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An assessment of Aflatoxin level in wheat samples of 5 top provinces of Iran

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Abstract

Introduction: Wheat can be invaded by different microorganisms, especially fungi. Fungi are among microorganisms with highly powerful metabolic activity. Such metabolic activities during the fungi growth on wheat are accompanied by secretion of enzymes and compounds termed fungal toxins. Aflatoxin belongs to a group of fungal toxins known as mycotoxins. Aflatoxin is associated with both acute and chronic toxicity in animals and humans including acute liver damage, liver cirrhosis, and liver cancers. On the other hand, they cause different diseases in wheat or the decay of wheat grains in the farms and warehouses. Materials and methods: In the present research, wheat samples were provided from 5 provinces of the country (Mazandaran, Guilan, Zanjan, Kermanshah, and Khuzestan) in different places and their Aflatoxin production levels were studied by using ELISA method. Results: The average and standard deviation of 14 samples from the 14 cities were tested, that they were 8.32 and 3.78, respectively. These statistics indicate the presence of Aflatoxin in newly harvested domestic wheat. After Pearson’s statistical studies and the determination of correlation and significance in p<0.05, it was found that toxin level in wheat and its level in mixed flour can be inversely related to each other (PC: -0.135), and this correlation was not statistically significant (sig: 0.65). Thus, according to the standard values, for feeding and food there could be serious attention to the cumulative effects of toxins. Conclusion: There is a serious risk and this issue should not be underestimated in the cities and provinces in which the study was conducted. The maximum values that were found respectively were more than standards 30% up to 100%, so a serious risk is considered.

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Detection of human cytomegalovirus by using PCR in immunocompromised persons

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Abstract

Introduction: Human cytomegalovirus (HCMV) is a member of herpesviruses family and recently has been recognized as an immunodeficient virus, it’s so important because most of people have it. Because of this reason and clinical protests of infected patients to this virus caused by reducing levels of their immune, the aim of this study was to detect the CMV virus quickly and check the accuracy of the two methods of Real-Time PCR and cytochemical in immunocompromised people for HCMV defects. Materials and methods: 100 blood samples were collected from immunocompromised persons in Tehran. Real-Time PCR and cytochemical staining were used as the two methods for detecting HCMV. The first method was based on the TaqMan and the second one, on characterizing cell morphological identification. Results: The positive PCR test results were 36% between 40 cases and 21% between 35 cases for cytochemical. It was also found that the maximum prevalence occurred in the summer with 34% and the minimum with 22% that belongs to the autumn. However, a significant relationship didn’t observe between the prevalence of HCMV and the season. Conclusion: The results showed that, with an accurate Real-Time PCR, we can recognize HCMV immunocompromised people. But cytochemical stain method can be used along with this method for the final confirmation and for a better diagnosis. It was also found that, the highest rate of HCMV infection, either latent or active form, is related to the fall season, but this association was not significant.

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Keywords: Human Cytomegalovirus (CMV), Immunodeficiency, Cytochemical staining, Real-Time PCR.

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Detection of HTLV and CMV in pregnant women by Real-Time PCR

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Abstract

Introduction: Maternal infection with HTLV1, 2 and CMV during pregnancy is frequently associated with transplacental transmission to the fetus. Early diagnosis of HTLV and CMV in pregnant women is necessary to get effective treatment and prevent fetal complications. The present study aimed to assess the use of PCR and compare it with enzyme-linked immunosorbent assay (ELISA) for detection of HTLV and CMV infections in pregnant women. Materials and methods: Forty six pregnant women were included in this study ranging in age from 20-35 years selected from patients attending an outpatient clinic of the immunology and virology Department at Guilan University Hospital, over a six month period. They were tested for the presence of HTLV and CMV DNA in their blood by PCR and specific antibodies to HTLV and CMV by ELISA. The results were recorded to evaluate the best technique for detection of HTLV and CMV infection. Results: 37 (80.4%) cases out of 46 subjects had positive results for ELISA anti HTLV and CMV (IgG) in this study, and 15 (32.6%) cases had positive results for ELISA anti HTLV and CMV (IgM). Two cases (4.3%) had positive PCR results, and 44 cases (95.7%) were negative. Sensitivity and Specificity of ELISA IgG were 100% and 20.6%, respectively, and IgM was 100% and 70.5% respectively when compared with PCR. Conclusion: The results suggested that screening the pregnant women for HTLV and CMV antibodies using ELISA is a specific and sensitive tool for the early identification of patients exposed to HTLV and CMV. This information can be used as an alarm for babies at high risk of developing serious disabilities.

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Keywords: ELISA, PCR, CMV, HTLV, Detection, Pregnant women.

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Identification of antibiotic residues in poultry-packing by FPT and HPLC methods

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Abstract

Introduction: At the present study, the antibiotics are used to treat and improve the quality in industrial poultry products. The residual antibiotics can make several side effects in human, including; antibiotic resistance, allergic reactions, mutagenesis and the natural flora of the body. Materials and methods: In this study, four plate test (FPT) were used for screening of antibiotic residues. Leachate from different parts of the poultry-packing was prepared. The blank disks impregnated with latex. Then they were used against Bacillus subtilis (in pH 6.7, 2.8) and Micrococcus luteus (in pH 8) by using Disk Diffusion method. After 24 hours incubation at 37°C, inhibition zone around the disk indicated the presence of antibiotics in chicken's meat. Supplementary the test of HPLC was done on positive samples to recognize the variety and amount of antibiotics on them. The quantity of penicillin antibiotic was tested in this method. Results: 25 samples from 5 parts of the chicken were tested, including wing, breast, thigh, heart and liver. The results showed that, all heart and liver samples (100%) were contaminated with antibiotic residues. But the amount of antibiotics in wing, breast and thigh samples was detected in the normal range. Also, the inhibition zone in heart samples was more than liver samples. The presence of residues penicillin was proven in HPLC test and its amount was calculated 170.5 ppm in liver and 7.3 ppm in heart that was over limitations. Conclusion: In this study, it was trying to find just one kind of antibiotics by two methods. Therefore, to reach the correct diagnosis from other antibiotics, more studies are needed.

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Keywords: Antibiotic residues, Poultry-packing, FPT, HPLC.

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Study of the diagnosis and treatment of prion diseases

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Abstract

Introduction: With the discovery of the prion protein (PrP), immunodiagnostic procedures were applied to diagnose Creutzfeldt–Jakob disease (CJD). Materials and methods: Before the development of the conformation-dependent immunoassay (CDI), all immunoassays for the disease-causing PrP isoform (PrPSc) used limited proteolysis to digest the precursorcellular PrP (PrPc). A subset of 18 regions of patients brain with sporadic CJD (sCJD) was examined by histology, immunohistochemistry (IHC), and the CDI. Results: Three out of 18 regions showed consistently positive by histology and 4 out of 18 by IHC for the sCJD patients. In contrast, the CDI was positive in all 18 regions for all sCJD patients. In both gray and white matter, 90% of the total PrPSc was protease-sensitive and thus, it would have been degraded by procedures using proteases to eliminate PrPc. Findings argue that the CDI should be used to establish rule out the diagnosis of prion disease when a small number of samples is available as it is the case with brain biopsy. Conclusion: IHC should not be used as the standard against which all other immunodiagnostic techniques are compared because, an immunoassay such as the CDI, is substantially more sensitive.

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Keywords: CJD, Prion disease, Immunohistochemistry (IHC), Treatment, Diagnosis.

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Evaluation of the degeneration in liver after hepatitis and its relationship with Aflatoxin B in guilan province

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Abstract

Introduction: Hepatitis is an inflammation of the liver that causes pain and swelling. In the liver, blood waste is dismantled. When the liver is inflamed, your task is not doing well in cleaning the blood. Initial civilized societies in the area of Mesopotamia knew the liver is the heart of life. Because it seemed like, the liver is the accumulation of the blood in the body. Causes of the hepatitis are numerous. Hepatitis is caused mainly by one of the five hepatitis viruses. Hepatocellular carcinoma (HCC) is one of the most common malignancies worldwide. The aim of this study was to investigate the lesions of the liver and its relationship with Aflatoxin levels in serum samples of the patients with hepatitis B. Materials and methods: The study included 25 hepatitis-positive sera collected from hospitals in Rasht city and was tested by ELISA. Between 25 samples of which there were a total of Aflatoxin B (B1 and B2). Then the patients liver for the possible situation awareness and the effectiveness of Aflatoxin on the situation, using the results of ELISA and amounts of blood markers (ALT, AST, ALP, BIL) derived from the patients’ blood test results, calculations help SPSS statistical software to analyze data and communicate and influence between the factors involved there. Results: A significant results occurred among a group of these factors, and activity of liver enzymes (ALT, AST, ALP) in hepatitis significantly increased over time, which can damage liver cells to approve or cholestasis. Also according to the conclusion that bilirubin testing, testing is not appropriate to assess the condition of the liver. Because usually the cause of the liver failure is changed. Conclusion: The amounts of Aflatoxin B obtained from the ELISA (hepatitis B and C synergistic effect of the toxin) were approved. The result can be total Aflatoxin B as a contributing factor in the progression of hepatitis.

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Keywords: Hepatitis, Degeneration in liver, Aflatoxin B.

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Clinical audit for safe surgery in Shahroud medical university’s hospitals, 2015-2016

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Abstract

Introduction: One of the safety aspects in hospitals is patient safety. Studies show that 10% of patients in hospitals suffer from medical errors and it’s harmful consequences while in some cases the errors can be prevented. Clinical audit ensures us with the standards and the proper treatment. According to the importance of patient safety and the need to calculate the norms and standards we decided to do a study with the aim of clinical audit for safe surgery in Shahroud medical university’s hospitals. Materials and methods: In this descriptive study, research environment was operating rooms of Shahroud medical university’s hospitals between 2015-2016. The study surgical samples were selected randomly. Data was collected with WHO surgical safety checklist in the operating room. The checklist contained three parts. The first stage (Actions before anesthesia) contained 8 phrases, the second stage (pre-cut patient’s skin actions) contained 10 phrases, and the third stage (actions before patient leaving) contained 5 phrases. Validity and reliability of study tool were determined by content and face validity and Inter-rater coefficient respectively. Data were analyzed by SPSS/16. Results: 54.26% of the safe surgical standards was observed in the operating rooms of Shahroud hospitals. 76.65% of surgical safety standards before anesthesia, 53.29% after unconsciousness and before the incision and 32.86% after the wound closure until the patient out of the operating room were respected. Conclusion: Since the criteria of safe surgery is below the standards suggested by the World Health Organization, hospital managers, supervisors and operation room heads should recognize the importance of patient safety as a serious issue and necessary arrangements must be taken for safety improvement.

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Elderly quality of life and co-morbidity in Iran

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Abstract

Introduction: Elderly population and longer life expectancy are a glorious achievement for humans, and they are also a huge victory for public health care. Actually, this achievement is the result of economic and social development, and it is one of the biggest challenges of our time too. The aim of this study is to evaluate the effects of demographic factor and co-morbidity on elderly quality of life (QOL) and to investigate the possible risk factors that disrupt QOL. Materials and methods: This is an analytical-descriptive and cross-sectional study. 216 elderly people (60 years and above) suffering from a minimum of two diseases were selected by the simple classified random sampling method. For data collection researchers used a demographic information and LEIPAD QOL questionnaire. Results: Using Binary Logistic Regression Analysis, the poor QOL was higher in females than males, (OR=5.08, CI%95=1.69–15.25) and among self-employed than unemployed (OR=7.42, CI%95=1.90–33.00). The elderly people with higher co-morbidity rates had a poorer QOL comparing to those who had a lower co-morbidity (OR=6.66, CI%95=2.27–19.57). The QOL was higher in subjects owning a private house than those without it (OR=0.17, CI %95=0.04–0.76). There was no significant association between the other study variables and the QOL. Conclusion: According to the results, the elderly QOL was related to different variables such as co-morbidity, gender, job and residence which could be considered by health authorities to define priorities in a strategic planning.

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Keywords: LEIPAD, Quality of life, Elderly, Co-morbidity.

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Codification of Islamic Republic of Iran's emergency medical services (EMS) native reaction protocol to suspected Ebola patients based on world protocols

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Abstract

Introduction: Biological threats are one of the greatest dangers ahead of country’s national security. Ebola haemorrhagic fever is one of these threats that there is no guideline for dealing with suspected cases of the disease in Emergency Medical Services (EMS) in Iran. This study aimed to develop native guidelines reaction of the Emergency Medical Services of the Islamic Republic of Iran face of patients suspected of having Ebola have been conducted using the guidelines. Materials and methods: This study, literature review was conducted by library studies. At first we identified the domestic and international organizations and centers and visit the sites and available information resources, proper keyword search and all guidelines and contents dealing with Ebola collections and localized and at the end of comprehensive charts to determine the behavior of the transfer of suspected Ebola care and pre-hospital emergency personnel were provided. Results: Based on these overview, guidelines should be established native compilation which included planning and preparation, screening (telephone triage) patients, special assessment team via telephone calls and transmit, made necessary coordination with other organizations and units within and outside the organization, preparation for patient transport, preparation and carrying out of activities after transfer and the process of evaluation after the transfer. Conclusion: To succeed in confronting with these diseases EMS and similar diseases in addition, it needs to write native guidelines for each country according to the generalities mentioned, all organizations and institutions were involved to start working in concert and the instructions and practice maneuvers again and again for the review and bug fixes.

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Keywords: Infectious haemorrhagic fever, Ebola, Bioterrorism, Guidelines, Medical Emergency Services (EMS).

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Protective and antioxidant effects of *Echium amoenum* anthocyanin-rich extract in human endothelial cells (HUVECs)

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Abstract

Introduction: *Echium amoenum* Fisch. & C.A.Mey. is used for the treatment of various diseases in traditional medicine. This plant is a major source of anthocyanins with beneficial cardiovascular properties such as anti-atherosclerotic and antihypertensive effects. In the present study, the protective and antioxidant effects of anthocyanin-rich *E. amoenum* extract were evaluated on human vascular endothelial cells (HUVECs) under oxidative stress. Materials and methods: Cell viability and oxidative status were assessed on H2O2-induced oxidative stress (0.5 mM H2O2 for 2 h) in HUVECs pretreated by anthocyanin-rich extract from the petals of *E. amoenum* (25–1000 µg/ml). Cytoprotective effect of the extract was evaluated by 3-(4, 5- Dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide (MTT) assay. The hydroperoxides concentration and ferric reducing antioxidant power (FRAP) were assessed in intra and extra-cellular fluid of pretreated cells. Results: Pretreatment of HUVECs with *E. amoenum* extract at the concentrations of 100–1000 µg/ml reduced the cell death resulted from the exposure to H2O2 in a concentration-dependent manner. *E. amoenum* extract decreased hydroperoxides concentration and increased FRAP value in both intra- and extra-cellular fluid at different concentration ranges. Moreover, it did not show cytotoxic effects at the concentration range of 25–1000 µg/ml. These results suggest antioxidant and protective effect of anthocyanin-rich extract of the petals of *E. amoenum* against H2O2-induced oxidative stress in HUVECs. Conclusion: Further investigations are needed for understanding the detailed mechanisms of cytoprotective effects of this traditional herbal medicine.

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Keywords: *Echium amoenum*, HUVECs, Oxidative stress, Antioxidant.

