burdock (REB) and leaves extract of burdock (LEB) *in vitro*.
Material and Methods: For this purpose, PHA- or LPS-stimulated splenocytes were treated with different concentrations of REB or LEB and proliferation of splenocytes measured by MTT assay. The levels of IFN-γ and IL4 in the supernatants of PHA-stimulated splenocytes determined using ELISA. We also studied the effects of REB and LEB on Nitric Oxide (NO) production by LPS-stimulated macrophages using the Griess reagent.

Results: Our findings showed that both REB and LEB have suppressive effects on LPS-stimulated splenocytes proliferation, IL-4 secretion from PHA-stimulated splenocytes, and NO production from LPS-stimulated macrophage and stimulatory effects on PHA-stimulated splenocytes proliferation, and IFN-γ secretion from PHA-stimulated splenocytes. Although both REB and LEB had similar immunomodulatory affects in vitro, stronger immunomodulatory effects seen in REB.
Conclusion: According to our results, we suggest that root of burdock is better option than leaves of burdock in modulation immune responses and inflammations.

Keywords: Arctium lappa, Burdock, Immunomodulation, Macrophage, Nitric Oxide

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Poster Presentation

A-10-195-7

Study & Evaluation of Serum Level Specific IgE (on Type I Allergy) in humans referred to Central Laboratory of Kermanshah, Iran.

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Objective: specific IgE levels are measured in several clinical laboratories by pre-coated blotting strips or disc ELISA procedure assessment. The aim this study evaluation Practical of specific IgE determination method as improved the routine procedure.
Materials and Methods: In this study, 398 blood samples were collected from persons suspected to type I allergy admitted to the Kermanshah central Laboratory during 1 year (2016) and level Specific IgE concentrations were determined in samples using disc ELISA procedure method (routine technique immunoassay for medical laboratories).
Results: Totally 37(9.29%) antibody positive sera obtained, 17(4.27%) were from males while 20(5.02%) were from females showed positive levels of Specific IgE. The highest rate of sera positivity was observed in 12 to 17 year-old women. The peak of Specific IgE was observed among patients in the age group of 12-20 in

both sexes, while the lowest prevalence was observed among patients in groups of above 20 ages.

Conclusion: This study indicated sera prevalence of Specific IgE was significantly associated with age of the people, family histories, life style. Also the results showed that high rate in this population could not be ignored and the sera prevalence rate need to include the testing of Specific IgE as a part of the investigation that should be run on persons for us to educate about the risk factors that lead to types of allergy and, is highly recommended for those laboratory managers as well as lab technologists who deal with specific IgE test. In addition, this test (disc ELISA producer) could be very useful for clinical and molecular allergists and other physicians who deal with allergic patients.

Keyword: Evaluation, Specific IgE, Central Laboratory, Kermanshah

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A-10-116-3

Biological and Genetic Biobanks Registry for Primary Immunodeficient, Asthmatic, and Allergic Patients

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Objective: Biobank is a collection of resources containing biological and genetic materials that help store valuable samples. Establishing a biobank makes easy to access samples for assessing their characteristics. Our biobank consists of four separate biobanks including DNA, HLA, serum, and cell banks. Our aim is to standardize banking the samples of patients and their families who referred to Immunology, Asthma and Allergy Research Institute (IAARI) and suffered from primary immunodeficiency (PID), asthma and allergy.

Materials and Methods: IAARI's biobank was established in 2006 with DNA and serum banks, then cell and HLA banks were added in 2012. All of the cases with

diagnosis of PID, asthma and allergy entered in this registry and after taking informed consent, their samples were stored in the biobank.

Results: Up to now, we stored a total of 3288 DNA samples from PID patients and their relatives, 450 serums from allergic patients, 186 samples of asthmatic patients, more than 700 HLA samples of healthy donors' volunteers, and 43 cell samples from PID patients.

Conclusion: This biobank can be used to early diagnosis of PID genetics, and finding matched hematopoietic stem cell transplantation (HSCT) candidates for them. In addition, it can be helpful for investigating prospective genetic and familial surveys. This also decreases need for cost and resampling from patients.

Keyword: Registration, PID

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Young Researcher Session-Primary Immunodeficiency Diseases

The Third International Congress of
Immunology, Asthma & Allergy

Oral Presentation

A-10-450-1

Using TREC/KREC Screening to Identify a New RAG1 Gene Mutation in an Autosomal Recessive- SCID Patient

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Objective: Severe combined immunodeficiency (SCID) is a heterogeneous group of primary immunodeficiency diseases (PIDs), characterized by profound T and/or B lymphopenia, caused by different genetic mutations. Precise molecular methods such as T cell receptor excision circle (TREC)/ kappa deleting recombination excision circle (KREC) assay can be used for screening of newborns for early diagnosis of PID especially SCID and Bruton's disease (XLA). Here we report a novel recombination-activating gene (RAG1) mutation in an Iranian newborn who suspected to PID referred to the Immunology, Asthma and Allergy Research Institute (IAARI) that identified through TREC and KREC assay.

Material and Methods: A newborn with family history of PID in previous child were referred to IAARI for further evaluation. After taking parents informed consent, DNA was extracted from dried blood spot (DBS) sample, TREC and KREC copy numbers were measured simultaneously by real-time PCR method. Moreover, complete screening tests for PID were done. Based on immunophenotyping and TREC/KREC results, gene sequencing analysis was done on some target genes of patient and parents by PCR technique, followed by direct sequencing.

Results: Results indicated zero copy numbers of TREC and KREC, suggesting a T-B-SCID in the patient. Sequencing results revealed one new homozygous mutation in RAG1 gene. Complete screening test results showed defect in T and B lymphocytes. The gene was confirmed in parents that were heterozygous.

Conclusion: These findings show that TRECs and KRECs would be a very promising approach to screen the patients and early diagnosis of SCID infants which can

subsequently help the physicians to move towards an appropriate treatment like hematopoietic stem cell transplantation.

Keywords (3-5 word): TREC, KREC, RAG1, SCID
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Oral Presentation

A-10-423-1

Identifying Two Novel Mutations in UNC13D Gene in Two Iranian Patient with Hemophagocytic Lymphohistiocytosis (HLH)

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Objective: Hemophagocytic lymphohistiocytosis (HLH) is a rare immunodeficiency disorder recognized by high fever without response to antibiotics, hepatosplenomegaly, cytopenia and hemophagocytosis. HLH can be classified into two major forms: primary and secondary. Familial hemophagocytic lymphohistiocytosis (FHL), a type of primary HLH in which mutations in PRF1, UNC13D, STX11, STXBP2 genes cause the disease. Since genetic studies in STX11 and PRF1 have been investigated in Iranian FHL patients and no mutations found in some of them, this study aims to include UNC13D gene to FHL diagnosis panel to help patients diagnose early and accurate and do prenatal and carrier status.
Material and Methods: Patients with HLH diagnosis and without mutation in PRF1 and STX11 genes entered this study. Primers were designed for exon and exon-intron regions of UNC13D gene. After genomic DNA was extracted from whole blood samples, PCR technique was done and followed by direct sequencing of the products. Finally, sequencing results were analyzed.
Results: Mutation analysis of UNC13D gene revealed several mutations including one novel splicing mutation (c.2091+1G>A), one missense mutation (c.1933C>T),

one frame shift deletion (c.627Tdel) and three single nucleotide polymorphisms (SNPs) (c.888G>C, c.2601A>G, c.3183A>G).

Conclusion: Considering the mutations detected in UNC13D gene and its association with FHL, elucidation of genetic study of this gene is necessary for accurate diagnosis and appropriate treatment and can help us extend our knowledge of this heterogeneous disease.

Keywords: Immunodeficiency, UNC13D, HLH, Mutation analysis

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Poster Presentation

A-10-459-2

Inverse Relation between MxA Gene Expression and Age in Multiple Sclerosis Patients Reveals a Gender Difference in Response to Interferon Therapy in Iran

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Objective: Multiple sclerosis (MS) is an inflammatory, multifocal, immune-mediated disease of the central nervous system that women are at a higher risk to acquire than men are. Myxovirus resistance protein A (MxA) is used as a predictive marker of bioactivity of interferon-beta (IFN-b) therapy in MS patients. This study was undertaken in west of Iran to investigate gender differences in the expression level of MxA in relapsing-remitting MS (RRMS) patients receiving IFN-b therapy, compared with untreated normal individuals.

Material and Methods: The expression level of the MxA gene in RRMS samples were compared to untreated normal individuals by using the extracted RNA from whole blood of 50 RRMS patients (31 females and 19 males) and 50 normal controls (29 females and 21 males) in Iran. All patients were HLA-DRB1*15 negative and responded to IFN-b with a normal vitamin D level. The level of MxA gene expression was measured using quantitative RT-PCR.

Results: The levels of gene expression were decreased in RRMS patients compared with normal counterparts (P=0.025). This decrease was significant in females (p value=0.009) compared to males (p>0.05). The level of expression varied across different female age groups with no significant difference in women

younger than 30 years, but a significant decrease in expression in women between 30 to 40 years or above 40 years of age. There was no linear correlation between the MxA expression level and risk of Expanded Disability Status Scale of Kurtzke (EDSS); nor were there any significant correlation between expression status of MxA and duration of the disease.

Conclusion: In conclusion, the decrease in the level of MxA expression in MS patients treated with IFN-b when compared to normal individuals was significantly lower in females than males. This demonstrated a gender bias in the response to IFN-b therapy that will need to be confirmed and further investigated in more detail.

Keywords: Multiple sclerosis, Expression, MxA, Interferon, Gender

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Poster Presentation

A-10-137-1

The study of Livergol® effect as an Adjunctive Drug on Serum Levels of MMP-2, MMP-9 and VEGF in Rheumatoid Arthritis Patients

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Objective: Rheumatoid arthritis (RA) is a chronic autoimmune disease that characterized by pain which can lead to joint destruction and disability. Activation of complements will cause cytokine production such as TNF-a, MMP-2, MMP-9 and VEGF, and this will make the disease to start or to progress to destruction and deformity of joint. Several classes of drugs are used in treatment of RA which some are useful only to control acute symptoms, However, they have numerous. Milk thistle extract (Silymarin) does have so strong antioxidant and anti-inflammatory effects that it made us to study its effect as an adjunct to DMARDs in treatment of patients with RA.

Material and Methods: 42 RA patients with a two years history of the disease, who were matched in their drugs used to treat, participated in this study. They underwent a three months trial of treatment with LIVERGOL, which contain Silymarin, 140 mg thrice a day, as an adjunct to DMARDs used by the patient. Fasting venous blood sample was obtained from all patients; serum was aliquoted and stored at -70^{oC} until evaluation.
Serum level of MMP-2 and MMP-9 and VEGF were measured before and after intervention by Elisa Kit R&D Company USA. To analyze the data, we used Paired-Samples and Wilcoxon tests. (IRCT: 2013121915870N1)
Results: In comparison to before treatment with Livergol, there was a significant decrease in serum level of MMP-2 and VEGF in RA patients after 90 days' administration of livergol ($p<0.05$).
Conclusion: Many cytokines are activated in the synovium by various cell populations; several of them are secreted by macrophage-like cells whereas the others by fibroblast-like cells. The most important cytokines secrets are TNF, MMP-2, MMP-9 and VEGF. Our findings show that silymarin can significantly reduce serum levels of MMP-2 and VEGF RA patients after 90 days administration of Livergol. The exact mechanism of therapeutic effects of Silymarin in RA patients is not clear but it can be result of its anti-inflammatory and anti-oxidative properties.

Keywords: RA, MMP-2, MMP-9, VEGF, Silymarin
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Poster Presentation

A-10-341-1

A close Look at the Imbalanced Th1/Th2 Responses in Allergic Asthma

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Objective: Th1 and Th2 cells are the main cells involved in the pathophysiology of asthma. The function of these cells is under the influence of T-bet and GATA3 transcription factors (respectively). This study aimed to investigate the impairment of immune responses in patients with allergic asthma compared with controls.

Material and Methods: For this study, 24 patients with allergic asthma and 10 healthy subjects were involved. The study participants' peripheral blood mononuclear cell (PBMCs) was isolated and cDNA was synthesized after RNA extraction. Gene's expressions of T-bet and GATA3 were evaluated by Real-time Polymerase chain reaction. In addition, their relationship was analyzed with risk factors for asthma using relevant statistical tests.

Results: The results showed that GATA3 gene expression in patients was increased by as much as 29 times higher (P= 0/002). While the expression of T-bet, however, declined (0/43), but this reduction was not statistically significant (P =0 /32). Evaluation of T-bet / GATA3 showed that patients this ratio is significantly lower than the control group (p<0/0001). In addition, significant inverse correlation between the number of eosinophils and the percentage of FVC was seen in asthma patients (r =0/624, P= 0/003).

Conclusion: Increased expression of GATA3 and significantly reduce of T-bet / GATA3 ratio in patients compared with control subjects showed a disturbance immune responses in asthma. So any remedial or control action should be focused on improving the unbalanced situation.

Keywords: Allergic asthma, T-bet, GATA-3, Real time PCR

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Poster Presentation

A-10-397-1

Diagnosis of Human Brucellosis in Serum Samples Using Nested PCR Method

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Objective: Brucellosis is a significant health problem worldwide that require fast and accurate diagnosis. Nested PCR method, unlike conventional methods, is a reliable method for the detection of Brucella in clinical samples. This study aimed

to identify examples Brucella Patients were clinically suspected of having brucellosis.

Material and Methods: In this study, 24 serum samples from patients with suspected brucellosis were isolated. The samples using specific antisera Brucella, culture-specific Brucella agar biochemical tests were analyzed. Nested PCR reaction primers designed on the basis of Bcsp31 gene was performed on the samples. Following bacterial DNA extracted from the sample, the first and second phase Nested PCR reactions were performed. Finally, the current serological methods at diagnosis were compared.

Results: Nested PCR reaction amplified region as the first round, a second round of 639 bp PCR reaction amplification of a region the size of 383 bp, respectively. Brucella melitensis strain M16 (ATCC 23456 (or E. coli) ATCC 25922) respectively positive and negative control reactions.

Conclusion: 14 serum samples and 16 samples of serum Wright serologic test in the second round Proliferative response in terms of Brucella, were positive. Based on these findings, serum samples due to the absence of PCR inhibitors are suitable for the detection of brucellosis. On the other hand, Nested PCR method for high sensitivity and specificity, a reliable method for the diagnosis of human brucellosis.

Keywords: Brucellosis, Serum samples, PCR method

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Young Researcher Session-Allergy

The Third International Congress of
Immunology, Asthma & Allergy

Poster Presentation

A-10-97-1

Evaluation of the Skin Prick Sensitivity to Eighty Different Allergens among Medical Students in Birjand

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Objective: Allergic disorders are among the most prevalent health problem around the world and have a significant negative impact on patients' quality of life. Allergens are the most common triggers of allergic symptoms and the pattern of sensitization vary in different societies because of life style and genetic background. Identification of the prevalent allergens in each area and general population has an important role in prevention and management of allergic disorders. Because of the greatness and population diversity as well as different geo-climatic conditions of Iran, the aim of this study was to evaluate the prevalence sensitivity to eighty different among medical student in Birjand.

Material and Methods: Demographic data and presence of allergic symptoms was evaluated by a questionnaire. Skin prick tests were performed with 80 different allergens including foods, grasses, weeds, trees, insects, and molds on 144 medical students in Birjand city of Iran.

Results: 144 medical students (mean age 21.1 years, range: 19-30, M/F ratio: 0.63) randomly selected and enrolled in this study. Prevalence of asthma, allergic rhinitis and eczema was 2.77%, 40%, and 12.5% respectively. The overall rate of sensitization to any allergen was 51%. Among the food allergens, tomato, orange, walnut and pomegranate and mustard showed the highest rate of sensitization (4.82%, 3.47%, 3.47%, 3.47% and 3.47% respectively). The most common aeroallergens were Salsola kali (48.6%), common weed mix (45.3%), Chenopodium Album (40.9%) and trees mix (29.86%). There was no significant difference in rate of sensitization among girls and boys.

Conclusion: The results of present study confirmed high rate of allergic symptoms and skin sensitization to particularly weed and grass allergens among students. Further analysis with more participants needs to confirm the result of our study.

Keywords: Allergens, Skin prick test, Student

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Poster Presentation

A-10-174-1

Evaluation of the Results of lymphocyte Transformation Test in Patients with Hypersensitivity Reactions Following Phenytoin Usage and Control Group

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Objective: Administration of phenytoin can been associated with severe adverse reactions such as hypersensitivity reactions. Lymphocyte transformation test (LTT) can be a useful method for determination of the drug, which has caused hypersensitivity reaction. This study was done to evaluate the results of lymphocyte transformation test in patients with delayed hypersensitivity reactions following phenytoin administration and control group.

Material and Methods: In a case-control study, four patients with hypersensitivity reactions following administration of phenytoin and ten patients, who had used phenytoin without hypersensitivity reactions, were included. Peripheral blood mononuclear cells were isolated. The cells were stimulated with Phenytoin, PHA (Phytohaemagglutinin) as a mitogen and candida as an antigen. Lymphocyte proliferation was measured using Brdu proliferation assay kit (Roche, Germany). The stimulation index was calculated by dividing OD of stimulated to unstimulated cells. Stimulation index more than 2 was considered as positive. The results in case and control groups were compared, using Fisher's exact test.

Results: Out of four patients in the test group, three had positive LTT results and one had negative test result. Among patients in control group, none of them had positive LTT result. This difference was statistically significant (p=0.002). The mean time between development of drug reactions and perform the LTT was 16±6.9 months in the test group with positive result and 38 months in test group with negative test result. This difference was not statistically significant (p=0.174).