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Effects of *Cannabis sativa* extract and radiation in melanoma cells in vitro

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**Abstract**

**Introduction:** Melanoma causes the highest number of skin cancer-related deaths worldwide. Although considerable research has been conducted, prevention and early detection are the only effective ways against melanoma. Thus, new treatment methods are essential for the management of this life-threatening disease. **Materials and methods:** In this study, we investigated the efficacy of *Cannabis sativa* (*C. sativa*) extract alone or in combination with single radiation dose (6 Gy) in B16F10 mouse melanoma cells in an extract dose-dependent manner. Administration of *C. sativa* extract alone or alongside radiation substantially inhibited melanoma cell viability and proliferation in the extract dose response-dependent manner. The inhibition of melanoma cell viability was paralleled with an increase in necrosis but not apoptosis when melanoma cells were treated with *C. sativa* extract alone. **Results:** Radiation alone did not have any antiproliferative effects, and radiation also did not synergize antiproliferative effects of the extract when the extract and radiation were combined. Our data suggest that *C. sativa* extract may have important health and physiological consequences on melanoma. The results of this study also suggest that B16F10 mouse melanoma cells are radio-resistant. **Conclusion:** These findings in turn may lead to identification of new therapeutic strategy for the management of melanoma.

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**Keywords:** B16F10 mouse melanoma cells, Treatment of cancer, Melanoma, Cell viability, Cell death.

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A comprehensive model for the characterization of cognitive processes

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Abstract

Introduction: To propose a model for the determination and characterization of mental activities. Materials and methods: The cognitive processes under study are analyzed into six cognitive events according to Bloom’s taxonomy. For each cognitive event the 6 dimensions including the cognitive activities are assigned using the relevant action verbs using ontology measures. The input and the output concepts are defined for each event in sequence of the cognitive process. The internal relations and the input relations as well as the output relations are described. The alternative routes for a given cognitive process are compared to judge on the best and optimal processes. Results: In our model four major assumptions are considered as the bases of this model. First, it is supposed that a cognitive process exists underling every task performance by an individual. Second, we presume that in every cognitive process there are six hierarchical levels of cognitive events, as worked up in the Bloom’s taxonomy revision study during 1996 to 2001 namely: remembering, understanding, applying, analyzing, evaluating and creating. Third assumption poses that every mental process including a sequence of some cognitive events each characterized by a 6-tuples, as elaborated by Xujie Zhang and colleagues and defined by e=<A, O, T, V, P, L> formula. The last and the fourth assumption implies that the basic unit of cognition is concept, that is characterized by a 5-tuple. In cognitive informatics, logic, linguistics, psychology, software engineering, and knowledge engineering, concepts are identified as the basic unit of all thinking processes and sub-processes. An abstract concept c on a semantic context is a 5-tuple, and formulated by Yingxu Wang as: c = (O, A, Rc, Ri, Ro). Concept is the currency of thinking as the output of one cognitive activity and the input of another in the sequence of events of a cognitive process, as previously mentioned. Conclusion: Testing the model by the exam questions in medicine showed that for every cognitive task performance different and specific cognitive processes may be employed, depending on the subject, objectives and their properties including: the concept characteristics and the event features. The type of each activity is identified by the action verbs allocated to each cognitive event, according to Bloom’s taxonomy.

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Keywords: Cognitive process, Events, Concepts, Algebraic model.

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The effectiveness of preventive nursing measures on the incidence of delirium in patients undergoing open heart surgery

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Abstract

Introduction: Delirium is one of the most common medical disorders in the patients of ICU, leading to an increase in the mortality and morbidity rate. Materials and methods: Two groups, including 36 cases of cardiac surgery in each, were recruited. Interventions included the implementation of nursing preventive measures by a researcher and a trained companion in the ward. Patients’ information was completed the day before surgery. Delirium incidence investigated with NeeCham questionnaire on a daily basis from the first day of the heart surgery till the fifth day and checklists of variables associated with delirium incidence were completed. For data analysis, descriptive statistics were employed using SPSS software, version 21. Results: Delirium incidence in the control group on the second, third, fourth, and the fifth day after heart surgery was 44.4%, 38.9%, 19.4% and 8.3%, respectively. This rate in intervention group was 25%, 19.4%, 8.3% and 0%, respectively, showing no significant difference. However, the risk of delirium incidence in the control group was 5.3 times more than intervention group (p=0.009). Conclusion: Nursing preventive interventions were not effective in reducing the delirium incidence among the patients participating in this research. However, due to considerable reduction of the risk of delirium incidence in the intervention group compared to the control group, these interventions can be used as an influential strategic training of nurses without any additional cost in the ICU.

Keywords: Delirium, Prevention, Heart surgery, Nursing care.

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Prevalence and risk factors associated with preterm birth in Iran

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Abstract

Introduction: Preterm birth is a leading cause of perinatal mortality and long term morbidity. Present study was conducted to determine prevalence and risk factors associated with preterm birth in Ardabil, Iran. Materials and methods: A cross – sectional study conducted between Nov 2010 and July 2011 in all three maternal hospitals in Ardabil. All the live newborns during the study period were investigated. Of 6705 live births during the study period 346 births occurred in < 37 weeks were taken as a case and 589 normal neonates were taken as a control.

Data were obtained after delivery from review of prenatal and hospital delivery records. Univariate and multivariate logistic regression analysis were applied to obtain magnitude of association between independent variables and preterm birth. Results: The incidence of preterm birth was 5.1% and history of previous preterm birth (OR=12.7, CI:3.9-40.4, P=0.000), hypertension during pregnancy (OR=7.3, CI:2.1-25.4, P=0.002), Oligohydramnios (OR=3.9, CI:1.6-9.5, P=0.002), spouse abuse (OR=3.7, CI:1.1-11.8, P=0.024), preeclampsia (OR=3.6, CI:1.3-10.3, P=0.014), premature rupture of membrane (OR=3.1, CI:1.9-4.9, P=0.000), bleeding or spotting during pregnancy (OR=2.0, CI:1.0-3.8, P=0.037), Hyperemesis Gravidarum (OR=2.0, CI:1.1-3.8, P=0.015), urinary tract infection in 26-30 weeks of pregnancy (OR=1.8 CI:1.0-3.2, P=0.044), middle and lower social class (OR=1.6, CI:1.0-2.3, P=0.021), Diastolic blood pressure <60mmg (OR=1.5, CI:0.99-2.2, P=0.049), were determined as significant risk factors for preterm birth respectively. Conclusion: These data identify a subgroup of Iranian women at an increased risk for preterm birth, making provision for attentive prenatal care of at risk women are essential to reduce the incidence of LBW.

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Keywords: Preterm birth, Maternal risk factors, Fetal risk factors.

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Prevalence and risk factors for low birth weight in Ardabil, Iran

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Abstract

Introduction: To determine prevalence and risk factors associated with low birth weight in Ardebil, Iran. Materials and methods: a cross-sectional study was conducted between Nov 2010-July 2011 in all three maternal hospitals in Ardabil. Of 6832 live births 358 neonates had a birth weight<2500 g, was taken as a case and 705 of normal neonates was taken as a control. Data were listed in a self designed questionnaire from review of prenatal and hospital delivery records. Data were analyzed using SPSS version 16. Univariate and multivariate logistic regression analysis was performed to obtain the magnitude of association between the independent variables and low birth weight. Results: The incidence of LBW was 6.3% and among these, 84.2% were preterm and 15.8% had intrauterine growth retardation. Hypertension (OR 8.64, CI 2.63-28.31), multiple pregnancy (OR 7.62, CI 3.09-13.32), leakage (OR 4.46, CI: 2.11-9.42), oligohydramnios (OR 4.28, CI 1.90-9.76), history of preterm birth (OR 2.84, CI 1.20-6.71), bleeding or spotting (OR 2.36, CI 1.41-3.95) were determined as important risk factors for preterm LBW. Risk of low birth weight in term infants increased by her multiple pregnancy (OR 3.77, CI 1.41-10.0), bleeding and spotting (OR 2.23, CI 1.22-4.07), urinary tract infection in weeks 26-30 of pregnancy (OR 2.42, CI 1.11-5.26) and spouse smoking (OR=2.24, CI: 1.07-4.68, P=0.031). Conclusions: Delivering quality health care for all pregnant women and early detection and control of hypertension, urinary tract infection, and bleeding or spotting and leakage during pregnancy may significantly reduce the rate of low birth weight and improve public health in this area.

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Keywords: Low birth weight, Preterm birth, Maternal risk factors, Fetal risk factors.

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Association of maternal body mass index with adverse maternal and prenatal outcomes

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Abstract

Introduction: The present study aimed to determine the association between abnormal maternal body mass index and adverse maternal/prenatal outcomes. Materials and Methods: In this descriptive-correlation study 8270 pregnant women referred to rural and urban health centers in the Ardabil district (from Mar 2009 to Dec 2010) were studied. Data were collected from prenatal healthcare records using a self designed questionnaire. Women with twin pregnancy, less than 18 and above 35 of age, and women with systemic or chronic disease were excluded from the study. The variables examined in this study include, demographic information (e.g. age, social and economic status and literacy), present pregnancy information (e.g. parity, hemoglobin level, gestational diabetes, preeclampsia) and prenatal information (e.g. preterm delivery, low birth weight and congenital malformation). Data were analyzed through Kruscal wallis, chi-square and logistic regression tests using SPSS-16.

Results: 8.2, 25 and 15.4% pregnant women were underweight, overweight and obese, respectively. Obese women were at increased risk for macrosomia (OR=1.820, CI: 1.345-2.447, p=0.001), unwanted pregnancy (OR= 1.436, CI: 1.198-1.720, p=0.001), pregnancy induced hypertension (OR= 1.633, CI: 1.072-2.486, p=0.022), preeclampsia (OR= 4.666, CI: 2.353-9.2550, p=0.001) and still birth (OR= 2.602, CI: 1.306-5.184, p=0.007). However, the risk of low birth weight delivery in underweight women were 1.6 times higher than the normal cases (OR= 1.674, CI: 0962-2.912, p=0.068). Conclusion: Considering the high prevalence of abnormal maternal body mass index and its associated adverse maternal and prenatal outcomes; consultation before pregnancy is recommended in order to achieve normal body mass index and reduce the relevant complications.

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Keywords: Body mass index, Pregnancy, Maternal risk factors, Fetal risk factors.

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Antihyperglycemic and antihyperlipidemic activities of *Nannochloropsis oculata* microalgae in streptozotocin-induced diabetic rats

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**Abstract**

**Introduction:** It is well documented that biological active components of microalgae have therapeutically potential for treatment of different diseases. In current investigation, we assessed antihyperglycemic and antihyperlipidemic activities of *Nannochloropsis oculata* microalgae (NOM) in Streptozotocin (STZ)-induced diabetic male rats.

**Materials and methods:** The rats were placed in two sections (healthy and diabetic). In our investigation, 2.5-month-old male rats (n=10/diet treatment) were orally treated with NOM at rates of 10 and 20 mg/kg of body weight for 3 weeks. Thus treatments included: 1. NOM10 in healthy rats, 2. NOM 20 in healthy rats, 3. NOM 10 in diabetic rats, 4. NOM 20 in diabetic rats, 5. healthy control rats were treated with 0.3 ml of distilled water, and 6. diabetic control treated with STZ (mg/ml). Body weight (BW) was measured each week during the experiment. At the end of the trial, blood samples were taken for measurement of glucose, insulin, cholesterol, total bilirubin, triglycerides, HDL-C, LDL-C, albumin, total protein, creatinine, uric acid, aspartate amino transferase, alanine amino transferase, and alkaline phosphatase. **Results:** Our findings showed that diabetic rats treated with NOM have a significant lower glucose, cholesterol, triglycerides, or LDL levels and higher insulin and HDL-C (P<0.05) levels in the serum concentrations of, and higher the serum concentration of. Treatment with NOM had no significant effect on blood parameters in healthy rats (P>0.05). Also, NOM could maintain body weight in diabetic rats (P<0.05).

**Conclusion:** It is concluded that NOM has antihyperglycemic and antihyperlipidemic activities in diabetic rats.

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**Keywords:** Diabetic rat, Glucose, Insulin, Microalgae.

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Lidocaine injections targeting IL but not the PL area of prefrontal cortex impairs extinction of auditory fear conditioning in rat

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Abstract

Introduction: Fear has a central role in organizing of defensive behaviors to threat and fear memory is essential to the organism’s survival. Fear learning studies in conscious animals have shown dissociable roles for mPFC and its subregions, PL and IL in mediating different memory processes. While PL is involved in the retrieval or expression of conditioned responses, the suppression and extinction of conditioned responding involve IL. Memory extinction is a new learning and consists of the learned inhibition of retrieval of previously acquired memories. Previous study indicated that many regions of brain especially infralimbic of prefrontal cortex play an essential role in the extinction of fear-based memory. Therefore, the aim of the present study is to examine the role of IL and PL areas in the extinction of auditory fear memory (AFM) by reversible inactivation with lidocaine in rats.

Materials and methods: Rats with surgically implanted bilaterally cannula aimed at the IL and PL were trained and tested in an auditory fear conditioning task. After conditioning rats divided in 4 groups (N=10) were injected with either saline or lidocaine (40ng /0.5µl/side) in IL and PL areas 10 min before extinction training. Conditioned fear was assessed by measuring the percentage of freezing during 3 days, in 24 intervals. Results: Results indicated that inactivation of these areas with lidocaine increased or decreased freezing respectively. In other word IL inactivation impaired acquisition of extinction and extinction memory (P<0.0001). Conclusion: Our data suggest that IL but not the PL plays an important role in fear memory extinction.

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Keywords: Extinction, Fear memory, mPFC, Lidocaine, Rat.

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Sex differences and fear extinction

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Abstract

Extinction of conditioned fear in animals is the explicit model of behavior therapy for human anxiety disorders, including panic disorder, obsessive-compulsive disorder and post-traumatic stress disorder. This type of learning depends on communication between the medial prefrontal cortex (mPFC) and the amygdale. Mental illnesses such as PTSD as a result of disruption of this circuit. Different studies showed that PTSD in women is higher than in men. One of the reasons of such difference are gonadal steroids so that based on preclinical and clinical ovarian hormones not only have an important role in modulation of fear and anxiety and fear extinction in women, but also are targets for the development of novel therapeutics for stress related disorders. Women in the luteal phase (high circulating estrogen) of the menstrual cycle have stronger extinction recall compared with women in the early follicular phase or on oral contraceptives (low circulating estrogen). In addition to estrogen, progesterone and its neuroactive metabolite, allopregnanolone, have been shown to modulate anxiety and fear. Progesterone treatment in intact female rats facilitates extinction recall. The other reason for this difference is returned to neural processes underlying successful or failed extinction that thought to be sex-specific. Discriminate these differences will be useful for exposure-based clinical therapies, which are similar in premise to fear extinction and which are primarily used to treat disorders that are more common in women than in men. The lack of a discernible relationship between IL-BLA structure and extinction retrieval in female animals suggests that variability in freezing during extinction retrieval in female animals. On the other hand, freezing is not an incomplete indicator of fear in female animals. This distinction could have implications for identifying sex-specific risk factors for PTSD. Generally, sex differences and estrous have different effects on fear conditioning, extinction and extinction retrieval.

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Keywords: Extinction, Fear memory, mPFC, Sex difference.