Conclusion: LTT can be a helpful method in diagnosis of the drug that has caused hypersensitivity reaction.

Keywords: Lymphocyte transformation test, Phenytoin, Hypersensitivity.

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Poster Presentation

A-10-398-1

The First Pollen Calendar by Rotorod air Samplers for Pollen Concentrations Conducted in the Environmental Exposure Sanandaj (Kurdistan)

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Objective: According to the prevalence of seasonal allergic rhinitis in the world especially Iran and the relationship between pollen levels and symptoms there has been an increasing demand for accurate pollen counts. In this research, we investigated and reported about first pollen calendar in Sanandaj (Kurdistan) during 2014-2016.

Material and Methods: The first stage of the map and classify in location site areas vegetation and distribution patterns of plant species for two years. Then the collection and identification of allergenic plants and divided them in to three groups: Tree, weed and Grass. Then Pollen concentrations levels determined by measurements using the Rotorod air sampling methods from 2014to 2016 and raw pollen counts/m3 obtained using were pollen collection for the airflow. Data were analyzed by ANOVA/Tukey HSD.

Results: The results showed that 40% of total variation in vegetation involved the trees and 36% relating to weeds and 24% grasses. Separation of pollination and flowering was done in the highest number of tree and shrub angiosperms species from February to April and the highest number of gymnosperms from January to late March. The flowering percentage in the weed and grass plants groups of %80 in spring and summer seasons and comparative with other seasons showed the significant results in P=0.02. The famous of family of pollen concentrations levels is trees family include: Fagaceae (QuercusL.), Pinaceae (PinusL.) Cupressaceae,

(CupressusL., JuniperusL.) Oleaceae (OleaeL., FraxinusL.), Ulmaceae (UlmusL.), salicaceae (poplusL.), Rosaceae (Corylus L.), and the most of weed pollen counts includes: The Rosacea (Spiraea), Asteraceae (Helianthus), Malvaceae (Malva), chenopodiaceae (chenopodium), Amaranthaceae (Amaranthus) family and grasses group is poaceae family.

Conclusion: This research demonstrated that, under environmental exposure our conditions, the Rotorod sampler provides consistent and reliable measurements of pollen levels location and the future we need comparative with relationship whit been air borne pollen count and metrological factors in Sanandaj .

Keywords: Pollen count, Rotorod air sampler, Pollen concentrations, Sanandaj, Kurdistan, Seasonal allergy

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Young Researcher Session-Asthma

The Third International Congress of
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Poster Presentation

A-10-26-1

Evaluate the Quality of Life in Asthma Patients

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Objective: Asthma is a chronic respiratory disease that causes irritability and spasms of the Airways of the lung to be. Quality of life in asthma patients with the attacks of the disease and prolonged treatment of this disease can be affected. Therefore, the aim of this study was to evaluate the quality of life in asthma patients.

Material and Methods: The study of analytical descriptive type, which is on 115 patients with asthma, referring to the hospital khatam-ol Anbiya in the year 1394.The overall number of sampling to be had for a month. The data collected through the World Health Organization quality of life questionnaire. The entry criteria for asthma patients were personal satisfaction, and complete filling of the questionnaire. Data analysis was done with SPSS software version 20 by descriptive test (frequency distribution, mean and standard deviation) and independent t-test and ANOVA.

Results: The findings showed that the average age of the patients was 54.91 ± 10.23. 55.7% male and 3.44% were female. 92.2% of the patients were married. 21.7% of the patients smoked. The highest average score and the standard deviation are related to the dimension of social relations (40.19 ± 10.21) and the lowest corresponds to the dimensions of the health of the environment (36.82 ± 7.9). 45.2% of the patients' quality of life was inappropriate and 54.8 % average quality of life. Between quality of life and other variable significant relationship was not observed ($P>0.05$).

Conclusions: The findings of this study showed that the overall quality of life for patients in poor condition as well as all patients in the health of the environment is in poor condition. Therefore, it is recommended to managers take the necessary measures in order to improve and upgrade the quality of life and the level of health of vulnerable groups.

Keywords: Quality of life, Asthma, Patients

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Poster Presentation

A-10-379-2

VIP-loaded PLGA as an Anti-asthma Nano-drug Candidate

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Objective: Poly lactic-co-glycolic acid (PLGA), a biodegradable polymer, can effectively protect encapsulated peptides from enzymatic degradation. PLGA was approved by FDA as a safe drug delivery system suitable for inhalation administration. Vasoactive intestinal peptide (VIP), a 28-amino-acid peptide, displays anti-inflammatory and anti-spasmodic effects, which can be considered as a new therapeutic option to control and treat asthma. Because of in vivo enzymatic degradation of VIP including in the lung, there is a need for an applicable delivery system.

Material and Methods: In light of this, the purpose of this study was to prepare VIP-loaded PLGA microspheres as a drug delivery system, assuming that the newly-introduced model has the ability to persist for a longer time in respiratory tracts. The PLGA microsphere was produced, and loaded with VIP as an applicable nanodrug system. A series of physiochemical properties were determined, including the morphological characteristics, average size of nanoparticles, electric charge distribution, FTIR spectroscopy absorption, and loading and releasing percentage of the nanodrug.

Results: VIP loaded PLGA exhibited an average size of approximately 550±50 nm. Additionally, the produced microsphere showed 78 % VIP release after 10 h at the pH value corresponding to bronchioalveolar microenvironment (approximately 6.5).

Conclusion: In the present study, PLGA was formulated and used as a delivery system for VIP. Taken together, the newly introduced nanodrug seems to be helpful for the clinical treatment of allergic asthma. PLGA nanoparticles can be considered as a potential efficient delivery system for VIP in the respiratory system.

Keywords: PLGA. Vasoactive intestinal peptide, Nanodrug

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Poster Presentation

A-10-382-1

The Prevalence of Asthma and its Related Factors among Medical Students West of Iran

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Objective: Asthma is a common chronic inflammatory disease of the airways in which the nerve endings in the airways are sensitive and easily irritated. Its intensity varies from person to person. This disease usually starts in childhood and many factors are involved in its occurrence.

Material and Methods: The aims of this study were to investigate asthma occurrence risk factors in west of Iran (Khoramabad, Kordestan, Ilam, Kermanshah and Hamedan),so that by identifying these factors and educating parents about them, the occurrence of this disease can be prevented as much as possible. This study used convenience sampling. The study has a case-control design. The inclusion criteria included having the symptoms of asthma according to the GINA standard criteria and being diagnosed by a respiratory diseases subspecialist. The data collection instrument was a questionnaire. After collecting the data, they were entered into SPSS19 and statistical analysis was performed.

Results: 1200 individuals were studied, 1200 of whom had asthma and the other 1200 were in the control group. All of the participants belonged to the 18 to 30 age group. The majority of the studied (62.3%) belonged to the 18 to 24 age group. From among the studied, 728 (60.3%) were male and 472 (39.7%) were female. In the two groups of student with asthma and healthy student, no significant difference was observed based on sex ($p = 0.277$).

Conclusion: The students of highly educated were less likely to develop allergic diseases and asthma, which could be attributed to the knowledge of the student about various diseases. Given the risk factors, it can be concluded that acquired factors can play an important role in the occurrence of these diseases in children.

Keywords: Asthmat, Allergic disease, Airway.

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Poster Presentation

A-10-453-1

Evaluation of Toxoxcara Cati on Allergic Asthma in BALB/c Mice

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Objective: Toxocara cati is the roundworms of cats, which humans can infect by ingesting infective eggs in cat faces. Epidemiological studies have shown that infection with Toxocara contributes to the development of allergic manifestations, including asthma. Clinical symptoms such as wheezing, coughing and episodic airflow obstruction have been described for patients infected with this helminth. To investigate the association between infection with Toxocara cati and allergy, we examined the effect of T. cati infection on allergic manifestations by combining a murine model for toxocariasis and the experimental model for allergic airway inflammation.

Material and Methods: The groups consisted of mice infected with T. cati on day 0 (Tox-3); infected with T. cati and 3 days post-infection treated with OVA (Tox-3+OVA); OVA treated
only (OVA) and control uninfected and untreated animals (Ctrl). Mice were infected by a single oral administration with 500 embryonated Toxocara cati eggs followed by ovalbumin (OVA)
sensitization and challenge to induce allergic airway inflammation. Treatment with OVA consisted of 16 days in total with initial sensitization by two intraperitoneal (i.p.). In order to characterize the effect of Toxocara cati infection on the lungs, all groups were killed on day 20 and allergic asthma was evaluated based on histopathology. Histological changes such as peribronchiolitis, perivascular infiltrate, hypertrophy of goblet cells, alveolitis and eosinophil influx were scored from absent (0), minimal (1), slight (2), moderate (3), marked (4) to severe (5). Statistical analysis between groups was done with Kruskal–Wallis test ($p<0.05$).