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Application of media literacy intervention to improve self-esteem and body image in female students and their attitudes about self-medication of slimming supplements

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Abstract

Introduction: Self-medication of slimming supplements has increased. The media advertising is involved in this field. The aim of the study was to determine the effect of media literacy educational intervention in the students' self-esteem and body image and their attitudes about self-medication of slimming supplements among the female dormitories in University of Medical Sciences in Iran. Materials and Methods: In this quasi-experimental study of a controlled type, 98 students were selected by multistage cluster sampling method and randomly divided into two groups of 49 test and 49 control. The data collection instruments were the researcher-made questionnaire about media literacy and an attitude of self-medication of slimming pills, BICI questionnaire of body image and SEI Cooper Smith’s questionnaire of self-esteem. Based on the results obtained from the questionnaires early completion, an appropriate educational intervention was designed and carried out. One and three months after the intervention, the data gathered and was analyzed in (16) SPSS software using descriptive and analytical tests. Results: Before the intervention, the mean scores of attitude, body image, self-esteem and dimensions of media literacy in both groups were middle, and there was no significant difference between them. Also, positive correlations were observed in the experiment group between attitude and knowledge (r=0.99, p=0.001), critical thinking (r=0.61, p=0.001) and analysis (r=0.37, p=0.009). One and three months after the intervention, the mean scores of body image, self-esteem, and dimensions of media literacy was observed significantly in the both groups (p<0.05). Conclusion: Media literacy education was effective in promoting the attitude about slimming supplements.

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Keywords: Media literacy, Self-esteem, Body image, Attitude, Slimming supplements.

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The investigation of the effective factors in women's fecundity and sexual health improvement

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Abstract

**Introduction**: Regarding the increasing emphasis on women’s health as the main goal of family planning programs, the first international conference of family planning was held in Uganda, in 2009. To recognize effective factors in changing health behavior may ease the improvement of these factors. Moreover, sexual health training increases people's awareness. One of the most important goals of Primary Health Care (PHC) is increasing the level of people's awareness of hygiene and their health. Therefore, women's health is a basic and critical element. The present study aims to identify some inland and abroad efforts at improving women's sexual and fecundity health.

**Materials and Methods**: The present study is a descriptive study in which some key terms like fecundity health, women's health and family planning are searched in different websites such as google scholar, pubmed, scopus springer, iranmedex from 2013 to 2016. **Results**: According to Mbizvo and Burke (2016), fecundity health needs of over 225 million women in the world are not met. Sutovsky, Baker and Cupp (2016) believe that sexual and fecundity health is improved by physiological factors, self-confidence, self-imagination and people mental imagination. Thistle and Greenberg think that sexual training leads to increasing of fecundity and women's health. They also believe that changing health behavior results in a suitable level of fecundity and sexual health.

**Conclusion**: According to the previous studies, group-work training, awareness increasing, women's attitude and behavior in fecundity health, husband's training and collaboration, women's high level of knowledge and availability of health facilities may lead to women's fecundity and sexual improvement.

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**Keywords**: Fecundity health, Women's health, Family planning.

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Recognizing the concept and grouping exceptional children and their incidence estimation

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Abstract

The aim of present research was to review the concept and grouping of the exceptional children. Therefore, in this research which is of an analytical – descriptive one and it has been performed in the library form, some subjects including definition, history, general and specific concepts, inter and intra personal differences, how to measure the students' capabilities and their incidence percent have been reviewed. Considering the precedence of exceptional education in the world, the general results of research showed that such a subject has not been studied by researchers for few more decades, so doing transverse and longitudinal research are necessary. Because recognizing the more capabilities, needs and interests of these children help us to have a better attitude for them. In addition, they can obtain the adaptive conditions with a surrounding environment through specific educations.

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Keywords: General concept, Specific concept, Exceptional children, Interpersonal differences.

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Unapt and mental retardation: Features and educational strategies

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Abstract

The aim of current study is to investigate features and educational strategies for mentally retarded and unapt children. Mental retardation is not a disease, but it is a result of disease process in the brain, which is characterized by limitations in intellectual functioning and adaptation. According to American association of mental retardation, mental retardation is considered: Mental retardation is assigned for the general intelligence reaction that is working significantly less than a medium level and it is along with disorders in adjusted behaviors and it is caused during development and transformation. In most cases, the cause of mental retardation is unclear and consequences of that are identified by bugs intelligence and personal life skills. Mental retardation is determined based on level of IQ from mild to very severe (deep) and it is categorized based on severity of symptoms medically, educationally and so on. To find out the main reason of mental retardation, scientists and researchers have so far referred to more than two thousand reasons. While many causes of mental retardation still remain unknown. In this article we investigated causes of mental retardation that Robinson quoted from Maher, which are classified into four groups: Retardation due to hereditary factors, retardation due to events during pregnancy, retardation due to events of accouchement and after birth and retardation due to environmental, social and cultural factors. Each of these factors alone or in combination, may cause mental retardation in person that each one impact's are briefly investigated. At the end, the article presents a way to prevent the birth of mentally retarded children and common training programs which are the main goals of this paper.

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Keywords: Mental retardation, Training, Learning, Intelligence (IQ), Adaptive behavior.

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Exceptional children education methods and its pathology

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Abstract

It is obvious that the present educational services and methods and rehabilitation to meet the needs of exceptional children are not enough. They are deprived of the necessary opportunities to join the social life and employment. Establishing a positive attitude toward disable people, providing the equal opportunities for them, knowing their various needs and increasing the people’s awareness are the ways to decease this deprivation. When the parents bear an exceptional child and hear from the others, that their child will never walk, see, hear and so on, in these difficult conditions they need counseling and guidance by wise, obligated and sympathetic responsible consultants. An exceptional child needs an exceptional relationship with his/her family. The parents of an exceptional child will also have some exceptional feedbacks, attitudes and needs related to their child while the child’s first and sensitive four years are not considered. In such situations, planning for the better education of these children is considered necessary. In the present article, the educational methods and approaches related to the exceptional children have been considered. Also, the possible problems related to the comprehensive education and the other problems related to the education of these children have been investigated pathologically.

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Keywords: Comprehensive education, Exceptional children, Pathology.

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Investigate the causes of problems of L D children (with learning disabilities), knowing the characteristics of them and presenting strategies to educate, treat and cure this problem

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Abstract

Studies have shown that the educational system based on quality management needs an active environment to achieve the objectives, methods, techniques and specific patterns. In this way, some students can be seen that despite normal intelligence or even higher than the ordinary people cause concern for families, teachers and school officials because in many cases (understanding, reading, writing and solving the problem) they are in trouble and according to experts their learning is known as learning disability or learning difficulties. In continual attempts to determine the population of children with disabilities in learning, various aspects of the issue are considered and each group based on their vision and with different way studied the issue and defined it. People with learning disabilities exist at all levels and all school levels from kindergarten to university, points of those children are learning at the primary level, basically due to emphasis and interest in the identification and treatment of this child is more in this period which in the future, it can reduce the number of people with these disabilities in higher level of education. Children with learning disabilities usually in all aspects of life have a normal appearance, but their academic achievements are dropped behind one or two classes than other children. However, it is possible that children with learning disabilities in all courses may be week to achieve a simple and promising solution should find the cause or causes of their problems. So in this study, which is descriptive-analytic one and it was done in the library, we tried to investigate and fix these problems and then full recognition are given to the teacher and families.

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Keywords: Learning disabilities, L D, Understanding, Writing, Problem solving.

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Case studies of effective components of test anxiety and ways to reduce it

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Abstract

Anxiety is something which is abused. This delirium usually is severe and disturbing factor. Anxious people realize variables that belong to themselves but not variables related to the assignment, it seems that many students fall behinds school not because of a high level of test anxiety. Since test anxiety is affected by many different factors. This study, reviews ways to reduce test anxiety and effective components that have been investigated. The collected material after collection practice in a way that few articles and matters taken after are view of the literature and especially the results and findings of the investigation and review them to common and not-common points had concluded. After review and over view of the variables that influence test anxiety, it was found that self-efficacy locus of control, perfectionism, aromatherapy, objective structured assessment of direct and indirect supervision, anxiety (important aspects of personality), emotional regulation, optimism, the effectiveness of meta-cognitive counseling, reading and understanding the Quran, are top factors, affecting optimism and metacognition and emotional regulation (objectivism and subjectivism), learning skills and study skills training the exam, effect of cognitive-behavioural therapy, self-esteem (overt and covert) are included on anxiety test.

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Keywords: Skills training the exam, Cognitive-behavioural therapy, Self-esteem, Test anxiety, Learning skills, Top factor affecting optimism reading and understanding the Quran, Emotional regulation, Meta-cognitive optimism, Effectiveness of counselling, Personality.

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Investigation of the social skills effects training on educational self-efficiency 5th grade girl students at the elementary school 1st district of Kerman city

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Abstract

The sample in this study consisted of the entire fifth grade a single-sex (female) student at the elementary school still studying in 94-93. The statistical sample was selected by cluster sampling and then they were randomly divided into two groups consisted of 25 participants after the random selection of experimental and control group. Matson social skills sealed Fask, Sherer self-efficacy scale task were hailed as pretest and posttest and post-test and the experimental group for 12 sessions in 70 min and for 2 sessions in 2 weeks and Training program form each group after the completion of the post-test was conducted and two groups pretest and post-test were compared with each other. Results showed a significant effect of an intermediary program (p<0.001) on self-efficacy and academic performance of students in the experimental group. The academic performance score of student in this research is considered the mean of first semester exam GPA and test score to measure academic achievement also coordinated at the end of each semester and then opted for average of two semesters. In order to analyze the data couched, in addition to descriptive statistics form inferential statistics on multivariate analysis of variance, sum of squares, degrees of freedom, mean square, F and significance were used. The reliability and validity of the calculated results show that the reliability and validity of Matson check list, with split-half coefficients and Cronbach’s alpha were calculated and the amount of cronbach’s alpha and split-half coefficients for total scale amount were equal to 96%. For investigating self-efficacy of student, the Shever General self-efficacy questionnaire were used. General self- efficacy questionnaire Sherer et al. (1982), in Likert scale with 17 questions was developed in response to every question, there are 5 options from strongly: Agree to strongly disagree. Cronbach’s alpha of Sherer General self-efficacy were obtained equal to 78%.

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Keywords: Social skills, Self- efficacy, Academic performance.

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A comparison analysis of policies, goals and organization of exceptional education system of Iran with Germany and Japan

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Abstract

The current study examines comparatively the exceptional education system in order to improve the education of exceptional children and provides appropriate solutions, analyzes and investigates the objectives, policies, organization and structures of the exceptional education system in Iran: Compares the structure and education organization of exceptional children in Iran, Germany and Japan, compares the educational goals of exceptional children in Iran, Germany and Japan, compares the educational policies of execlutional children in Iran, Germany and Japan, examines the differences and similarities between the educational system of exceptional children in Iran, Germany and Japan. This research is a descriptive-comparative study and data collection was conducted in the library. The sample of study is consisted of exceptional education in Iran and other countries. The data collection tools included thesis, books, scientific sites and related chapters to the subject. Governing situation of the educational system and the current situation can’t fulfill specific human, social and educational needs of all society members. The results of this study showed, in comparison with leading countries, our country confronted with the lack of low enshrined in support of inclusive education. In Iran free special education and predictable source of health and life insurance in the financial resources of exceptional education is proper understanding of supporting, but in comparison with other countries, we spaced from rule of avoiding any additional costs due to disability and Iran have faced with the problem of centralized structure while planning in comparison with leading countries. At the end suggestion for improvement of exceptional education, according to research findings have been presented.

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Keywords: Comparative study, Special education system.

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Speech disorders: An adaptive study on exceptional children against normal children

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Abstract

The aim of the present article is to study generally speech disorders in the exceptional children against normal ones. We will deeply talk about what the children say or pronounce some sounds or speak. Indeed, our goal is not speaking about such subjects or accents which enrich our Latin language, but our main goal is, the children whom speech and language are so inexpressive and disordered that they will face some problems in every culture, even in their own culture. Here, we will provide some standard definitions and then we will explain dividing and the incidence of disorders and educational cases. Consequently, we found that, the most of speech disorders appear from an early age and they must be treated as much as possible. The speech disorders produce in the cognitive and neurological areas. These disorders may result in social separation, depression or behavioral problems.

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Keywords: Speech disorders, Exceptional children, Normal children.


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The relationship between complications of the Pentavalent vaccine with the mother's education in Shahid Beheshti University of Medical Sciences in 2015

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Abstract

Introduction: Researches have shown that higher education of the parents has a positive effect on the health conditions of the child. This study was performed to determine the relationship between mother’s education level and pentavalent vaccine complications. Materials and Methods: In this descriptive cross sectional study, 676 children revaccinated with the vaccine pentavalent attending to healthcare centers of Shahid Beheshti University of Medical Sciences from June to 30 December 2015. There were examples of both sexes and 2-6 month age group. To collect information, a questionnaire after completing the profile of the child and receive phone calls by vaccinator was delivered to the parents. Up to a week all the side effects observed in children are marked and returned to the vaccination center. Data were analyzed with the use of descriptive statistics in software SPSS. Ethical issues were all considered. Results: 2.4% of the mothers were illiterate and 36.4% had university education. The most common side effects included fever, pain, restlessness and induration. Among the complications studied, only fever, pain and restlessness were associated with maternal education and was lower significantly in children whose mothers were university education (P=0.001). Conclusion: In this research that fever, pain and restlessness symptoms are rarely found in children with higher levels of maternal education, can be concluded that these mothers report vaccine side effects more accurate and reliable.

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Keywords: Complications of vaccine, Pentavalent, Mother's education.

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Using birth ball in the physiological delivery

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Abstract

Introduction: The aim of this study was the effect of birth ball in the process of physiological childbirth. In fact, this is a standard physical therapy ball, is used around the world in the physiotherapy department. However, have been observed to be very useful in pregnant women. This is a soft sit in different positions. Different positions in the labor and delivery may be easily used. Quiet mobility of the ball, a good way to alleviate pain caused by uterine contractions. Materials and Methods: The study was the review articles. And studies conducted from 1991 to 2009, on the birth ball, is being used. Results: In a study in China (2008), the impact of the birth ball with music on the mother’s was investigated in the first stage of labor. The samples selected randomly. It was clear: birth ball with music can relieve pain, speed up the process of labor, vaginal delivery and it can reduce cesarean delivery (3). Another study conducted in 2009 to determine the effect of using birth ball on results of labor. 170 pregnant women were selected and divided into 2 groups, control group accepted respiratory skills with birth ball. Index in both groups were statistically significant. Pain, overall time of labor, use of oxytocin, the rate of cesarean delivery was reduced (2). Conclusion: According to the findings, birth ball is one of the most protected in labor. The proper use of it causes the mother feel more comfortable, lower back pain, pelvic mobility, feeling less. Feel the pain caused by the contraction, accelerate labor, rotate the head and fetal descent, more oxygen to the fetus, prevention of fetal distress, reduce of the cesarean and increase vaginal delivery. Therefore, the use of birth ball is recommended during pregnancy, labor and postpartum.

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Keywords: Birth ball, Physiological delivery.

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Effects of ginger on serum glucose, advanced glycation end products and inflammation in peritoneal dialysis patients

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Abstract

Introduction: The aim of this study was to investigate the effects of ginger supplementation on serum glucose, advanced glycation end products, oxidative stress and systemic and vascular inflammatory markers in patients on peritoneal dialysis (PD). Materials and Methods: In this randomized, double-blind, placebo-controlled trial, 36 patients on PD were randomly assigned to either the ginger or the placebo group. The patients in the ginger group received 1000 mg/d ginger for 10 wk, whereas the placebo group received corresponding placebos. At baseline and the end of week 10, serum concentrations of glucose, carboxymethyl lysine, pentosidine, malondialdehyde (MDA), high-sensitivity C-reactive protein (hs-CRP), soluble intercellular adhesion molecule type 1 (sICAM-1), soluble vascular cell adhesion molecule type 1 (sVCAM-1) and sE-selectin were measured after a 12- to 14-h fast.