Results: Mice that were infected with Toxocara cati and then treated with OVA (Tox-3+OVA) showed increased pathology compared with mice that were only

infected with Toxocara cati (Tox-3) or with the OVA-treated group of animals. In the control group (Ctrl), no histological lesions were observed.

Conclusion: A previous infection with Toxocara cati leads to exacerbation of experimental allergic asthma.

Keywords: Toxocara cati, Allergic asthma, Mice.

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Young Researcher Session- Multi Disciplinary

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Poster Presentation

A-10-78-1

Radiolabeling of Chitosan with 99mTc: New Radiopharmaceutical for Lung Imaging in Nuclear Medicine

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Objective: A pulmonary embolism is partial obstruction of the pulmonary artery or one of its branches by a blood clot. The early detection of this disease is very important to save the patient. The proper detection method for embolism is lung perfusion scintigraphy with nuclear medicine system, performed by 99mTc-albumin macro-aggregated (MAA) that are radiolabeled particles. There are some difficulties in synthesizing of the particles and imaging with them has some that we used chitosan microparticles as an alternative choice.

Material and Methods: The chitosan particles were synthesized by ionotropic gelation method and radiolabeled with 99mTc after Purification. The quality control tests including determining particles size, labeling efficiency, stability in saline buffer, biodistribution and imaging study in the mice were performed.

Results: The size of particles was 10-60 micron. The labeling efficiency: 95±4%, the good stability in saline buffer and high accumulation of activity in mice lung were seen. The slow excretion activity was observed in the lungs of mice after15 minutes.

Conclusion: The results showed that the 99mTc-Chitosan microparticles might be considered as a promising radiopharmaceutical of lung perfusion scintigraphy that needs more investigations in future.

Keywords: Pulmonary embolism, Nuclear Medicine, Chitosan particles, 99mTc

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Poster Presentation

A-10-104-1

Study of Immunohematologic Adverse Reaction Blood Transfusion in Fasa Valiasr Haspital

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Objective: 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 an immunohematologic small risk of an acute or late adverse effect.

Material and Methods: in this descriptive- analytical study was carried out of Fasa Valiasr hospital. 1450 units of Blood and Blood components were transfused; date was retrieved during 12 months from Blood Bank unit of this center. Alloimmune transfusion reactions, platelet refractoriness, hemolytic of RBCs and Bacterial contamination reaction were studied.

Results: From 1450 unit of Blood and Blood components, nine cases of adverse reaction are reported and following results, we obtained one-three positive direct anti globulin test (DAT) 2-3 positive hemoglobinuria 3-2 cases of thrombocytopenia. 4- No bacterial contamination reactions.

Conclusion: The present finding show that with continue reporting Blood transfusion- associated adverse events to blood bank. Blood transfusion organizations help to diagnosis, therapy and preventing of adverse reactions.

Keywords: Blood Transfusion, Blood Banks, Hemoglobinuria

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Poster Presentation

A-10-141-1

IgG4-related Lung Disease

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Objective: The hallmarks of immunoglobulin G4-related disease (IgG4-RD) are dense lymphoplasmacytic infiltrations with predominance of IgG4-positive plasma

cells in the affected tissue, usually accompanied by fibrosis and most of the time by obliterative phlebitis and increased number of eosinophils. Serum IgG4 levels are elevated (>135 mg/dL) in about two-thirds of the patients. IgG4-related respiratory disease, which may be asymptomatic or present with cough, hemoptysis, dyspnea, pleurisy, or chest pain; pseudotumors and interstitial pneumonia have been associated with AIP. Visceral or parietal pleural thickening may also occur. The affected tissues exhibit characteristic lymphoplasmacytic infiltrates enriched in IgG4-positive plasma cells, interspersed –usually but not always- with abundant storiform fibrosis. Four patterns of lung involvement have been described: Solid nodular-Bronchovascular (with thickening of bronchovascular bundles and interlobular septa)-Alveolar interstitial (with honeycombing, bronchiectasis, and diffuse ground-glass opacities)-Round-shaped, ground-glass opacities. The pulmonary manifestations of IgG4-RD may mimic sarcoidosis. In one study of patients suspected of having sarcoid with bilateral hilar adenopathy and/or lung nodules on CT of the chest, patients with IgG4-RD were identified among a subset with elevated serum IgG4; they exhibited significantly higher levels of bronchoalveolar lavage IgG4, IgG4/IgG, and IgG4/IgG3 compared with those with normal serum IgG4 levels.

Case Presentation: My patient is 48 years old woman, who had dyspnea and cough from four months ago. Lab dates: ESR=114, WBC=7330, LYMPH=2012, NET=4030, IgG4=3252mg/l (62-1127). Chest CT: There is 3cm patchy well defined opacity (nodule) in RUL& 2cm in LUL& 3.5cm in superior. Treatment: prednisolon 1mg/kg /day for two months, then taperd during six months. Her dyspnea and cough is removed. Lab date: ESR=25 IgG4=850

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Poster Presentation

A-10-155-1

Clinical Characteristics in Rheumatoid Arthritis: Correlation between Neopterin, RF, Anti-CCP and Disease Duration with Disease Activity

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Objective: Rheumatoid arthritis (RA) is a chronic autoimmune disorder that affects 1-2% of world population approximately. Disease Activity Score (DAS-28) is a clinical parameter assessment of disease progression activity in RA patients. This factor is measured according to swollen and tender joints. Many elements could be caused inflammation and progression in synovial microinviernment including pro-inflammatory cytokines (IL-1, IL-6 and TNF-α) and other mediators that are produced by adaptive and innate immunity. Neoptrin is one of these elements that is created following catabolism of guanosine triphosphate (GTP). High concentration of neopterin is indicator of a more severe inflammation. Other significant mediators including Anti-CCP and RF are two autoantibodies that interfering in the diagnostic of RA.

Material and Methods: Peripheral blood samples were collected from 47 patients and 44 healthy subjects. Then plasma levels of neopterin and Anti-CCP have been evaluated using (IBL, Germany) and (Euro immune company) ELISA kit respectively. In addition, RF positive patients were detected with latex agglutination test, and ESR was obtained from patient's records.

Results: In our investigation there was significant correlation between neopterin ($P<0.038$), Anti-CCP ($P<0.001$) and RF ($P< 0.001$) in patients and healthy subjects. Also significant correlation between RF and DAS-28 ($P= 0.001$) have been found in our study. Furthermore, our study we have calculated the sensitivity and specificity of anti-CCP test (sensitivity 89.1%, specificity 86.95%) and RF (sensitivity 91.3%, specificity 91.1%) for the diagnosis of RA.

Conclusion: Our study illustrated that neither neopterin nor anti-CCP have not any significant correlation with DAS-28 while the correlation between RF with DAS-28 was statistically meaningful.

Keywords: Rheumatoid arthritis, DAS28-ESR, neopterin, RF, Anti-CCP

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Poster Presentation

A-10-415-1

Functional Deimmunization of Human interferon Beta by Identifying and Silencing Human T-cells

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Objective: Human interferon beta (hIFN-β) is a cytokine that were developed as therapeutic proteins for the treatment of multiple sclerosis (MS). Studies show that Long-term treatment with IFN-β can lead to the development of anti-drug antibodies (ADAs), this phenomenon can cause total loss or reduced efficacy of drug. Immunogenicity is an important problem associated with majority of all therapeutic proteins, but we can predict epitope sequence very precisely within the protein by in silico analysis and changing immunogenic sequence by genetic engineering.

Material and Methods: In this paper by using previous study and bioinformatics tools (IEDB, www.iedb.org) we identifies optimal sets of conservative point mutations to minimize the occurrence of predicted T-cells epitopes in a human INF-β-1b . Human INF-β-1b gene was codon optimized and an expression vector was designed based upon pET-26b (+). Expression of beta interferon confirmed by western blot and ELISA methods. To determine Activity of mutants' variants, Anti-proliferative and anti-viral activity of mutant forms compared to normal form was evaluated using MTT assay in A549 and Vero cells lines. The *in vivo* immunogenicity of a mutant forms was compared with betaseron® (approved recombinant human IFN beta-1b) in Female BALB/c mice. The antibody titer against variants was measured by ELISA test.

Results: Bioactivity analysis, including anti-proliferative, anti-viral bioassays and immunoassays demonstrated that the functional activities of the engineered forms of human INF-β-1b were maintained and is same with betaferon. Next immunogenicity studies will be done.

Conclusion: This results show that site directed mutagenesis did not eliminate function of proteins.

Keywords: Protein Deimmunization, Human interferon beta (hIFN-β), Anti-drug antibodies (ADAs), Genetic engineering

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Poster Presentation

A-10-447-1

The Polarization of Helper-T-lymphocytes May Be Involved in the Pathogenesis of Lumbar Disc Herniation

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Objective: Studies have indicated that the polarization of Helper-T-lymphocytes (Th cells) plays an important role in most immune activation. However, there is little knowledge about their role in lumbar disc herniation (LDH). This study aimed to explore the expression of Th1/Th2 and their role in such LDH-induced neuropathic pain.