Results: Serum fasting glucose decreased significantly up to 20% in the ginger group at the end of week 10 compared with baseline (P<0.05) and the reduction was significant in comparison with the placebo group (P < 0.05). There were no significant differences between the two groups in mean changes of serum carboxymethyl lysine, pentosidine, MDA, hs-CRP, sICAM-1, sVCAM-1 and sE-selectin. Conclusion: This study indicated that daily administration of 1000 mg ginger reduces serum fasting glucose, which is a risk factor for hyperinsulinemia, dyslipidemia, peritoneal membrane fibrosis and cardiovascular disease in patients on PD.

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Keywords: Advanced glycation end products, Ginger, Glucose, Inflammation, Oxidative stress, Peritoneal dialysis.

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The relationship between demographic characteristics of persons with interpersonal relationships in postmenopausal women with an emphasis on the prevention of chronic diseases

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Abstract

Introduction: Health promotion and healthy lifestyle behaviors are techniques for maintaining health. Wrong ways of life for women in menopause are many serious complications, including chronic diseases during this period. Therefore, this study aimed to determine the relationship between demographic characteristics of samples with interpersonal relationships (one of the aspects of lifestyle) conducted in postmenopausal women. Materials and Methods: In this cross-sectional study, studied 400 postmenopausal women 45-60 years old in Langeroud city (Gilan province) by random sample. Data from the questionnaires on demographic, health promoting behaviors (HPLP-II) were collected by visiting homes. Statistical analysis Pearson, t-test, ANOVA and multivariate linear regression were used to analyze the data. Results: The mean (SD) total score of interpersonal relations was 3.1 (0.4). According to statistical analysis of variance and t-test, between interpersonal relationships and age, number of children, socioeconomic status, life satisfaction and chronic diseases, there was a statistically significant relationship (p<0.05). Conclusion: The findings showed that interpersonal relations in postmenopausal women were at high levels. Persons aged less than 55 years, with a good income with family members up to 5 persons and with the consent of the life and non-chronic diseases, had a better situation of interpersonal relationships. Therefore can improve these by take a step toward the prevention of chronic diseases occurs.

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Keywords: Demographic, Interpersonal relationships, Post-menopausal women.

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Colorectal cancer study using biochemical mechanisms of inflammation

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Abstract

Introduction: According to many studies related to chronic inflammation such as viral infection "parasitic as well as other factors directly and indirectly through cyclooxygenase-2 (COX-2) participate in the development of malignant diseases of the immune system. Colorectal cancer is one of the diseases known to mankind. The purpose of this paper was to review the role of inflammation in colorectal cancer and biochemical mechanism of inhibiting them. Materials and Methods: Based on studies of chronic inflammation is a known risk factor in cancer cells Apytlyal. Inflammation is defined as a cause of cancer. Inflammatory cytokines induced by increasing PG synthesis are effective. Chronic inflammations start with an increase in arachidonic acid (substrate 2-COX 2) levels. Many studies have shown that the metabolism of arachidonic acid (AA ((and the synthesis of prostaglandins (PGs), are associated with cancer progression, so that polyps in the colon tissue inflammation are activated. Results: COX-2 expression in normal tissues is very low in the colonic mucosa. But in 50% of human colorectal adenoma and carcinoma 80%, 2COX- high expression level of protein and mRNA are seen. In colorectal cancer cells, the level of mRNA 2-COX and PGG2, not in proliferative cells and differentiated cells compared with most distinctive is also the expression of a common mechanism 2COX store colorectal cancer (CRC) that is already known to induce expression of 2COX-, growth factors, cytokines, hormones, oncogenes or tumor promoters, respectively. Conclusion: The use of NSAID non steroidal anti inflammatory drugs and specific inhibitors 2 COX- used in the treatment of inflammation and many studies have been conducted in this area. We hope to discover and study new types of drugs may be promising in identifying an effective way to reduce inflammation and prevent cancer.

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Keywords: Cancer, Cyclooxygenase, Biochemical mechanisms, Nonsteroidal anti inflammatory drugs (NSAID's).

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An investigation of fumonisins quantities correlation in wheat/flour used for bakery obtained from North, West and South regional provinces of Iran

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Abstract
Humans have long realized that some species of fungi can be regarded as a risk for human health after eating. But even in recent years, it was considered that the occurrence of mold on food has just been an aesthetic problem and not a risk. Many studies during the first half of the last century found that metabolites of some types of fungi common in food are responsible for diseases and deaths. Currently, it is well established that toxic metabolites of fungi or mycotoxins have been responsible for many epidemics in human and animal populations, especially in recent decades. Toxins produced by fungi are called mycotoxins and Fumonisin is one of the most important ones. So far, 15 different types of Fumonisin have been recognized among the most important ones, which are A1, A2, B1, B2, B3 and B4. Fumonisin B1 is the most prevalent and abundant one. It is absorbed through food and it spreads over the liver and kidney after absorption. Some of them are excreted through urine, whereas most of them are excreted through feces. Dangers resulting from Fumonisin B1 were investigated by World Health Organization, International Immunology Organization (IPCS), Food Security Organization (SCF) and European Commission. Tolerable daily intake (DIDI) for Fumonisin B1, B2 and B3, alone or in combination, were determined 2 mg / kg body weight. No effects of Fumonisin on human metabolism have been reported up to now. Fumonisin B1 causes liver- and kidney-related problems and nephrotoxicity in all animal species. In addition, Fumonisin B1 has been classified as the major carcinogenic factor in humans by International Agency for Research on Cancer (IARC). In this research, we sampled freshly harvested wheat and flour from early May to early September 2014 in 7 provinces of the country and have tried to determine the contamination level of each province and city with Fumonisin by using direct competitive ELISA and RIDASCREEN kit methods. Considering the amounts of wheat and flour obtained based on divisions of the country, from among 14 cities sampled belonging to 3 regions, including northern, western and southern provinces, Ardebil with 23.34 ppb and Kermanshah with 61.56 ppb had the highest and lowest Fumonisin levels among the wheat samples under study, respectively, while the city of Ijrud with 24.96 ppb and the city of Gonbad with 19.29 ppb had minimum toxin levels in the flour provided for baking bread.

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Keywords: Fumonisins, Wheat, Flour, Territories of Iran.

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Isolation and molecular identification of endophytic bacteria from wheat and their antagonistic effects against fungal phytopathogens

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Abstract

Introduction: Endophytic bacteria refers to those bacteria that live inside plant tissues without causing apparent damage. Today, many researchers are willing to isolate and identify endophytic fungi, so these pathogenic plants are evaluated. Some of them are anti-fungal and anti-bacterial compounds which are capable of producing. Some as fertilizer can help plants to grow and may have benefits for the crop, because of anti-bacterial and antifungal effect they have. Most recently they have attracted a lot of attention because they can be used and handled instead of a fertile material and chemical germicide. It is a great help to maintain health and the environment Fusarium moniliforme, Fusarium graminearum, Fusarium oxysporum, Macrophomina phaseolina, Fusarium culmorum (LM 2091). Materials and Methods: Accordingly, in the present study Endophytic bacteria are isolated from the roots and stem of wheat. They were cultured on NA culture medium and then samples of the antagonistic effect against 5 pathogenic fungal ability to produce: Fusarium moniliforme, Fusarium graminearum, Fusarium oxysporum, Macrophomina phaseolina, Fusarium culmorum (LM 2091) and 3 fungal biocontrols are: Tricoderma virida (222-35), Tricoderma harizanum (115), Tricoderma asperellum (Fyt 222.2) were studied in vitro using Dual culture.

Results: A total of 69 bacteria were isolated from the root and stem of wheat that of all the isolates showed that only 5 bacteria antagonistic effect after sequencing srRNA 16 as Bacillus subtilis strain khazar, Bacillus subtilis strain IRI, M.CH.V Bacillus subtilis strain, Lysinibacillus macroides strain Tethys was registered in NCBI.

Conclusion: The present study showed that wheat is Endophyticy contains bacteria that have an inhibitory effect against plant pathogens.

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Keywords: Endophytic, Wheat, Antagonists, Biocontrol, sr RNA 16.

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Quality of life in high risk pregnant women (Gestational diabetes and hypertension)

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Abstract

Introduction: Quality of life includes various aspects of health and physically and mentally and socially well-being. These aspects are measurable in pregnancy. Women with high-risk pregnancy faced risks in personal and family and social life. Quality given the limited studies that have reported the quality of life in these mothers lower than normal mothers, the aim of this study was to investigate quality of life in high risk pregnant women referred to high-risk clinics and sections in Taleghani and Alzahra hospitals in Tabriz. Materials and methods: This descriptive, analytical study, which was conducted on 185 eligible women in 28 to 40 weeks of pregnancy with mild preeclampsia and gestational diabetes, was under the surveillance of obstetricians and gynaecologists in Taleghani and Alzahra hospitals. Sampling was available. Data was collected by using Quality of Life (QOL-GRAV) questionnaire. Results: The mean of the life quality total score was 61/0 (17/0). Conclusion: According to the results of this study, the life quality in high risk pregnant women is low. Therefore, it is necessary to give mothers the information around this subject in order to reduce the maternal and fetal complications.

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Keywords: Quality of life, High risk, Pregnant women.

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The relationship between modes of delivery with ASQ development scale of children from birth to 6 months

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Abstract

Introduction: Children are the most national principal in each societies and method of their growth is the most health scale during their lives. The aim of this study was the relationship between types of delivery with ASQ development scale of children from birth to 6 months. Materials and methods: This study is a prospective Cohort study that assessed ASQ Development scale in 526 infants of normal and Cesarean deliveries from birth to 6 month among women referred to educational and treatment of hospitals in Ghachsaran and Yasouj for delivery in 2014. Research tools were Demographic - Reproductive checklist, infant ASQ tests for 4 and 6 menthes. Results: The results showed that mean (sd) of 4 and 6 month of infants about ASQ tests in two groups of NVD and C/S did not have significant different (p>0.05). The relationship between infants ASQ scales and some of Demographic - Reproductive variables had significant different in NVD than C/S (p<0.05). Conclusion: Attention to any significant relationship between type of delivery and infants ASQ Development scale in 2 groups of NVD and C/S but significant different between Demographic - Reproductive variables with these scales in NVD, recommended to mothers select NVD for theirs, so be observer of normal development of infants.

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Keywords: Mode, Delivery, Children, ASQ development scale.

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CrossMark
Effects of extremely low electromagnetic field on ovary and uterus in rats; TUNEL study

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Abstract

Introduction: Many studies have shown that exposure to extremely low electromagnetic fields can have adverse effects on female reproductive system and tracts, and thus, a relationship between exposure to electromagnetic fields and infertility is conjectured. The aim of this study was to evaluate the adverse effects of extremely low electromagnetic field on uterus and ovary. Materials and methods: In order to examine this, 20 female Wistar rats were selected and kept for 1 week, in quarantine and then, subdivided into two groups; control group and exposed group. Rats in the exposed group were exposed to 50 Hz of ELF EMF (non-ionizing radiation, 3mT) for 6 weeks. The materials were processed and apoptosis was observed under a light microscope using TUNEL method. Result: In the experimental rats, the amount of uterine and ovarian tissue apoptosis increased significantly. Cell injury was observed. Conclusion: This study showed that ELF EMF could induce cell injury on uterine and ovarian tissue leading to infertility and subfertility.

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Keywords: Extremely low electromagnetic field, Ovary, Uterus, Apoptosis.

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Association of rs2695121 variant of LXRβ gene with obesity risk in an Iranian population

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Abstract

Introduction: Several genetic analyses have clearly shown the genetic contribution to obesity and its related phenotypes. Liver X receptor Beta (LXRβ), located in an obesity susceptible region play a pivotal role in carbohydrate and lipid metabolism, so, genetic variations in it may play a role in etiology of human obesity. The aim of this study was to explore the relationship between the LXRβ rs2695121 polymorphism and the risk of obesity and related traits.

Materials and methods: The TaqMan allelic discrimination assay was used to detect the genotype of rs2695121 in LXRβ gene in 168/209 obese/overweight and 76 healthy control subjects. The difference of genotype distribution between the groups was analyzed using Chi-square test and logistic regression analysis. Univariate analyses were used to compare the levels of anthropometric and clinical variables between different genotypes. Results: The allelic frequency of LXRβ gene variant in whole population and also in studied groups was in the Hardy-Weinberg equilibrium. The genotype and allele frequencies of the investigated SNPs exhibited no significant differences between the control and the overweight/obese groups neither in the crude state nor after adjustment for age and gender (odds ratio: 1.17 (CI = 0.46–2.91), P > 0.05). However, among the clinical and metabolic parameters tested, systolic and diastolic blood pressure were associated with the genotype CT (P=0.031 and P = 0.17 respectively). Conclusion: Results of the present study suggested that LXRβ rs2695121 polymorphism may not contribute in the development of obesity in an Iranian population.

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Keywords: Obesity, Liver X receptor-β, rs2695121, Polymorphism.

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Serum concentration of high-sensitivity CRP in metabolic syndrome in an Iranian population

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Abstract

Introduction: A growing body of evidence indicates the role of inflammation and inflammatory indicators such as Cytokines and other inflammatory mediators as triggering factors in the development of metabolic syndrome (MetS) and other metabolic disorders. This study was designed to investigate the possible association between high sensitivity c reactive proteins (hs-CRP) with components of metabolic syndrome. Materials and methods: In this cross-sectional study a total of 421 individuals, including 215 patients with metabolic syndrome and 206 healthy controls were selected randomly from the Mashhad as a second largest city in Iran. MetS was defined based on Adult Treatment Panel III criteria. Anthropometric variables such as weight, body mass index, waist circumference, hip circumference, waist-to-hip ratio, systolic and diastolic blood pressure as well as biochemical profiles and inflammatory marker (hs-CRP) were measured by standard methods. Results: The mean values of Anthropometric and clinical variables, including FBS, TC and total cholesterol, were significantly higher in MetS group compared with controls (P <0.05), while HDL was significantly higher in the control group. There were no significant differences in the distribution of gender and age between controls and patients with MetS. In subjects with the MetS, hs-CRP concentration was higher than those in controls (P <0.05). There was also a significant correlation between the concentration of hs-CRP and serum triglyceride levels in men with MetS and serum HDL-cholesterol levels in women of the control group. Conclusion: hs-CRP concentrations increased in patients with MetS and was positively associated with TG levels in men and HDL-cholesterol in healthy women. hs-CRP can thus be simple, powerful markers of metabolic syndrome.

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Keywords: Metabolic syndrome, C reactive protein, Inflammatory marker.

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Impact of the C1431T polymorphism of the PPAR-γ gene on susceptibility to obesity

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Abstract

Introduction: The worldwide increasing prevalence of obesity is considered as a major health problem. The C1431T polymorphism in peroxisome proliferator-activated receptor-γ (PPARγ) has been shown to be associated with metabolic related disorder included obesity. However, the results have been inconsistent. Therefore, this cross-sectional study was conducted to explore the association between the PPARγ C1431T polymorphism and risk of obesity in an Iranian population. Materials and methods: TaqMan allelic discrimination assay was used to determine the C1431T polymorphisms in a total of 210 unrelated subjects, including 75/96 obese/overweight and 39 normal controls. Each group was then divided into two subgroups according to the genotype (CC and CT + TT for C1431T). Anthropometric indices, fasting plasma glucose and fasting lipid profile were measured by routine methods. Results: The genotype and allele frequencies of the C1431T exhibited no significant association with obesity neither in the crud state nor after adjustment for age and gender (P > 0.05). However, among the clinical and metabolic parameters tested, HDL-cholesterol showed higher level in individuals carrying the genotype CC (P=0.046). Conclusion: Our results indicated that despite the significant association of C1431T polymorphism with a higher HDL cholesterol level, the PPARγ gene does not appear to markedly play a role in the susceptibility to the development of obesity among Iranian subjects.

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Keywords: Obesity, PPAR gamma, C1431T, Polymorphism.

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Effects of the (PPAR-γ2) Pro12Ala polymorphism on obesity in an Iranian population

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Abstract

Introduction: The peroxisome proliferator-activated receptor-γ2 (PPAR-γ2) gene has been reported in the pathogenesis of obesity. However, the results have been inconsistent. The aim of this study was to assess the association between PPAR-γ2 Pro12Ala (rs1801282) polymorphism and obesity in an Iranian population. Materials and methods: A total of 227 subjects, including 81/103 obese/overweight and 43 healthy individuals were enrolled in this cross-sectional study. Anthropometric and biochemical parameters were measured using standard protocols. All subjects were genotyped for Pro12Ala (rs1801282) SNP by TaqMan allelic discrimination assay. Univariate/multivariate analyses were used to determine the association of the genetic-polymorphisms with obesity and levels of different metabolic traits. Results: The genotype distributions for the Pro12Ala polymorphism were not significantly different between studied Groups. However, the carriers of Pro12Ala had higher waist circumference and waist to Hip ratio compared to the wild-type homozygotes (p=0.033 and p=0.019 respectively), indicating individuals with the A allele had a significantly higher risk of central obesity. Conclusion: Results of our preliminary study indicate that the Pro12Ala polymorphism of the PPAR-γ2 gene might not be a major etiological factor for obesity. However, it was associated with central obesity as a marker of obesity.

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Keywords: Obesity, PPAR gamma, Pro12Ala, Polymorphism.

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The effects of metabolic surgery on gut microbiota: Potential contribution to weight loss and improved insulin sensitivity

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Abstract

Introduction: Increasing rates of obesity and diabetes and the failure of many dietary and pharmacological interventions, have contributed to a rise in popularity of metabolic surgery as a therapeutic option for long-term treatment of obesity and diabetes. Surgery-mediated weight loss and insulin-resistance improvement was initially thought to be a direct result of mechanical alterations of the digestive tract. However, evidence suggests changes on the human gut microbiota contribute to fat mass regulation. The aim of this systematic review is to describe microbiota modulations observed after bariatric surgery and its potential relationships with improved insulin resistance. Materials and methods: A comprehensive literature search for published or unpublished studies prior to December 2015 was performed using PubMed and Scopus. Gray literature was also searched through Google scholar. Results: Studies demonstrated that gut microbiota composition is modified after Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy. The richness of gut microbiota increased after RYGB; 37% of increased bacteria belonged to Proteobacteria. Firmicutes decreased in post-gastric-bypass individuals. Increased numbers of Proteobacterium Enterobacter cancerogenus and decreased numbers of Firmicutes Faecalibacterium prausnitzii were mainly associated with BMI and C-reactive protein and Faecalibacterium prausnitzii species was lower in subjects with diabetes and associated negatively with inflammatory markers. Moreover, Roux-en-Y Gastric Bypass results in decrease of Lipopolysaccharides (LPS) from gut microbiota, which has been proposed as a triggering factor for the inflammatory state in obesity and insulin resistance. Conclusion: These results suggest that obesity and diabetes may predominantly be intestinal diseases. Metabolic surgeries could improve the obesity-associated gut microbiota composition towards a lean microbiota phenotype.

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Keywords: Metabolic surgery, Gut microbiota, Obesity, Insulin resistance.

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Association of healthy foods intake with anthropometric measures in a national sample of Iranian children and adolescents: The CASPIAN- IV study

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Abstract

Introduction: This study aims to evaluate the association of consuming healthy foods with anthropometric measures in a national sample of Iranian children and adolescents. Materials and methods: This nationwide study was conducted in 2011-2012 among 13,486 students, aged 6-18 years, selected by multistage cluster sampling from 30 provinces. Weight, height, waist circumference (WC), hip circumference (HC), waist to height ratio (WHtR), as well as waist to hip ratio (WHR) were measured. Healthy foods were considered as four categories including fresh fruits, dried fruits, vegetables, and dairy products. The frequency consumption of each of these foods was recorded as daily, weekly, and seldom. Results: The intake of fruits was significantly associated with anthropometric indices. Moreover, a significant association was found between vegetables consumption and anthropometric indices (except for WHtR and WHR). Milk consumption was significantly associated with anthropometric indices (except for WHtR and WHR). The odds of general obesity among participants who seldom consumed dried fruits was less than those who consumed daily (OR: 0.84, 95%CI: 0.74-0.96). We did not find any significant association for the frequency of fresh fruits and vegetables consumption with obesity and abdominal obesity. Conclusion: Consumption of dried fruits was associated with general obesity in children and adolescents. These results highlight the effect of dietary quality and food choices on weight control in children and adolescents.

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Keywords: Healthy food, High blood pressure, Obesity, Anthropometric measures, Children and adolescents.

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The prevalence of giardiasis in duodenal biopsies of celiac and non-celiac cases in Ali ibn Abi Talib hospital's referred patients in Zahedan in 2015-2016

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Abstract

Introduction: Giardiasis is a diarrheal disease caused by Giardia lambelia. Celiac disease, gluten sensitivity enteropathy, is an autoimmune disease that associated with malabsorption. The purpose of the current study was to determine the prevalence of giardiasis in duodenal biopsies of celiac and non-celiac patients with dyspepsia.

Materials and methods: It is a descriptive-analytic study on 500 duodenal biopsies have been taken from patients with dyspepsia who was referred to Ali ibn Abi Talib hospital of Zahedan in 2015-2016. Celiac and non-celiac patients biopsies according to previous pathological diagnosis had been classified. Presence or absence of giardiasis in biopsies was studied. Statistical analysis of the data was done by SPSS software. The data statistically analyzed using Chi-square test, 95% confidence interval, percentage, mean and standard deviation. (P-value < 0.05).

Results: In 500 duodenal biopsies, 8 cases had giardiasis (6.1%), 35 cases had celiac disease (7%), 465 cases didn't have celiac disease (93%). In celiac cases there was no giardiasis, 8 giardiasis (7.1%) was observed in non-celiac cases. 274 cases were male (54.8%) and 226 cases (45.2%) were female. 19 cases (54.3%) of male cases and 16 cases (45.7%) of female cases diagnosed to have celiac disease. In non-celiac cases, 3 males (1.2%) and 5 females (2.4%) was diagnosed giardiasis. Conclusion: The results indicated that giardiasis didn't have a significant role in dyspepsia and celiac disease, however giardiasis had a more significant role in dyspepsia. It is better that duodenal biopsy take while endoscopy performs to prevent the duodenal abnormality such as celiac disease and giardiasis because observational findings of endoscopy have inadequate sensivity, also celiac disease have a high incidence of non-specific signs.

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Keywords: Giardiasis, Duodenal biopsy, Celiac disease.

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Vanillic acid effects on the activity of antioxidant enzymes in billiary cirrhosis rats

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Abstract

Introduction: In Cirrhosis, the liver slowly deteriorates and its function is abnormal, also scar tissue replaces healthy liver tissue and the flow of blood through the liver is blocked. The Antioxidant treatments have been shown beneficial effects in liver tissue. Vanillic acid with antioxidant properties may be effective in reducing some of the complications of cirrhosis. The aim of this study was to evaluate the effect of vanillic acid on antioxidant enzyme in cirrhotic rats. Materials and methods: Four groups of eight rats were used in this study, including: control, vanillic acid (10 mg/kg, gavage, for one month), cirrhosis and receiving vanillic acid (10 mg/kg, gavage, for one month) + cirrhosis. By bile duct ligation, chronic cirrhosis was induced. The results were measured using a one way ANOVA test. P <0.05 was considered as significant. Results: A significant decrease on antioxidant enzyme (CAT, SOD and GPx) activity was observed in cirrhotic rats. A significant increase in antioxidant enzyme activity was observed in cirrhotic rats receiving vanillic acid in compared with cirrhotic group. Conclusion: Results of this study showed that vanillic acid with improved performance of antioxidant enzymes may be effective for patients with cirrhosis.

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Keywords: Antioxidant enzyme, Cirrhosis, Vanillic acid, Rat.

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Investigation of antibacterial activity of silver nanoparticles produced with marigold extract

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Abstract

Introduction: Silver nanoparticles are used widely in manufacturing of different production for their unique physical and chemical properties and also they have been noticed in medical diagnosis and treatment because of their antibacterial properties. Materials and methods: Physical and chemical methods that used to produce nanoparticles, are expensive and may remain the toxic substances in the nanoparticles. To solve this problem, biological production of nanoparticles is considered as an efficient alternative method. In this study, antibacterial properties of silver nanoparticles produced by marigold extraction and biological methods, were compared with chloramphenicol. Results: The resistance of silver nanoparticles against Pseudomonas aeruginosa bacteria was significantly higher than chloramphenicol but against Staphylococcus aureus showed no significant difference with chloramphenicol. Conclusion: Chloramphenicol showed more resistance against Bacillus subtilis bacteria.

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Keywords: Silver nanoparticles, Marigold, Antibacterial, Plant extract.

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Probiotics supplementation for athletes and its role in athletic performance

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Abstract

Probiotics are live microorganisms that we can find them naturally in fermented food. They have many beneficial effects on human health. Gastrointestinal health is important for athletes and an imbalanced micro biome causes many health problems both within the gastro-intestinal tract and out of it. Using probiotics as nutritional supplements can be beneficial for athletes by modulation gut micro biome and maintaining their gastrointestinal functions and overall health. By a keyword search of "probiotic", "athlete" and "athletic" in PubMed databases, we obtained 40 articles and after analyzing them, we found good results. Lactobacillus helveticus Lafti L10 supplementation can reduce Upper Respiratory Tract Illness (URTI) length in elite athletes. Lactobacillus casei Shirota supplementation may be beneficial in reducing the URTI’s frequency in an athletic cohort but regular L. salivarius supplementation does not appear to be beneficial in reducing the frequency of URTI. Lactobacillus GG (LGG) supplementation has no effects on the incidence of respiratory infections or GI-symptom episodes in marathon runners, but it can be helpful to shorten the duration of GI-symptom episodes. So supplementation with some probiotic strains can have beneficial effects on frequency, severity and/or duration of respiratory and gastrointestinal illness that are common in athletes and important for them. We should pay attention to probiotics in a supplementation plan and the dietitian has a key role for it.

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Keywords: Probiotics, Athlete, Athletic.

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Impact of *Sargassum Tenerrimum* algae extract on the calcium rate of femur and L5 lumbar vertebrae by atomic absorption technique in mice with osteoporosis

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Abstract

**Introduction:** According to the latest investigations doing by researchers on osteoporosis medication, side effects such as osteonecrosis of the jaw, atrial fibrillation, esophageal cancer, atypical femoral fractures, nowadays the use of natural materials has received more attention. **Materials and methods:** In this study, 80 NMRI mice were randomly divided into three groups as: Control, sham and ovariectomy (OVX); and then the OVX group was induced osteoporosis through ovariectomy and injection corticosteroids. After confirming the disease induction by the histopathological method, OVX group was divided into three groups: positive control, experimental, and negative control. Therapeutic dose in the positive control group was 125 mg/kg/day calcium carbonate and 0.025 µg/week/mice of vitamin D, and in the experimental group *sargassum tenerrimum* algae extract by a dose of 10 mg/ml/100g, which was conducted in both groups for 28 days through gavage method. Having euthanized mice at week 24, atomic absorption technique of calcium was performed on L5 lumber vertebrae and femur. **Results:** The rate of bone calcium in the experimental group was significantly more than that in the negative control group (P<0.05), and no significant change was observed in weight and length of bone compared to the negative control group (P<0.05). **Conclusion:** The findings suggest that *Sargassum tenerrimum* algae may result in increased bone formation and bring anabolic effects on the improvement of the disease through increasing the rate of bone calcium like what Yamaguchi and Ushiama (2002) reported.

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**Keywords:** Osteoporosis, Mice, Sargassum algae, Atomic absorption.

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Aripiprazole effect on prolongation of morphine antinociception effect

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Abstract

Introduction: Aripiprazole is a typical antipsychotic drug primarily characterized by partial agonist activity at dopamine D2 and serotonin-1A (5-hydroxytryptamine, 5-HT1A) receptors with minimal side effects. Based on typical antipsychotic pharmacological profile, including antinociception effect and disruption opioid antinociceptive tolerance, the activity of Aripiprazole and its interaction with morphine on nociception was studied in the mouse tail flick and hot plate assay. Materials and methods: In experiment 1, mice received aripiprazole (5, 10 and 20 mg/kg, IP), saline (1 ml/kg, IP) and morphine (5 mg/kg, IP) 30 minutes prior to the test. The tail flick and hot-plate methods were used for pain evaluation. In order to assess the effect of aripiprazole on morphine antinociception in experiment 2, it was administered 30 min after morphine injection and then the test was assessed. Comparisons between the groups were carried out using the Analysis of Variance (ANOVA), and post hoc Tukey’s test. P<0.05 was considered to represent a significant difference. Results: The results indicated that aripiprazole at doses that had no affected themselves (10–20 mg/kg), accelerated and prolonged the morphine antinociceptive effect. It was also shown that partial agonist properties of D₂ and 5-HT₁A as well as antagonist properties of 5-HT₂₅ in aripiprazole likely account for the potentiation of morphine antinociception. Conclusion: These findings also suggest that aripiprazole might have therapeutic value in combination to morphine as an adjuvant analgesic.

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Keywords: Aripiprazole, Antipsychotics, Antinociceptive effect, Morphine, Mice.

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The effect of cannabinoid receptors on extinction memory in fear conditional model in rat

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Abstract

Previous studies have shown that endocannabinoid system have many effects include emotional, motivational behavior, regulation of movement, endocrine function, nociception, thermoregulation, sensory perception, memory and mood, cognition, pain perception, energy balance and extinction learning. They are released from postsynaptic neurons, “on-demand” to elevated levels of intracellular calcium and activate presynaptic cannabinoid (CB$_1$) receptors and suppress transmitter release either transiently or persistently. Also the primary function of the e CB system is to gate and regulate neurotransmitter release, particularly GABA and glutamate. CB1 receptors mainly distribute in mammals brain and in brain sites which play in emotional memory like medial prefrontal cortex (mPFC), Basolateral amygdale (BLA) and hippocampus. Extinction consists of the learned inhibition of retrieval of previously acquired memories. The formation of these aversive memories and fear extinction has been studied according to the Pavlovian learning paradigm. This associative learning process consists of the pairing of a neutral conditioned stimulus (CS) with an aversive unconditioned stimulus (US) eliciting a conditioned fear response. The CS can be a cue (e.g. a tone) or a context (e.g. a room). Fear extinction consists of a new inhibitory learning after repeated or prolonged CS presentations, without the US, which causes a gradual decrease in the magnitude of the conditioned response. The amygdala, prefrontal cortex and hippocampus have all been implicated in the acquisition, consolidation and retrieval of extinction of conditioned fear. The results show the crucial involvement of the CB$_1$ receptor in the BLA, mPFC and hippocampus in the extinction because the CB$_1$ receptor antagonist impairs extinction. Administration of the CB$_1$ receptor antagonist into the BLA before conditioning or before/after the first extinction trial blocks extinction. Findings demonstrated which intra-IL administration of the CB1 agonist WIN 55,212-2 facilitates the extinction of fear-potentiated startle. The e CB system plays an important role in the regulation of fear memories. Also, some studies demonstrate that after an aversive training experience the endogenous cannabinoid anandamide is released into the BLA, hippocampus, and mPFC and normally plays a role in the formation of a strong memory trace. In this review, we try to discusses about of the effects of cannabinoid receptors on extinction memory in fear conditional model in rat.