Material and Methods: Human Intervertebral disc (IVD) tissues were collected from 12 LDH patients (extrusion group) and six vertebral fracture patients (control group). The expression of Th1/Th2 and related cytokines in the nucleus pulposus (NP) were examined by flow cytometry, western blot, immunofluorescent staining. The expression of Th2 and related cytokines (IL-4 and IL-5) in herniated human NP showed increased compared with control group, while Th1 cells and related cytokines (IFN-γ and IL-12) in each group were similar. Subsequently, we investigated the expression of Th1/Th2 and associated cytokines in NP of rat with LDH. The expression of macrophages in the dorsal root ganglia (DRG) were examined by western blot, immunofluorescent staining. Nociceptive tests were carried out for each rat.

Results: The expression of Th1 cells was dramatically up regulated in rat NP at 3 days after autologous disc implantation, but significantly down regulated at 28 days. The expression of Th2 cells was up regulated at 28 days. Protein expressions of IL-12 and IFN-γ in the implanted NP remarkably increased at 3 days, peaked at 2 weeks, and recovered at 28 days. Protein expressions of IL-4 and IL-5 remarkably increased at 10 days peaked at 4 weeks. CCL3 and CD86 protein expressed at a relatively low level in naive DRG, markedly increased at 14 days, and decreased at 28 days. Arg1 and CD206 protein expressed at a relatively low level in naive DRG markedly increased at 28 days. The paw withdrawal threshold dropped at 1 day after surgery and slightly recovered at 28 days. The paw withdrawal latency decreased 3 days after surgery and recovered at 28 days.

Conclusion: The results suggest that the polarization of Th cells may be involved in the pathogenesis of LDH-induced pain and this may be achieved via the phenotypic shift of macrophages.

Keywords: Interferon (IFN) –γ, Interleukin (IL) -4, lumbar disc herniation, the polarization of Th cells

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Young Researcher Session-Cancer Immunology and Immunotherapy

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Oral Presentation

A-10-352-1

Possibility of Generating CMV-specific Cytotoxic T Cells in CMV-Seropositive Colorectal Cancer Patients

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Objective: Colorectal cancer (CRC) is known as the third leading cause of death in many industrialized countries. Recent studies have shown that cytomegalovirus (CMV) peptides can be found in considerable percentages of tumor cells but not in adjacent normal tissue of CRC patients. Therefore, CMV-specific CD8+ T cells may be able to bystander eliminate tumor cells by targeting virus-infected cells. Here, we tried to generate IFN-ϒ-producing CMV-specific CD8+Tcells in a cohort of 6 diagnosed CMV-seropositive CRC patients and 6 healthy controls, and evaluate the feasibility of expanding them for future clinical studies.

Material and Methods: In this study, six cmv+ colorectal cancer patients and six cmv+ healthy controls were examined.Patients' blood samples were obtained immediately before surgical resections in patients who had not received any chemotherapy and radiotherapy treatments. The number and percentage of CMV-specific CD8+/IFNϒ+T cells were evaluated using flow cytometry before and after 14-day culture of PBMCs in the presence of CMV peptides and IL-2 cytokine. Data were analyzed using FCS Express 6plus software.

Results: All six CRC patients and six healthy controls were serologically positive for cytomegalovirus. More than a 2-fold increase was found in CMV–specific CD8+/ IFNϒ+T cells following stimulation by CMV-peptides and IL-2 in six CRC patients and six healthy controls.
Conclusion: The results of this study show that specific stimulation of PBMCs by CMV peptides would be a feasible approach for producing autologous CMV-specific T cells for using in future immune cell therapy of colorectal cancer patients.

Keywords: CMV, Colorectal Cancer, CD8+ T cell, IFNϒ
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Oral Presentation

A-10-435-1

Up-regulation of Gal-9 and PD-L1 Immune Checkpoint Molecules in Patients with Chronic Lymphocytic Leukemia

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Objective: Deviation of host immune response by engagement of inhibitory receptors is one of the well-known mechanisms of tumor cells for immune evasion and survival. Therefore, activation of therapeutic anti-tumor immunity via blockade of immune checkpoint molecules is a promising and accepted approach for cancer immunotherapy. PD-1/PD-L1 and Tim-3/Gal-9 axes are two major pathways in this area, which their contribution has been documented in a variety

of malignancies. In this study, Gal-9 and PD-L1 expression was investigated in leukemic cells from patients with Chronic Lymphocytic Leukemia (CLL).

Material and Methods: Peripheral blood mononuclear cells (PBMCs) were obtained from 25 untreated CLL patients and 15 sex- and age-matched healthy controls. CLL patients were classified into different clinical stages based on the Rai staging system. Total RNA was extracted from all PBMCs and used for cDNA synthesis. Relative expression of Gal-9 and PD-L1 mRNA was determined by Real-Time PCR using β-actin as a housekeeping gene.

Results: Gal-9 and PD-L1 mRNA was significantly more expressed in CLL patients compared to healthy controls ($p<0.0001$ and $p=0.005$, respectively). CLL patients with advanced clinical stages showed higher expression of Gal-9 and PD-L1 in comparison to patients in early clinical stages ($p<0.0001$ and $p=0.004$, respectively).

Conclusion: Our promising results regarding over-expression of Gal-9 and PD-L1 in CLL patients call future complementary studies to more evaluate and confirm these pathways for immunotherapy approaches of this malignancy based on immune checkpoints blockade. Up-regulation of both Gal-9 and PD-L1 in CLL patients with advanced clinical stages introduces them as useful prognostic biomarkers for disease progression.

Keywords: Immune checkpoint, Galectin-9, PD-L1, Chronic Lymphocytic Leukemia

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Poster Presentation

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Design and Validation of an Interferon IFNγ Aptamer

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Objective: Immune dysfunction develops in patients with many cancer types and it may contribute to tumor progression. Mechanisms underlying cancer-associated immune dysfunction need more investigations for Comprehensive understanding. Efficient IFN signaling is critical to lymphocyte function; in cancer disease, patients show IFNγ signaling deficiency at a high rate. Interferon-γ (IFN-γ) is a cytokine which conventionally associated with cytostatic/cytotoxic and antitumor mechanisms during the cell-mediated adaptive immune response IFNγ elicits potent antitumor immunity. A hence, the level of this cytokine is a critical diagnostic challenge in progression cancer. We chose the Aptamer as biorecognition element instead of Antibody, to design a biosensor for quantification of IFN-γ in body liquid. Regards to high affinity of the Aptamer to the specific cytokine and more possibility to make different modifications

Material and Methods: We designed and improved a new Aptamer against IFNγ In silico. To check the correction of designated aptamer we used appropriate thermodynamic parameter with bioinformatics software. Aptamer was synthesized by Microgen Inc. (Seoul South Korea) and chelated with fluorescent nanoparticles.

Results: Affinity and specificity of this innovative nanostructure of Aptamer was analyzed with different spectrophotometric methods. Several experiments were designed as evidence of the high affinity of this kind of Aptamer to IFNγ such as modified Electrophoresis. All of these experiments showed high affinity of the designated Aptamer and high sensitive diagnostic procedure. Analyze the ratio between emission and absorbance wavelengths of the functionalized strand of Aptamer show high affinity and sensitivity and specificity to IFNγ.

Conclusion: IFNγ is a cytokine that plays a pivotal role in antitumor host immunity. We proved that our innovative method for quantification of IFNγ could create significant data; so that it can provide a validated clinical test for monitoring cancer progression in patients.

Keywords: Aptamer, IFNγ, Cancer

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Poster Presentation

A-10-417-1

Anti-proliferative and Apoptotic Effects of Novel Anti-ROR1 Single Chain

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Objective: Receptor tyrosine kinase-like orphan receptor (ROR) proteins are a conserved family of tyrosine kinase receptors that function in developmental processes including cell survival, differentiation, cell migration, cell communication, cell polarity, proliferation, metabolism and angiogenesis. ROR1 has recently been shown to be expressed in various types of cancer cells but not normal cells. Pharmacokinetics and pharmacodynamics of scFv antibodies provide potential therapeutic advantages over whole antibody molecules.

Material and Methods: In the present study, scFv against a specific peptide from extracellular domain of ROR1 were selected using phage display technology. The selected scFvs were further characterized using polyclonal and monoclonal phage ELISA, soluble monoclonal ELISA, colony PCR and sequencing. Anti-proliferative and apoptotic effects of selected scFv antibodies were also evaluated in lymphoma and myeloma cancer cell lines using MTT and Annexin V/PI assays.