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Keywords: Extinction, Cannabinoid, Hippocampus, Prefrontal cortex, Amygdale.

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Importance of diagnostic technique of diffuse reflectance spectroscopy in studying treatment trend of diabetic's patients

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Abstract

Diabetes is a metabolic disorder which affects all organs of the patient's body. Worldwide, due to the outbreak prevalence of diabetes, health care systems and research centers attention has increased. In Iran, the prevalence of the disease in different regions is ranging from 3 to 17%. Late time of diagnosis and the use of improper treatment lead to irreversible consequences, including amputation of the affected foot. Optical spectroscopy technique as a useful, safe, less invasive and real time method is reliable for evaluating and differentiating between healthy and diseased tissue, benign and malignant ones. Diffusion reflectance spectroscopy (DRS), is a technique that uses light sources in visible and near-infrared spectrum (400-800 nm), able to measure the optical properties of tissue including absorption and scattering coefficients of biological tissue and tissue chromophores change such as oxy / Deoxy-hemoglobin in the physiological process. The use of optical spectroscopy techniques can be effective and complementary method to evaluate the progress or lack of improvement in the patients compared with observational methods that may affect decision in the other clinical stages. In this review, we try to discuss the effect of DRS for assessing the levels of hemoglobin oxygen saturation of hemoglobin in the microcirculation and investigating the healing changes in diabetic foot ulcer disease under different treatments. Diabetic's patients in different groups with and without diabetic foot ulcer before and after treatment are assessed.

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Keywords: Diffuse reflectance spectroscopy, Hemoglobin oxygen saturation, Diabetes foot ulcer.

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The effect of educational package on maternal self-confidence of primiparous women in postpartum period: A randomized controlled clinical trial

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Abstract

Introduction: Transition to motherhood is a stressful and challenging process in the postpartum period, so that mothers not only face with new maternal tasks but also with significant changes in their bodies. The aim of this study was to determine the effect of training packages on maternal self-confidence in the postpartum period. Materials and methods: This randomized controlled clinical trial was conducted on 136 primiparous women who were referred to health centers in Tabriz, Iran, for their second postpartum care (10-15 days after delivery). Primiparous women aged 18-35 with singleton pregnancy and term birth (37-42 weeks) were randomly assigned to training (n=68) and control (n=68) groups. The education group was provided with a face to face training session, three phone sessions, and a booklet. The control group received the routine postpartum care in days 1-3, 10-15, and 42-60. Participants completed the Lips maternal self-confidence questionnaire before the intervention and eight weeks postpartum. ANCOVA with adjustments for baseline score was used for analysis. Results: No statistically significant difference was found between the two groups in terms of socio-demographic characteristics except for infant’s gender (p>0.05). At 6 weeks after the intervention and by adjusting for baseline scores, mean scores of maternal self-confidence (Adjusted mean difference: 16.6; CI 95%: 13.8 to 19.3, p<0.001) in educational group were significantly higher than the control. Conclusion: Results showed that training women have a positive effect in increasing their self-confidence.

Keywords: Postpartum period, Education, Self concept.

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The effect of educational package on functional status of primiparous women in postpartum period: A randomized controlled clinical trial

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Abstract

Introduction: Postpartum period is an important transition for parents, infants and families physiologically, emotionally and socially. The aim of this study was to determine the effect of training packages on functional status in the postpartum period. Materials and methods: This randomized controlled clinical trial was conducted on 136 primiparous women who were referred to health centers in Tabriz, Iran, for their second postpartum care (10-15 days after delivery). Primiparous women aged 18-35 with singleton pregnancy and term birth (37-42 weeks) were randomly assigned to training (n=68) and control (n=68) groups. The education group was provided with a face to face training session, three phone sessions and a booklet. The control group received the routine postpartum care in days 1-3, 10-15, and 42-60. Participants completed the functional status questionnaire before the intervention and eight weeks postpartum. ANCOVA with adjustments for baseline score was used for analysis. Results: No statistically significant difference was found between the two groups in terms of socio-demographic characteristics except for infant’s gender (p>0.05). At 6 weeks after the intervention and by adjusting for baseline scores, mean scores of functional status (Adjusted mean difference: 0.9; CI 95%: 0.8 to 1.03, p<0.001) in educational group were significantly higher than the control. Conclusion: Results showed that training women have a positive effect in improving their functional status.

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Keywords: Postpartum period, Education, Functional status.

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Sex differences in tolerance to morphine antinociception in intra-nucleus accumbens administration of morphine in rat

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Abstract

Introduction: Sex differences in analgesic responses and tolerance to morphine under the systemic and injection in some nuclei of the brain have been reported, although the direction of these differences varies across studies. The purpose of the present study was to determine whether development tolerance to the analgesic effect of morphine differ between male and female in intra-nucleus accumbens administration of morphine in rat.

Materials and methods: In order to induce tolerance, adult male and female rats were injected with morphine (2.5, 5, 10 and 50 µg/0.5 µL; intra-accumbal infusions) for 4 consecutive days during which, non-tolerant group received a single dose of morphine (saline for 3 consecutive days and morphine on 4th day) and control vehicle group received saline (4 consecutive days). On day 4, tail flick and hotplate test was done for pain evaluation in separated groups. Comparisons between the groups were carried out using the Analysis of Variance (ANOVA), and post hoc Tukey's test. P<0.05 was considered to represent a significant difference.

Results: The results of study revealed 4 things. 1) No significant morphine antinociceptive effect by tail flick test in both sexes, while the significant antinociceptive effect of morphine were observed in the hotplate test. 2) No significant sex differences were observed in hotplate test after acute morphine injection to animals. 3) Rats showed significantly tolerance to morphine analgesic effects under protocol by hotplate test. 4) Female rats showed significantly more tolerance to morphine analgesic effects than males by hotplate test.

Conclusion: These data demonstrated that there were sex differences in tolerance to morphine antinociception in intra-nucleus accumbens administration that is dependent, in part, on the nociceptive test.

Keywords: Sex differences, Nucleus accumbens, Antinociception, Tolerance, Morphine, Rats.

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Improvement of Paracrine potentialities of Mesenchymal stem cells using simple suspension culturing method

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Abstract

Introduction: Mesenchymal stem cells (MSCs) are isolated from different tissues including (WJ). They have shown to have paracrine ability to support hematopoietic stem cells (HSCs) expansion in vitro. However, the WJ-derived MSCs are very heterogeneous and have limited capacity to secret cytokines that involve in hematopoiesis. Hence, improvement of their culture condition might promote the secretion capacity of WJ-MSCs. Materials and methods: Herein, we set up a simple culturing method for WJ-MSCs which promotes their cytokines secretion. WJ-MSCs were separated from wharton’s jelly. The isolated cells were added to Methocult medium diluted in α-MEM and seeded in poly-HEMA-coated plates. WJ-MSCs conditioned medium was harvested and concentrated from serum free media. The expression of some cytokines including IL-6, IL-11, granulocyte-macrophage colony-stimulating factor (GM-CSF) was evaluated by RT-PCR and western blot techniques. WJ-MSCs that cultivated under suspension condition expressed more GM-CSF and IL-11 in comparison to those of that cultured in adherent conditions (P<0.05 and P<0.001). Results: There was no significant difference between the secreted amount of IL-6 from suspended and adherent WJ-MSCs. Suspension cultivation of WJ-MSCs enhances their ability to produce some important hematopoietic cytokines. Conclusion: These suspended WJ-MSCs could be used for more effective low cost in vitro expansion of HSCs.

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Keywords: Wharton’s jelly, MSCs, Paracrine effects, HSCs engraftment.

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Study of deep eutectic solvent effect on matrixmetalloproteinase-9 stability and structure with treatment purpose

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Abstract

Introduction: Matrix metalloproteinases-9 is a family of zinc dependent endopeptidases commonly known for their abilities to cleave components of the connective tissue such as collagen, elastin and proteoglycan. MMP-9 plays an important role in the development of many diseases such as periodontitis, atherosclerosis and cancer. Therefore, increasing the stability of the enzyme in order to study three-dimensional structure to design of inhibitors with the goal of therapy is very effective. Materials and methods: One of the newly developed methods for stability of enzyme is using Deep Eutectic Solvents (DESs). Herein, active full length recombinant human MMP-9 (amino acid residues 107-707) has been expressed in Escherichia coli BL21, using the vector pET21a. Purification and refolding were conducted using urea gradient method on Ni-NTA column, simultaneously. In this study, the effect of DES based on mixtures of choline chloride and glycerol with a 1:1 mol ratio was investigated on MMP-9 activity, stability and structure. Results: MMP-9 has high activity in presence of 30% v/v DES. The structure of the enzyme by intrinsic fluorescence studies confirmed these results. Compared to buffer, the thermal stability of the enzyme and the remaining activity increased in presence of solvents. Conclusion: Improvement of matrix metalloproteinase-9 thermal stability can be attributed to compactness of structure in the presence of DES in order to evaluate the three-dimensional structure and synthesis of inhibitors with aim of therapy has an enormous effective.

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Keywords: Matrixmetalloproteinase-9 (MMP-9), Deep eutectic solvent, Thermal stability, Remaining activity.

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Antidiabetic effect of *Ziziphus Jujuba* fruit in Alloxan induced diabetic male rats

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**Abstract**

**Introduction:** Tradit traditional plant medicines are used throughout the world for a range of diabetic complication. Recently, *Ziziphus Jujuba* fruit has been taken into consideration in the treatment of diseases, due to not having any side-effects. In the present study, the antidiabetic effect of *Ziziphus Jujuba* fruit was investigated in Alloxan-induced diabetic rats. **Materials and methods:** In this experimental study, animals were divided into 6 groups (8 rats/group): healthy group, diabetic group, in which diabetes was induced by intraperitoneal (i.p.) injection of Alloxan (at dose of 120 mg/kg) and experimental groups, which were treated with i.p. administration of hydroethanolic extract (at doses of 50, 100, 200, and 300 mg/kg) for 14 days. The diabetic control group was treated daily with saline. After 14 days, the animals were anesthetized with ether and sampling of blood and liver was done. Liver sections were stained with haematoxylin-eosin. Serum levels of glucose, total cholesterol, triglyceride, LDL-c, HDL-c, urea, uric acid, enzymes alanine aminotransferase (ALT), aspartate aminotransferase (AST) and alkaline phosphatase (AP), were measured using kit and liver histopathological damages. **Results:** The treatment of Alloxan significantly increased serum levels of glucose, urea, ALT, AST, AP and liver histopathological damages compared to the healthy group. Treatment with hydroethanolic extract of *Ziziphus Jujuba* fruit for 14 days (at doses of 50, 100, 200, and 300 mg/kg), significantly decreased serum levels of glucose, urea, ALT, AST, AP and histopathological damages, while increased serum HDL level compared to the diabetic control group. **Conclusion:** Hydroethanolic extract of *Ziziphus Jujuba* fruit has antidiabetic effect on diabetic animals. Therefore, this plant is a good candidate for the treatment of diabetes mellitus.

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**Keywords:** *Ziziphus Jujuba* fruit, Diabetes mellitus, Rat, Alloxan.

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Determination energy level of intermediate and transition state of Mnemiopsin

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Abstract

Introduction: Mnemiopsin 1 is a member of photoprotein family, made up of 206 amino acid residues. We examined whether three mutations, namely R39K, S128G and V183T affect the thermodynamic stability. Protein engineering analysis with stopped-flow fluorescence measurements and chevron plot analysis may also be used to characterize transition states and intermediate structures of refolding reaction. Materials and methods: Kinetic traces were analyzed by fitting to exponential function of equation using Biokine software: 

\[ F(t) = at + b + \sum C_i \exp(\pm k_i t) \]

Where; \( F(t) \) is the fluorescence signal at time \( t \), \( C_i \) is the amplitude, \( k_i \) the rate constant, \( a \) the slope of the drift and \( b \) is the offset of kinetic curve corresponding to the baseline. Results: In the first model of analysis, we assumed two-state folding. It is evident that refolding arm of the chevron plot shows a deviation from linearity which becomes evident at low urea concentrations, showing a clear systematic deviation from the expected values for a two-state behavior. The low quality of fitting to a two state model indicates that chevron plots should be fitted to other models rather than two state one. In three-state model, we assumed that the chevron plot curvature at low urea concentrations indicates the transient accumulation of a partially folded species with a partially non-native topology, which is less sensitive to urea. Conclusion: According to resulting data and comparison of equilibrium constants for formation of intermediate state from unfolded structure (\( K_{\text{UI}} \)), it reveals that accumulation of intermediate state during refolding reaction is greater in R39K and V183T relative to the WT and S128G variants. The formation of native structure from intermediate state (\( k_{\text{IN}} \)) is accompanied by a further molecular rearrangement of molecule and the values of rate constants of reverse reaction (\( k_{\text{NI}} \)) are negligible when compared with those of forward reaction (\( k_{\text{NI}} \)).

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Keywords: Mnemiopsin, Chevron plot, Urea-induced unfolding, Stopped flow, Intermediate.

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Bioactivity and potential health benefits of Thymus vulgaris

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Abstract

Before the development of modern medicines, plant species are used in drugs and traditional medicines. Medicinal plants are widely used in various fields of medicine, industry and agriculture. Specially in medicine, these plants are considered to be useful in cancer treatment. Studying medicinal plants help to understand plant’s toxicity and protect human and animals from natural poisons. Here we have reviewed the biological activities of Thymus vulgaris as a medicinal plant. To study pharmacological aspects of Thymus vulgaris, the literature in this case was used from scientific sites from 2011 to 2016. Thymus vulgaris oil is a combination of monoterpenes and those will act as an antioxidant, antimicrobial, medicinal drug, antitussive, antispasmodic and antibacterial activities. Thymus vulgaris could have an anticancer effect and that, some of its bioactive compounds may prove to be effective treatment modalities for human CRC. The results of antimicrobial activity of the essential oils supported the use of the tested plant species in the treatment of minor wounds and disorders of the oral cavity and as an antibacterial agent in oral hygiene. Extracts from thyme (Thymus vulgaris) has shown inhibitory activity against Herpes simplex virus. The synergistic effects of these active chemicals with other constituents of the essential oils should be taken into consideration for the antimicrobial activity. Because of the effective oil component of this plant on target pathogen and effects of natural compounds on fungus, thyme can be used as an easily available source of natural antioxidants and antibiotics in food products and drugs. Therapeutic plants are utilized in different medication preparations and receive particular attention in research to develop new agents of pharmaceutical importance.

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Keywords: Thymus vulgaris, Bioactivity, Antimicrobial, Medicinal plant.