Results: In the present study, scFv against a specific peptide from extracellular domain of ROR1 were selected using phage display technology. The selected scFvs were further characterized using polyclonal and monoclonal phage ELISA, soluble monoclonal ELISA, colony PCR and sequencing. Anti-proliferative and apoptotic effects of selected scFv antibodies were also evaluated in lymphoma and myeloma cancer cell lines using MTT and Annexin V/PI assays.

Conclusion: Taken together, our results demonstrate that targeting of ROR1 using peptide specific scFv can be an effective immunotherapy strategy in hematological malignancies.

Keywords: ROR1, Phage display, ScFv, Hematological malignancies, Immunotherapy

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Poster Presentation

A-10-417-2

Isolation and Characterization of Anti ROR1 Single Chain Fragment Variable

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Objective: Receptor tyrosine kinase-like orphan receptor (ROR1) belongs to one of the families of receptor tyrosine kinases (RTKs). RTKs are involved in the various physiologic cellular functions including proliferation, migration, survival, signaling and differentiation. Several RTKs are deregulated in various cancers implying the targeting potential of these molecules in cancer therapy. ROR1 has recently been shown to be expressed in various types of cancer cells but not in normal adult cells. Hence, a molecular inhibitor of extracellular domain of ROR1 that inhibits ROR1-cell surface interaction is of great therapeutic importance.

Material and Methods: In an attempt to develop molecular inhibitors of ROR1, we screened single chain variable fragment (scFv) phage display libraries, Tomlinson I+J, against one specific synthetic oligopeptide from extracellular domain of ROR1 and selected scFvs were characterized using various immunological techniques.

Results: Several ROR1 specific scFvs were selected following five rounds of panning procedure. The scFvs showed specific binding to ROR1 using immunological techniques.

Conclusion: Our results demonstrate successful isolation and characterization of specific ROR1 scFvs that may have great therapeutic potential in cancer immunotherapy.

Keywords: ROR1, ScFv, Phage display technique, Receptor tyrosine kinases

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Young Researcher Session-Other

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Oral Presentation

A-10-449-1

Study of the Maturation and Function of Monocyte Derived Dendritic Cells in Rejected and Non-Rejected Liver Transplant Patients

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Objective: Dendritic cells (DCs) with unique functions and phenotypic characteristics play distinct roles in eliciting key immune responses after transplantation. These cells are key initiators of the immune response leading to acute rejection. The objective of this study was to compare the maturation and function of monocyte derived DCs (MoDCs) in the groups of rejected and non-rejected liver transplant recipients.

Material and Methods: In this study blood samples were obtained from liver transplant patients with the symptoms of acute rejection (n=6) and non-rejected patients (n=7). In these two groups after the generation of DCs from monocytes, expression levels and mean fluorescent intensity (MFI) of DC markers were evaluated by flowcytometry, secretion of proinflammatory cytokines of IL-6, IL-12 and IL-23 were determined by ELISA and gene expressions of TLR2, TLR4 and IL-23 were analyzed by real-time PCR.

Results: The results indicated that in rejected patients compared to non-rejected recipients, expression of markers of CD83 ($p = 0.002$), CD1a ($p = 0.007$) and HLA-DR ($p = 0.02$) in DCs, MFIs for CD1a ($p = 0.007$) and CD86 ($p = 0.009$), secretion of IL-12 ($p = 0.001$) and IL-23 ($p = 0.001$) by DCs and gene expressions of TLR2 ($p = 0.002$), TLR4 ($p = 0.001$) and IL-23 ($p = 0.001$) in DCs were significantly increased.

Conclusion: In liver transplant patients with the symptoms of rejection, increased expression and MFI of DC markers, elevated secretion of proinflammatory

cytokines and increased TLR2, TLR4 and IL-23 mRNA expression levels in DCs can promote acute rejection.

Keywords: Dendritic cells, Liver transplantation, Rejection

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Oral Presentation

A-10-380-1

The Association of Interleukin-16 Gene Polymorphisms with IL-16 Serum Levels and Risk of Multiple Sclerosis

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Objective: Multiple sclerosis (MS) is a chronic inflammatory, demyelinating, and neurodegenerative disease of the central nervous system (CNS) that is immunologically mediated in genetically susceptible individuals. Interleukin-16 (IL-16), a pleiotropic cytokine, is an important regulator of T cell activation, which plays a key role in autoimmune diseases. Single nucleotide polymorphisms (SNPs) in the IL-16 gene may lead to altered cytokine expression or biological activity and these variations may modulate an individual's risk for MS. To test this hypothesis, we investigated association of IL-16 gene SNPs (i.e. rs4072111 C/T, rs11556218 G/T, and rs4778889 C/T) and serum IL-16 levels with risk of MS in an Iranian population.

Material and Methods: We analyzed the three SNPs of IL-16 in 250 MS patients and 400 healthy controls using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). The serum level of IL-16 was assessed by enzyme-linked immunosorbent assay (ELISA).

Results: The IL-16 rs4072111C/T genotype and allele frequencies showed significantly differences between MS patients and controls ($p<0.01$). Statistically significant differences were also found in allele and genotype frequencies of rs11556218 G/T between two groups ($p=<0.01$). The mean serum levels of IL-16 in MS patients were significantly higher in MS patients compared to healthy controls ($p=<0.01$).

Conclusion: In summary, the present study provides the first evidence that the rs11556218T/G and rs4072111C/T polymorphisms of IL-16 gene were significantly associated with increased risk of MS. These results suggest that rs11556218T/G,

rs4072111C/T, and rs4778889T/C polymorphisms of IL-16 may contribute to susceptibility to MS through increased expression of IL-16 levels.

Keywords: Multiple sclerosis, Interleukin-16, Polymerase chain reaction, Polymorphism, ELISA

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Oral Presentation

A-10-116-1

Anticancer and Immunomodulatory Effect of Pomalidomide on Bone Marrow Mononuclear Cells in Multiple Myeloma

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Objective: Pomalidomide is one of the newest anticancer drugs that notable research has yet to be conducted on its anticancer effect. In this study, the anti-apoptotic and immune potentiating effects of pomalidomide were examined on bone marrow mononuclear cells in 10 multiple myeloma patients and 10 control subjects simultaneously.

Material and Methods: The bone marrow mononuclear cells of both groups were cultured with pomalidomide for 48-hour. Apoptosis induction rate, viability, cytotoxicity, and immunomodulatory effect were evaluated.

Results: The results showed that apoptosis and cytotoxicity increased significantly in bone marrow mononuclear cells of multiple myeloma patients cultured in the presence of pomalidomide ($p < 0.05$). However, in the control group, pomalidomide lead to an increase in vital activity of bone marrow mononuclear cells. Moreover, the concentration of IL2 in the presence of pomalidomide was increased significantly in the multiple myeloma group ($p < 0.05$).

Conclusion: It seems that pomalidomide could amplify the immune system and eliminate tumor cells in multiple myeloma patients; however, it has no toxic effect on bone marrow mononuclear cells in controls. Pomalidomide could be introduced as first-line treatment in multiple myeloma as well as relapsed or

refractory one. Therefore, it could be preferred in order to avoid the side effects in normal cells.

Key words: Pomalidomide, Multiple myeloma, Apoptosis, Viability, Interleukin-2
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Poster Presentation

A-10-24-1

Evaluation of the Apoptosis Inducing Activity of Foeniculum Vulgare on Human Peripheral Blood Lymphocytes

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Objective: In the present study, the inhibitory and apoptotic effect of different fractions of Foeniculum vulgare on human peripheral blood lymphocytes was investigated. Foeniculum vulgare belonging to Apiaceae is known as “Raziyane” in Persian. This plant is used for its antioxidant, antimicrobial, antispasmodic and stimulating gasterointestinal motility properties in the traditional medicine.
Material and Methods: In the study, aerial parts of the plant were collected and four fractions including dichloromethane, n-hexane, n-butanol, and water were prepared. BrdU proliferation assay was used to determine the growth inhibitory effect on the proliferative lymphocytes in order to determine if the inhibitory effect observed was due to induction of apoptosis, annexinV/propidium iodide (PI) staining was performed.
Results: Results showed that dichloromethane fraction of Foeniculum vulgare decreased the proliferation of the lymphocytes more than other fractions. This fraction also induced apoptosis in mytogen-activated lymphocytes.
Conclusion: In conclusion, dichloromethane fraction of Foeniculum vulgare showed apoptosis inducing effects on human peripheral blood lymphocytes, suggesting more studies about its possible beneficial effects on treating the autoimmune diseases.

Keywords: Apoptosis, Foeniculum vulgare, Peripheral blood lymphocytes, Autoimmune diseases
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Poster Presentation

A-10-56-1

Association between TNFSF15 Polymorphism and Ulcerative Colitis in Iranian Population

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Objective: Crohn disease (CD) and Ulcerative colitis (UC) are between two forms of clinical manifestation of inflammatory bowel disease (IBD). In UC patient, the mucosa of colon is influence by the excess and inappropriate responses of immune system and inflammation limited to colon but in CD patients, all part of the gastrointestinal tract may be affected. One of the susceptibility Gene for ulcerative colitis disease is tumor necrosis factor ligand superfamily member 15 (TNFSF15). TNFSF are the similar Trans membrane proteins that have an extensive function such as proliferation, apoptosis and expression of inflammatory genes. The aim in this study was to investigate the role of TNFSF15 single nucleotide polymorphism rs3810936, (G/A mutation at the position _15524) in Iranian with Ulcerative colitis.