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Anti-tomur and antimicrobial activities of Nano derivatives from four plant groups and study their characterizations

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Abstract

Introduction: Anticancer drugs have originated from a variety of sources, including dyestuffs and chemical warfare agents, and from natural products such as plants, microbes and fungi. Natural compounds as an anticancer and antibacterial agents, used for synthesis of metal complexes because the biological activity of these compounds are believed to increase when they are coordinated with transition metal ions. Materials and methods: In this study, metal complexes of natural compounds have been prepared and characterized by elemental analysis, ¹H-NMR, IR, Raman and UV-visible spectroscopy also metal complex nanoparticles were prepared by the ultrasonic method and characterized by SEM, XRD. All plant extracts (Phytochemical Samples) were purchased from Merk and were used without further purification. Results: The data suggest that these new complexes have excellent antitumor activity against two kinds of cancer cells: AGS (Stomach) and MCF-7 (Breast) cells. Also, these complexes were tested for their antibacterial activity against Staphylococcus aureus, Streptococcospyogenes, Escherichia coli, Pseudomonas aeruginosa comparatively with that of free ligand. No inhibition zone was seen in Thymol complex (Nano scale) and Thannic acid ligand, reflecting no antibacterial activity for these materials. Caffeic acid complex (Normal scale) against E coli and Thymol ligand against Pseudomonas aeruginosa were more effective with 14 mm as zone of inhibition. Conclusion: According to our results, metal complexes of 4 plant groups could be used as raw materials for phytotherapy because of their antibacterial activities.

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Keywords: Natural compounds, Co (II) complex, Anticancer activity, Antibacterial activity, Nanoparticles.

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Trends in scientific publications of traditional Iranian medicine

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Abstract

Traditional Iranian medicine (TIM) is the major part of complementary and alternative medicine (CAM). The popularity and use of alternative therapies are increasing due to adverse effects and ineffectiveness of pharmacologic treatments in some cases. Herbal medicine is one of the methods of traditional therapy that plays a key role in the treatment of various diseases, specifically in diabetes mellitus, hyperlipidemia and obesity that are growing rapidly in the world. In this article, trends of scientific publications of Iranian medicine in endocrinology and metabolic disorders have been investigated. The results of the present study show that the numbers of related researches have uptrend from 2000 till now. These data are valuable to pharmaceutical companies to get the idea to invest and produce effective drugs.

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Keywords: Complementary medicine, Alternative medicine, Herbal medicine, Traditional Iranian medicine, Pharmacologic treatments, Pharmaceutical companies.

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PTPN221858C>T gene polymorphisms in Alopecia Areata: A case–control association study in Iranian population

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Abstract

Introduction: Alopecia Areata (AA) is an autoimmune disease characterized by well-circumscribed patches of hair loss especially from the scalp. The gene encoding the protein tyrosine phosphatase, non-receptor type 22 (PTPN22), which is exclusively expressed in immune cells, has been considered as a risk factor associated with a number of autoimmune diseases. The current study has been performed to investigate whether the PTPN221858C>T SNPs predispose to Alopecia Areata in Iranian patients.

Materials and methods: The study group comprised 30 patients (13 female and 17 male with mean age 26.3 ±12.5 years) with Alopecia Areata and 15 healthy controls (5 Female and 10 Male with mean age 30.1 ±5.8 years). Genomic DNA was extracted from whole blood using DNG-Plus method. All individuals were genotyped for PTPN22 polymorphisms using the PCR–RFLP analysis.

Results: PCR-RFLP results showed that TT was most frequent genotype in both patient and control groups (OR=3.5, 95%CI= 0.3-32.1, p value>0.05). CT genotype was detected in 6.7% and 13.3% of patients and controls, respectively (OR=0.4, 95%CI=0.05-3.67, p value>0.05). Genotype CC was detected in 73.3% of patients and 80% of controls (OR=0.6, 95%CI=0.15-3.08, p value>0.05). Conclusion: The PTPN22 C1858T is not relevant in susceptibility to AA in the Iranian population.

Keywords: PTPN22, Polymorphisms, Alopecia Areata, PCR–RFLP.

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Bioinformatic analysis of Antimicrobial peptide derived from Iranian scorpion, Hemiscorpious Lepturus

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Abstract

Introduction: Microbial resistance to antibiotics is a growing concern among the health care experts which has made them searching for the alternative therapies. In recent years, antimicrobial peptides have gained much interest as an alternative to the traditional antibiotics. Antimicrobial peptides naturally exist in all the organisms and play an essential role in their intrinsic immune system. Many of them have been identified in recent decades and separated from insects, Amphibians and mammals. Antimicrobial peptides have vast activities and could be used as antibacterial, antiviral, antifungal and even sometimes as anti-cancer and anti-tumor agent. The researches have shown that each scorpion could possess more than 100 different peptides with weight ranging from 1000-9000 Dalton. Materials and methods: Antimicrobial peptides have low sequential homology. Therefore, by having RNA sequence in venom gland of Hemiscorpious Lepturus, and bioinformatics software, we tried to identify these peptides. First, Hemiscorpious Lepturus venom was obtained. RNA extracted by standard method and then sequencing of active RNA genes were performed by external service and DNA sequences were received as a databank. After searching for required codes and extracting DNA sequence, the largest ORF of the genes was obtained via Expasy server, for each of them, BLAST tests were performed. After investigating the sequence similarities, the active sites of the main peptide chain was discovered, and 2-d and 3-d structures of the peptide was predicted. Results: Among the codes, only 4 of them were associated with antibacterial peptides. The sequences were translated by EXPASY TRANSLATOR server. For the largest ORF, BLASTP test was done. The results showed that one sequence belongs to antimicrobial peptides super family. After characterization of the similar peptides via different servers, it was revealed that the mentioned peptide is structurally similar to antibacterial peptide of South American and African scorpion venom. Conclusion: Characterization of these peptides could be used for tracing a proper therapeutic potential agent.

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Keywords: Hemiscorpious Lepturus, Scorpion venom, Bio-informatics, Antimicrobial peptides.

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CT-Image analyzing using MC simulations to diagnose lung cancer at early stages

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Abstract

Introduction: Monte Carlo(MC) simulation is an accurate method to analyze CT-images. The main purpose of this research was to apply MC modelling to develop an integrated multimodality image display system to aid lung cancer detection. Materials and methods: BEAMnrc was used for MC simulation to create a database of numbers ranged from 1 to 3 for normal tissues include bone, muscle and air and 4 for abnormal tissues. To digitalize the CT-images, the density and HU number (Hounsfield Units) of targets were considered. The volume of interest for the simulated lung was set to 0.8×0.8×0.5 μm³. The CT-images conversion was repeated 10 times for ten different patients. The results of MC simulation were then directly compared with the results of radiologist’s observations. Results: There were 150 suspected locations of abnormal tissues found by MC simulation for all CT-images that 124 of them were confirmed by radiologists as cancerous tissues. The agreement between MC simulation and practical observation was more than 80%, which demonstrates the accuracy of MC model of CT-images. Conclusion: The accuracy of MC simulated imaging system of lung cancer was significant. This method can be exploited to aid screening and improve the diagnosis of lung cancer in clinic.

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Keywords: MC simulation, CT image analyzing, Hounsfield Units.

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Cross check agent genetic and different polymorphism in idiopathic infertility

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Abstract

Idiopathic infertility refers to a type of infertility that its physiological, anatomical and molecular causes are not found to justify it. In fact, when the initial visit parameters for infertile couples including sperm standards examination and spermatography analysis, structure of the reproductive organs such as openness of Fallopian tubes, lack of endometriosis as well as improper function of the ovaries and ovulation control were analyzed and the accuracy of these parameters was in accordance with the standards and when the planned fertility did not occur due to ovulation time, idiopathic infertility (infertility of unknown cause) is detected. Idiopathic infertility is directly related to infertility genetics. Various genetic factors are involved in infertility idiopathic such as certain polymorphisms, and mutations in genes in sexual chromosomes. XRCC1 Gene Arg399 G/n is among important polymorphisms: 1. polymorphism in female infertility removed certain areas of the KISS1 in the receptor gene 155bp in Cron 148 and remove the piece of 2. Polymorphism, which ultimately leads to a kind of oligospermia (low number of sperm) and azoospermia (absence of sperm from the semen fluid) in Y chromosome. In the name of DF, the product Y reproduces genes on the short arm of SRY chromosome of the genes involved in the evolution and development of the reproductive organs. Determining factor testis produces DNA, which is a binding protein to DAX1, WT1, SF1, and SOX1. This gene along with other numerous genes controls the expression of genes involved in the development of testis. In the absence of the proper function of these genes, the early testes of embryo develop into ovarium. We conclude that in many infertility treatments, due to the interference of molecular and genetic mechanisms, it has not favorable effects, therefore, the analysis of infertility genetic factors should be the first stage of idiopathic infertility diagnosis.

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Keywords: Polymorphism, Genetic mutation, Idiopathic infertility, Sex genetics.

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Evaluation of cytotoxic properties of Aqueous and alcoholic extracts of liquorice plant (Glycyrrhizaglabra L) on DU-145 cell line

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Abstract

Introduction: Prostate cancer is the second most common cancer in men after skin cancer. Throughout the years, medicinal plants, and in some cases the only treatment were considered. Several medicinal plants have been identified to have anti-cancer properties and also plants as a source of antioxidants and phenolic compounds are considered. Licorice plant with the scientific name Glycyrrhizaglabra L belongs to the family Fabaceae, with three species of perennial herbaceous plants in Iran. Root extract is widely used around the world in the medical, food, drug and other industries. In this study, the cytotoxic effect of Aqueous and alcoholic extracts of licorice root of human prostate cancer (DU145) was determined by MTT assay. Materials and methods: Licorice root through Agriculture and Natural Resources Research Center of Isfahan was prepared. Then the Aqueous and alcoholic extracts of the plant were made. DU-145 cell line RPMI-1640 medium containing 10% bovine serum in an incubator with 5% CO2 and the Aqueous and alcoholic extracts of cultured under different concentrations of 24, 48 and 72 hours was incubated. MTT assay to determine the survival rate of the cells in the presence and absence of the extracts was determined by ELISA absorbance read at 540 nm. Data were investigated by using SPSS software (* = P-value < 0.05, N=12). Results: The results show a decrease in the survival rate of the cells was determined by MTT assay. Conclusion: The results of this study, it states that aqueous extract of licorice plant may have some cytotoxic effects, because of terpene compounds in licorice.

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Keywords: Cytotoxic, Licorice plant, Cell's line.

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When dreams die: Parental experience after child's death

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Abstract

Introduction: Death of a child is considered as one of the greatest devastating failures that makes the continuation of life difficult for the parents. With a child's death, parents lose a part of themselves and a part of their future dreams, and their loss is extremely vast and extensive. Hence, the present study has been conducted for the purpose of describing the experiences of parents who have lost a child. Materials and methods: This study used a qualitative approach through a phenomenological method. Sampling was based on the objective of the research and the method of interview was unstructured and conducted until the full data saturation. Information was gathered through interview with 23 fathers or mothers who had lost their child. Colaizzi's method was used for data analysis. Results: Conducted interviews were analyzed. From the total 371 concept codes, 22 sub concepts along with 7 main concepts were identified. Main concepts include moving forward, mourn, desperation, need for support, consolation, abandoned, and mental impasse. Conclusion: Results of the current study show that the death of a child makes the continuation of life difficult and causes the creation of deep crises for parents; the results of these crises will be the creation of destructive influential reactions in their lives. Real understanding of the mental condition of parents at the time of the loss child and then, a necessary step in improving the health of the parents.

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Keywords: Death, Child, Child's death, Parents, Bereavement.

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What children are saying: Children's experiences of being hospitalized

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Abstract

Introduction: Being ill and hospitalized may be the first emotional crisis a child encounters. Children in their infancy are more susceptible to the trauma of being hospitalized. This group tends to feel a crisis when hospitalized because children possess fewer mechanisms for adapting themselves, thus they can not alleviate the suffering. Materials and methods: This study used a qualitative approach through a phenomenological method. Data were collected through in-depth interviews with 16 children aged 7 to 12 years from pediatric wards in hospital in Iran. Results: Conducted interviews were analyzed. Three main concepts of spiritual, physical, and environmental problems were extracted from among 98 primary codes. Conclusion: This paper highlights the significance of children's physical and socio-psychological needs during hospitalization. The results clearly show that children need sufficient information according to their needs and, moreover, their comments should first be sought on how to plan for services. Finally, the hospitals' environments should be more child-friendly.

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Keywords: Hospitalize, Child, Experience.

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Evaluation of health promoting lifestyles and its related factors among the oil company retires in Mahshahr, the southwestern city of Iran

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Abstract

Introduction: Health promoting lifestyle can involve both spiritual and physical health. It can also improve the quality of life, especially in elderly population. One of the important results of this is to prevent or control chronic diseases in elderly group. Few studies in Iran have assay health promoting lifestyle among elderly population. And until now there is no study on oil industry retired to determine the health promoting behaviors among this society. The aim of this study is to assess health promoting lifestyle and its effective related factors among oil company retired persons in Mahshahr the southwestern city of Iran. Materials and methods: This is a cross-sectional study that was conducted using a sample of retired persons at oil company retirement center in Mahshahr city of Iran. The state of health promoting lifestyle and demographic affecting factors were determined by using Health Promotion Lifestyle Profile II (HPLP-II) questionnaire, the Persian version. Data were analyzed by descriptive and analytical statistics using the t-test, one-way analysis of variance, correlation analysis, and multiple linear regression analysis using spss21. Results: Of the 220 distributed questionnaires; 160 completed and returned. The results showed that the total average score of the HPLP-II of oil company retires in Mahshahr was 146.47 (SD=1.48). The highest score was for nutrition subscale (A=81.1, SD=0.81) and the lowest score was for physical activity (A=59.57, SD=1.27). There was a significant relationship between the health promoting lifestyle and level of education (P=0.001), income (P<0.001) but no statistically significant relationship found between BMI, number of children with health promoting lifestyle. Conclusion: Health promoting lifestyle of samples was in intermediate level. Level of education and income status are the most important factors affecting the health promoting lifestyles in this study. Retires need to improve their skills and health behaviors. Achieving this important goal needs more training even before retirement through good policy making and health care organization.

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Keywords: Health-promoting lifestyle, Oil company, Retires, Elderly, HPLP2.

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The relationship and the importance of diet in breast cancer

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Abstract

According to the World Health Organization, 13% of total deaths in the world (6/7 million) is due to cancer. Breast cancer is the most common cancer in women, it is effective in the treatment of early diagnosis of disease. Although the etiology of breast cancer is unclear, but nutrition is an important factor in the decrease or increase the risk of breast cancer. Breast cancer causes serious physical, psychological and economical for patients. The usual strategy in the treatment of breast cancer is: Surgery, hormone therapy, chemotherapy and radiation. According to statistics from the Ministry of Health, the cancer is fifth in Iran. The aim of this study was to evaluate the role of nutritional factors in the development of breast cancer. For the purpose, the relevant articles in the databases PubMed; Medline; Google Scholar; Cocharne with the keyword breast cancer, diet, prevention; were of article 73. After careful study of the number of 31 papers from 2013 to 2016 was the most relevant choice of data that was used for writing this article. Studies show that the risk of breast cancer by taking Carotenoid found in carrots and herbs, omega-3 found in fish, green tea, vitamin D, milk due to conjugated linoleic acid; the butter and olive oil; were reduced. Taking fat, carbohydrates and alcohol is associated with an increased risk of breast cancer.