Material and Methods: SNP was genotyped in 115 cases and 115 controls. 2 ml, of whole blood was collected (in the storage tubes containing EDTA) from registered persons and extraction of DNA was performed from their blood lymphocytes, for this isolation using standard phenolchlorophorm procedure. The DNA of samples was genotyped by Real time PCR and polymorphism was detected by TaqMan assay and SPSS version 23.00 was used to analyse the data.

Results: Our results could not find any significant association of TNFSF15 polymorphisms rs3810936 with UC disease in comparison with controls (P= 0.8). Then the correlation between this polymorphism and type of colitis, age, and sex was examined, and could not find any meaningful association.

Conclusion: Our analysis suggested that this variant in TNFSF15 (rs3810936) did not contribute to UC in study populations. Our results could not confirm the formerly reported association of the studied polymorphism with UC disease in comparison with healthy controls, since multiple ethnic groups resides in all around the country, further study using different ethnicities and/or larger sample

size are required to clarify the role of this polymorphism in the genetic susceptibility of UC in Iranian populations.

Keywords: TNFSF15, Ulcerative colitis, Polymorphism, Genetic
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Poster Presentation

A-10-58-1

OX40 Gene Expression and its Serum Level in Parkinson's Disease

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Objective: Parkinson's disease is a common neurodegenerative disease that mainly affects central nervous system (CNS) and consequently motor system. Inflammation of immune system and CNS has been known as an important predisposing factor for Parkinson's disease. OX40 protein (CD134) is from family of tumor necrosis receptors that acts on T cells surface. Increased expression of this protein has been known as a factor for increase in inflammation and initiation of NF-kappaB signaling pathway in different diseases. This study investigates OX40 gene expression in the serum protein level and mRNA.

Material and Methods: 20 people with Parkinson's disease and 20 healthy people, as controls, were enrolled in the study. Measurement of OX40 gene expression was conducted by real-time PCR and serum protein level measured by enzyme-linked immunosorbent assay.

Results: The mean expression rate of OX40 gene in the patients increased compared to the controls yet insignificantly ($p>0.05$). The mean serum concentration of OX40 protein increased in the patients yet insignificantly ($p>0.05$).

Conclusion: The expression of this protein could be measured to predict and confirm diagnosis of Parkinson's disease and help develop new treatment and prevention approaches through suppression of this interaction. However, additional clinical, cellular, and interventional studies should be conducted to confirm the treatment approaches.

Key words: Parkinson's disease, OX40, Neurodegenerative
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Poster Presentation

A-10-184-1

The Biofilm Production Facilitates Bacterial Evasion from Humoral Immune Response

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Objective: The biofilms production leads to a stable condition that bacterial aggregations can survive in structured groups. The biofilm-producing bacteria cause a chronic, recurrent and development of antimicrobial resistance infection. In addition, the biofilm is resistant to phagocytes and complement activity. The effect of the biofilm production on the bacterial evasion from the protective antibody response was evaluated by an in-house ELISA.

Material and Methods: The overnight culture of standard strain of Escherichia coli (ATCC 25922) in BHI broth at 37º C were diluted 1/100 with BHI media and incubated at 37º C. After adjusting to a 0.5 MacFarland unit turbidity standard, 200 µl were transferred to each micro plate wells and incubated 24 hours at 37º C (biofilm plate). The control was prepared in the same manner, but incubated at 4ºC (control plate). The biofilm formation was proved by crystal violet staining assay. The sonicated E. coli antigens were coated on polystyrene microplate and used for ELISA (test plate). Then 20 µg/ml rabbits polyclonal IgG against planktonic E. coli were serially diluted at the biofilm and control plate wells; the plates were incubated 1 hour in room temperature. The whole solution in each column of biofilm and control plate transferred to a separate column of test plate carefully and incubated as the mentioned. The same rabbit IgG was added to another column of test plate directly and it was serially diluted. The plates were washed and HRP-conjugated goat anti-rabbits IgG were added to the wells. After addition of substrate and stop solution, the optical density was measured at 450 nm by spectrophotometer.

Results: The results showed that the biofilm production significantly reduced the antibody attachment to bacteria.

Conclusion: The biofilm production may provide a physical barrier that hindrance the antibody-epitope binding event; also, change in their chemicals properties as ionic charge, might reduce antibody binding to bacterial cell wall.

Keywords: Bacteria, Biofilm, Antibody
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Poster Presentation

A-10-184-2

The Effects of Carbohydrate Fractions of Gracilaria Seaweed on Mice Immune Response

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Objective: Red seaweeds are the sources of polyanionic polymers that play a foremost role in ionic, mechanical and osmotic functions. The carbohydrate elements of marine algae are found in the extracellular matrix. The Gracilaria polysaccharides have antitumor and antiviral activity and minimize stress. Although algae polysaccharides modulate a large number of biological activities, the antimicrobial activity has been rarely reported.

Material and Methods: The G.corticata tissue was submitted to mechanical stirring for 6 h at room temperature (25°C) in HCL 0.1 M at 10% (w/v). The suspension was filtered and the solution was neutralized with 0.5 M NaOH. The solution was then centrifuged and two volume of ethanol was added to the upper part. The supernatant dissolved and dialyzed against phosphate buffered saline. The extract was fractionated on DEAE-C column by NaCl gradient. The obtained fractions were dialyzed against water and analyzed for carbohydrate contents. The antimicrobial activity of each fraction was evaluated by micro-dilution method against six bacteria including: Staphylococcus aurous, Escherichia coli, Methicillin-resistant Staphylococcus aureus (MRSA), Salmonella typhimurium, Pseudomonas aeruginosa and Aeromonas hydrophila. In addition, the obtained fractions were orally administrated 100µg/day for 7 days to 10 groups of 4 adults

NMARY mice. The effects of various fractions on some of immune response index as antibacterial and complement activity of serum and humoral immune response against sheep red blood cell were evaluated.

Results: In-vitro analysis showed that, out of the 10 fractions which obtained from Gracilaria extract, the most of them have antibacterial effects; however oral administration of the fractions have no significant effects on antibacterial and complement activity of mice serum. The fraction 1, 2, 5, and 6 significantly induced the humoral immune response against SRBC.

Conclusion: The antibacterial activity of the fractions may be neutralized in gastrointestinal tract. The more research would be performed to purify the effective materials and clarify the reason of humoral immune response induction.

Keywords: Gracilaria, Carbohydrate, Immune response

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Poster Presentation

A-10-184-3

The Effect of Oral Administration of Mesobuthus eupeus Scorpion Venom Fractions on Immune Response

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Objective: Scorpion venom contains biological compounds that could effects on the physiologic system of all organisms. Many elements such as immunosuppressive, chemotactic and anti-inflammatory peptides were determined in venom and are potential therapeutic agents. This study investigated the effects of oral administration of venom fractions of Mesobuthus eupeus scorpion on mice immune responses.

Material and Methods: The M. eupeus venom was dissolved (12 mg/ml) in stabilizing buffer (0.05 M Tris-HCl, pH 8.6) and loaded on DEAE cellulose column. Elution of the bound elements was performed by a linear gradient of sodium chloride in stabilizing buffer and the fractions were dialyzed against phosphate

buffered saline. The 10% suspension of SRBC was injected intra-peritoneally to ten groups of four mice in each. The 0.5 ml of each fraction, which contains 100 µg of protein, was administrated orally for 7 days to each group. The venous blood was collected 10 days after the injections. The effects of oral administration of venom fraction on anti- SRBC antibody titer, the serum antibacterial activity against Escherichia coli and Staphylococcus aureus and complement activity of sera were tested by direct haemagglutination test, micro dilution assay and hemolytic activity in agarose gel containing 1% rabbits RBC, respectively.

Results: According to results, out of the 12 fractions, which extracted from venom, the fractions 1, 5, 6, 8, 11 and 12 induced the humoral immune response against SRBC; whereas, the fractions 4 display suppression effect. No significant difference observed in antibacterial and complement activity of the treated group's serum.

Conclusion: As reported before, the scorpion venom absorbed through oral administration; also, the induction of humoral immune response by S.C injection of venom fractions of M. eupeus was reported previously. Because of more safety, the oral administration can facilitate the venom application in medical treatments.

Keywords: Venom, Mesobuthus eupeus, Immune response, Mice

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Poster Presentation

A-10-206-1

Evaluation of Serum IgM Anti-phosphatidyl Choline Antibody Level in TB Patients in Zahedan

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Objective: Tuberculosis is caused by an acid-fast bacillus, Mycobacterium tuberculosis. The most common manifestation of TB is pulmonary tuberculosis. WHO estimated the prevalence of TB 33 cases per 100000 populations in Iran in 2014.IgM anti-phosphatidyl choline antibody is an antibody producing in response to plasma

membrane`s phospholipids of Mycobacterium tuberculosis. Sputum microscopy and culture is the gold standard methods to monitor TB treatment. Alternative methods used in smear or culture negative patients. IgM anti-phosphatidyl choline antibody level is suggested as a biomarker for monitoring, treatment response in TB patients. The purpose of the current study was to determine sensivity and specifity of this method in monitoring of drug therapy in TB patients.

Material and Methods: It was a cross-sectional study on 74 pulmonary TB cases (by convenience sampling) referred to Boo Ali hospital of Zahedan in 2012-2013. The smear positivity rate and cavitation existence determined. Peripheral blood taken from patients and level of IgM checked out. After two month of acute phase of disease above, process repeated. Then sputum smear studied and level of IgM changes checked out. Statistical analysis of the data was done by SPSS software. The data statistically analyzed using Paired-t test, t-test, correlation Spearman and χ 2 test, mean and standard deviation (P-value < 0.05).

Results: Seventy-four patients entered the study, was smear positive. After the study 69 cases (٪93.2) became smear negative.49 cases (٪66.2) had cavity in chest X-ray. There was a significant difference between serum IgM level before and after treatment. There was an insignificant correlation between positivity rate of sputum smear and IgM serum level, with treatment. There was a significant relationship between rate of IgM serum level decreasing and the sputum smear positivity rate with medical intervention.

Conclusion: The results indicated that serum IgM anti-phosphatidyl choline antibody level could be used to monitor treatment in TB patients especially in cases without adequate sputum. However, sputum smear is the gold standard in TB diagnosis, it is not sensitive and can be negative in the beginning. It is suggested a comprehensive study perform to find out better method for diagnosis, treatment, and monitoring of treatment.

Keywords: TB, Anti phospholipid antibody, Phosphatidyl choline, Monitoring of treatment

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Poster Presentation

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Elavated CSF Concentration of Macrophage Inflammatory Protein-1α and β in Relapse Remitting Multiple Sclerosis Patients

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Objective: Macrophage inflammatory protein-1α and β (MIP-1α and MIP-1β) are considered as inflammatory cytokines and involved in progression of various neurologic disorders as multiple sclerosis (MS). The aim of this study was to evaluate the relationship between CSF levels of mentioned inflammatory cytokines and relapse remitting multiple sclerosis (RRMS).

Material and Methods: In this case-control study, study population contains 40 unrelated patients with RRMS and 40 age and sex matched subjects as control group were enrolled. CSF samples obtained from all patients and control group subjects and levels of MIP-1α and MIP-1β were determined in CSF.

Results: The mean CSF level of MIP-1α was significantly different between RRMS patients and healthy controls (29.71±18.56 vs. 10.62±6.85, P<0.01) (Figure 1). The CSF levels of MIP-1β was also higher in RRMS patients compared healthy controls (33.62±21.50 vs. 13.74±4.90, P<0.01). We found a positive correlation between CSF levels of MIP-1α and disease duration (r=+0.32 and P=0.04) and EDSS (r=+45, P=0.03). We also found a positive correlation between CSF level of MIP-1β and disease duration (r=+0.76 and P<0.01) and EDSS (r=+0.73, P<0.01).

Conclusion: This study is the first study that confirms the involvement of MIP-1β in RRMS, and MIP-1 α and MIP-1 β contribute in MS pathogenesis.

Keywords: Macrophage inflammatory protein, Multiple sclerosis, Cerebrospinal fluid

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Poster Presentation

A-10-397-2

The Prevalence of Brucellosis: Study of Patients from Northwest of Iran from 2010 to 2014

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Objective: Brucellosis is a serious re-emerging zoonos is which vastly afflicts human health and animal productivity. Brucellosis is still one of the most challenging issues for health and the economy in many developing countries such as Iran. Incomplete epidemiological data particularly from developing countries and remote areas reflects partly the lack of accurate disease diagnosis and under reporting. This necessitates the comprehensive review of past experiences and disease trends over time to tailor proper intervention and control strategies. This study investigated the epidemiological features of brucellosis in in west of Iran.

Material and Methods: This retrospective descriptive study was planned to determine the epidemiological features of brucellosis in west of Iran, as this is one of the most endemic areas in the country. All cases of human brucellosis admitted to clinical centers, the study was complemented by a detailed patient evaluation and disease description. Data collection was performed using epidemiological questionnaires from the private and public sectors over a 4-year period (2010–2014).

Results: In total, 4186 cases of brucellosis were reported: age mean was 34.56 year; male (54.4%) female (45.3%), cases from rural areas (85.85%), and the animal contact rate was (71.55%) using history of unpasteurized dairy products (95.5%) Vaccination Experience livestock in the region (54.8%) infected of other family members in the past year (17.35%) (P=0.001).

Conclusion: These results indicate that human and livestock brucellosis persisted in west of Iran across the study period albeit with a fluctuating incidence. Health-related interventions need to empower communities at risk, the current situation necessitates more appropriate disease surveillance and improving the control and containment strategies in order to alleviate disease burden on both human and animal populations.

Keywords: Brucellosis, Epidemiology, Control and containment

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Poster Presentation

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Cerebrospinal Fluid and Serum Markers of Inflammation in Patients with Multiple Sclerosis

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Objective: Multiple sclerosis (MS) is the most common inflammatory demyelinating disease of the central nervous system (CNS). The canonical Th1 cytokine, interferon-gamma (IFN-γ), has diverse roles in innate and adaptive immunity, inflammation, Th1 responses, and suppression of autoimmunity and associated pathology in a context and disease specific manner. C-reactive protein (CRP) is an acute phase protein that contributes to innate and adaptive immunity and is induced by cytokines such as interleukin-6 (IL-6), IL-1, and tumor-necrosis factor-a (TNF-a).
Material and Methods: Cerebrospinal fluid (CSF) and serum samples were recruited from relapsing remitting multiple sclerosis patients (n=40) and healthy subjects (n=40). CSF and serum level measurement of IFN- γ and CRP were performed using enzyme-linked immunosorbent assay (ELISA).
Results: CSF and serum levels of IFN- γ and CRP were significantly higher in MS patients compared to healthy control group (P<0.01). We found positive correlations between the CSF and serum levels of IFN- γand expanded disability status scale (EDSS) of the MS patients (r=+0.80, P<0.01; r=+0.34 and P=0.03, respectively). Moreover, there was a significant association between the serum levels of CRP and EDSS of the patients (r=+0.54 and P<0.01).
Conclusion: Our findings reveal the increased CSF and serum levels of IFN- γ and CRP in RRMS patients. Our data suggest that determining serum levels of IFN- γ and CRP could be useful for understanding and monitoring the inflammatory response in MS. Furthermore, CSF levels of IFN- γ is more reliable and useful than its serum levels for monitoring of severity of disability in MS patients.

Keywords (3-5 word): Multiple sclerosis, Interferon-Y, C-reactive protein, Inflammation, ELISA
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Poster Presentation
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A Report of Seroprevalence to *Toxoplasma* Infection Referrers to Center Laboratory Kermanshah University of Medical Sciences during 1 year (2016)

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Introduction: Toxoplasmosis, caused by the protozoan parasite Toxoplasma gondi, is one of the most common parasites of man and other warm-blooded animals. Humans are infected through contaminated food , water, and blood transfusion, organ transplantation , from mother to fetus through the placenta , once the host becomes immunocompromised or immunosuppressed. **Materials and Methods**: In this study, 581 blood samples were collected from people suspected to Toxoplasmosis Referrers to Center Laboratory Kermanshah University of Medical Sciences during 1 year (2016), Anti Toxoplasma IgM, and IgG concentrations were determined using chemy-luminescence method.

Results: Totally 133 antibody positive sera obtained, 15 (11.27%) were from males while 118 (88.72%) were from females showed positive levels of anti-Toxoplasma IgG and IgM, respectively. The highest rate of seropositivity was observed in 14 to 50 year-old women. The peak of infection was observed among patients in the age group of 14 -70 in both sexes. While 4(3%) positive under 14 years and 6 (4.5%) Suspicious samples were found in females.

Conclusion: This study indicated Toxoplasma IgM and IgG were found to be significantly associated with age of the people. Histories of farming, stillbirth, eating of raw vegetables were associated with seroprevalence of Toxoplasma Antibodies. The results showed that high infection rate in this population could not be ignored and the seroprevalence rate need to include the testing of Toxoplasma as a part of the investigation that should be run on people for us to educate about the risk factors that lead to Toxoplasma infection.

Keywords: Toxoplasmosis, IgM, IgG, Chemy-luminescence, Kermanshah
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