About consumption of soy, folate and fiber, the findings were contradictory. According to the study Night Sofi and Masha Kapil in 2016, a positive association between fat consumption and reduce the frequency of breast cancer was found. According to a 2015 study by Roberta Mannucci there was a significant negative answers all dairy products and breast cancer risk. Recommend lifestyle changes, including vegetables such as broccoli, cauliflower and foods that contain vitamins such as A; C; E are very important factors in the prevention of breast cancer. Considering that in the present age the major cause of many diseases is due to non-observance of healthy lifestyle, including poor eating habits; It seems advisable to change healthy lifestyle and nutrition habits are effective in preventing breast cancer.

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Keywords: Breast cancer, Diet, Prevention.

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miR-590 down-regulates the genes of signaling pathways similar in inflammation and cancer in breast cancer cell lines MDA-MB-231 and MCF-7

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Abstract

Introduction: Breast cancer is a heterogenous disease which is considered as the most common malignancy that develops in women worldwide. Despite all efforts on identifying cancer, there is no definite therapy yet and much more attempts in discovering cancer biology seems necessary. Immunology of tumors declares the relevance of immune system, chronic inflammation and cancer. Several studies indicate that the immune system may either aid in the prevention as well as the promotion of carcinogenesis. Materials and methods: Evaluating the progressing activity of immune system and inflammation in many diseases, we evaluated some molecular signaling pathways similar in inflammation and cancer and then detected the microRNAs which play pivotal roles in mediating these pathways. Using bioinformatic assays, signaling pathways common in both inflammation and cancer, and microRNAs mediating them were detected. miR-590 was selected and cloned into the pLenti-III-eGFP vector and then transfected into the breast cancer cell lines, MCF-7 and MDA-MB-231 using X-tremeGENE HP DNA Transfection Reagent. Results: 72 hours after transfection, the expression levels of miR-590 and the genes of JAK2, PI3K, MAPK1 and CREB were measured by Real-Time qRT-PCR. miR-590 showed over-expression as expected and the candidate genes were significantly down-regulated. Conclusion: miR-590 was selected as a microRNA which triggers and down-regulates the molecules and genes of signaling pathways similar in cancer and inflammation such as JAK2, PI3K, MAPK1 and CREB and a significant decrease was observed in these genes. The reduction occurred in these genes in breast cancer cell lines following the miRNA treatment is notable and in fact, more studies are needed to investigate the miR-590 function on breast cancer treatment.

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Keywords: Breast cancer, Inflammation, microRNAs, Transfection.

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Anti-inflammatory effects of *Tanacetum Balsamita* essential oil on carageenan-induced Paw Edema in rats

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**Abstract**

**Introduction:** *Tanacetum balsamita* essential oil due to polyphenolic compounds that exist naturally in plants have analgesic and anti-inflammatory properties. **Materials and methods:** The anti-inflammatory property of *Tanacetum balsamita* essential oil (TBEO: 100, 150 and 250 mg/kg) assessed by carageenan-induced paw edema method in rats. **Results:** In carageenan test, dose of 250 mg/kg *Tanacetum balsamita* oil significantly reduced the paw edema in rats compared to animals that received vehicle only (p<0.05). The anti-inflammatory activity of *Tanacetum balsamita* essential oil was found to be more than standard drug, Mefenamic Acid (30mg/kg). The studied oil was analyzed by GC and GC–MS and forty four constituents, representing 84.1 % of the oil were identified. The major components of the oil were characterized as Carvone (39.8%) which might be responsible for this observed activity. **Conclusion:** The results suggest that *Tanacetum Balsamita* essential oil possesses biologically active constituents that have significant peripheral anti-inflammatory effects which support the ethnomedicinal claims of the plant application in the management of pain and inflammation.

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**Keywords:** Tanacetum Balsamita essential oil, Anti-inflammatory, Carageenan test, Rat.

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Inhibition of metastamiR -335 and -373, playing different functions in cancer stem cell rich MDA-MB231 cell line

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Abstract

Introduction: MicroRNAs which were known as a master regulator of gene expression, are small non coding RNAs that suppress gene expression post-transcriptionally by sequence-specific interactions with the miRNA response elements. MiR-335 is suppressing metastamiR but miR-373 is promoting. The existence of microRNA in metastasis pathways (metastamiRs) is hoping to discover a way to suppress miRs for reducing in metastasis. And also for cancer therapy by decreasing the number of stem cells, inhibition of metastamiRs can possibly reduce the risk of breast cancer. Materials and methods: MDA-MB231 (Metastatic), MCF-7 (Tumourigenic) and MCF-10A (Non-tumourigenic) cell lines have been cultured. The proportions of CD44+/CD24−/low cells to detect breast cancer stem cell were evaluated by flow-cytometry. The double strand oligo of mature miR and inhibitor were designed and cloned to pcDNA 6.2gw/EmGFP according to the manufacturer’s instruction of the BLOCK-iT™ Pol II miR RNAi Expression Kit. All cells have been transfected by lipofectamin 2000. Isolation of miRNA was performed by High Pure miRNA Isolation kit and expression of miR-335 and miR-373 were quantified by LNA enhanced RT microRNA PCR primer (real time PCR). Invasion and migration assay have been carried out. Results: The result of our evaluation shows that MDA-MB231 has a high proportion of CD44+/CD24−/low cells in comparison to the other cells. The relative expression of miR-335 and miR-373 in metastatic MDA-MB231 was 0.03% and 1.19%. After transfection miR-335 increase to 2.58% and miR-373 decrease to 0.71%. Matrigel-coated Transwell assay showed extreme reduction in invasiveness. Conclusion: Since cancer stem cells are resistant against common treatments and their isolation are arduous, MDA-MB231 cell line could be used as amenable BCSCs models to study innovative methods of cancer therapy. In this regard, miR-therapy could open new horizons in the field of cancer treatment and introduction of novel and promising drug candidates.

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Keywords: Breast cancer stem cells, metastamiR.

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Isolation and distribution of Lectin producing Bacillus subtilis in the soil samples of Fars province

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Abstract

Introduction: Lectins are regarded as ubiquitous proteins or glycoproteins, owing to their specific feature; binding reversibly to carbohydrates occurring on cells surfaces that makes them a part of strategies chosen by pathogens to bind to host tissues that results in infection. Isolation, molecular detection and distribution of Lectin producing Bacillus subtilis bacteria in the soil samples of central zone of Fars province was the aim of the work. Materials and methods: Soil samples of different weather conditions were collected. The bacterial species were isolated from soil samples by using serial dilution method. To isolate Lectins, the cell free liquid media was submitted to precipitataion with ammonium sulfate to 70% saturation after incubating bacterial isolates in media rich in carbohydrates. Hemagglutination of 2% suspension of rabbit blood cells was used to test the presence and activity of purified Lectins. In order to increase the purity of Lectins in samples, a heat shock to a temperature of 70°C for 30 minutes was applied to eliminate other thermolabile proteins. Concentration of the protein was measured by nanodrop. Results: A total number of 46 colonies were isolated based on their colony morphologies and biochemical assays, among them 41 were verified as Bacillus subtilis after molecular identification. 25 numbers of Lectin samples could agglutinate red blood cells which confirm the presence and activity of the selections produced by related bacteria species. Conclusion: Some parts of Fars province are rich in saprophytic bacteria, Bacillus subtilis with Lectin producing activity. The method mentioned above is efficient for Lectin producing.

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Keywords: Lectin, Bacillus subtilis, Soil sample.

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Spasmolytic action of hydro alcoholic extract of Parsley (*Petroselenium crispum*) seed on rat's ileum contraction at presence histamine

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Abstract

**Introduction:** Traditional herbal medicine such as *petroselinum crispum* (parsley) has been used for treatment of intestinal disorders. Also, considering to the histamine receptors in the rat's ileum, the present study aimed to investigate the inhibitory effects of seeds of *petroselinum crispum* on the isolated rat's ileum at presence histamin.

**Materials and methods:** In this study, 2 cm from the terminal isolated adult male rat's ileum Tyrode solution in an organ bath containing oxygenated (37 °C, PH=7.4) and placed under 1 gram tension contractions induced by 60mM potassium chloride and histamine concentrations (0.0001, 0.001, 0. 01, 0. 1mg/ml) and extract concentrations (0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8 mg/ml) were added to the organ bath and their effects on the ileum's contractions were recorded by using Harvard oscilograf.

**Results:** The extract cumulative concentrations reduced ileum contraction induced by KCl in a dose-dependent manner (P<0/001). Spasmolytic effect of extracts (0.2mg/ml) after of the tissue exposure to histamine (0.1 mg/ml) as an agonist of the histaminergic system did not change.

**Conclusion:** Although Parsley seed extract reduced rat's ileum contraction, it seems like histamine receptor are not involved in this activity.

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**Keywords:** Histamin, *Petroselinum crispum*, Contraction, Isolated ileum, Rat.

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Comparison between acute effects of intermittent hypoxia and aerobic exercise on nitric oxide level, blood pressure and lung function in apnea

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Abstract

Introduction: Sleep apnea is a form of respiratory disorders and a common health problem. Studies report that, regular physical activity, including aerobic exercise is non-pharmacological strategies for treatment of sleep disorders and apnea. Doing regular exercise hypoxia and also practicing, has been suggested to reduce stress resting blood. Materials and methods: 12 male volunteers with obstructive sleep apnea (mean age 24.54±10.24 old) performed an aerobic exercise consisted in 40 minutes by running on treadmill with intensity of 70% heart rate reserve. During intermittent hypoxia session, 5 minutes hypoxic air (11% oxygen) and 5 minutes normoxic air (room air) were inhaled intermittently at sitting position for an hour in separate days. Before the test, half-hour and hour after the intervention, measures of lung function (FVC, FEV1, TV, PEF, FEV1.VC). Also blood pressure measured 20 minutes after the subjects in laboratory. After that the practice time was measured every ten minutes to an hour. Blood samples before and immediately after exercise collected to measure the levels of nitric oxide. To determine. The normality of the distribution of test data Kolomogrov-Asmirnov and analysis of variance with repeated measurement was used to analysis. Results: Nitric oxide levels increase and Systolic and diastolic blood pressure levels reduced significantly after aerobic exercise and intermittent hypoxia. However, nitric oxide, Systolic, blood pressure at 40, 50 and 60 minutes and diastolic blood pressure in 60 minutes, decreased significantly only in intermittent aerobic exercise (P≤0.05). Reduction in systolic blood pressure at 50 minutes was significantly correlated with the PEF post 30 and 60 minutes (Ps0.05). Conclusion: In general, it can be concluded that an aerobic exercise protocol of the hypoxia periodic activity, nitric oxide and blood pressure systolic and diastolic in patients with obstructive sleep apnea improves. Communication systolic blood pressure in 50 minutes with indicator PEF half an hour after exercise represents improved distention lung after workout. Application seems to be 40 minutes of aerobic exercise at 70% heart rate reserve, a major factor in response to nitric oxide, blood pressure and dilates lung after exercise. This method has less limitations in comparison with regular exercise at the same time and expected to fulfill the aim, the regular practice for a wider range of people, including the sick, disabled and older applicant.

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Keywords: Nitric oxide, Hypoxia, Aerobic exercise, Acute, Lung function, Blood pressure, Apnea.

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The effect of cholesterol lowering drugs on vitamin D in people with family high blood cholesterol

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Abstract

Introduction: Family genetically high blood cholesterol is a common disease that involves many complications for patients. This study links cholesterol lowering drugs and serum levels of vitamin D have been investigated.

Materials and methods: In this study, the 25-hydroxy vitamin D in 65 women 30-50 years of age, were evaluated by ELISA. After receiving drug information and ensure that the drugs lower cholesterol do not use, vitamin D and cholesterol were measured. After 9 months, cholesterol-lowering medication Gemfibrozil and Atorvastatin prescribed by a physician, vitamin D and cholesterol were measured. Also 30 persons during 9 months of taking the drug, vitamin D supplements regularly received. Moreover, the results between the two periods were statistically tested.

Results: At first period, the level of cholesterol and vitamin D in the women, respectively, were measured high and normal. In the second phase, due to using prescription drugs, inhibit the synthesis of HMG-CoA reductase and blood cholesterol significantly decreased, but the amount of vitamin D also showed greatly reduced. Women who used vitamin D supplements, showed relatively low levels of vitamin D. Conclusion: Despite the decrease in cholesterol levels after taking the drug, vitamin D deficiency was seen. Despite taking the drug for patients genetically perpetuity, after long-term use osteoporosis can be predicted in these people. So taking supplements and foods rich of vitamin D during drug use is proposed.

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Keywords: Vitamin D, High blood cholesterol, Osteoporosis, ELISA.

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Camel milk in health: A review

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Abstract

Since last centuries, camel milk was used as an important food source for human health. Camel milk in hot and dry areas has a very important role in nutrition viewpoint. It is rich in nutrients and it is very different from other mammals' milk in terms of compounds and therapeutic effects. In addition, because it is rich in vitamin C, it can act as a powerful antioxidant. Water in camel milk compared to other mammal's milk is the highest. Many studies have shown that because camel milk is rich in bioactive material and also has very low levels of cholesterol, protein and sugar, and high levels of vitamins, minerals (zinc, iron, calcium, magnesium, etc.), lysozyme, lactoferrin, etc; it can be effective for the treatment of many diseases. Camel milk can be used in the treatment of stomach ulcers because it is rich in zinc and magnesium. Furthermore, it is used to treat skin diseases such as eczema and acne, autism, gastrointestinal disorders, wound healing, jaundice, diabetes, hepatitis B and C, cancer and also boosting the immune system. Camel milk is against high blood pressure. Because of lack of a protein called beta-lacto globulin in camel milk, its proteins do not cause food allergies. This study aims to review properties and therapeutic effects of camel milk as well as its comparison with other mammals' milk.

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Keywords: Camel milk, Medicinal properties, Nutrition, Ingredients.

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The impact of environmental factors on exopolysaccharide production by Streptomyces hygroscopicus

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Abstract

Introduction: Exopolysaccharides are natural compounds that are produced by different bacterial species, which has the properties, are frequent applications. Of its applications in the food industry as a thickening determination of flavor and color, used in medicine to reduce blood cholesterol, triglyceride, against tumors and cancers as well as in agriculture pharmaceuticals etc. Exopolysaccharide approved in the GRAS (Generally recognized as safe) list. The aim of this study was the effect of environmental factors on production exopolysaccharides by Streptomyces hygroscopicus strains PTCC1132. Materials and methods: In this study, using the Taguchi method by examining factors such as temperature, mannitol and salt concentration in the optimum conditions for exopolysaccharide production by the bacterium Streptomyces hygroscopicus strains PTCC1132. Considering table of the 3 factors and 3 levels design 9 testing. The results were analyzed using the computer program Qualitek-4. Results and conclusion: The results of the test, this thesis indicates that the bacterium Streptomyces hygroscopicus strains PTCC1132 the presence of mannitol as a sugar alcohols produce more exopolysaccharides and exopolysaccharide production by this strain of bacteria is directly related to the extent. There is a direct relationship with temperature, but the temperature 35°C proven process takes due to the increasing use of polysaccharides with different industries and their widespread use medical and pharmaceutical industries can be a good option for exopolysaccharide production.

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Keywords: Exopolysaccharide, Streptomyces hygroscopicus, Strains PTCC1132, Taguchi.

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Application of the theory of planned behavior to predict the intention of condom use among male substance abusers covered by substance abuse treatment centers in Hamadan: A descriptive-analytic study

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Abstract

Introduction: Unprotected sex and injection drug use are considered as major risk factors associated with HIV infection in Iran. This theoretical based study explained predictability of the Theory of Planned Behavior on the intention to condom use among male substance abusers covered by substance abuse treatment centers. Materials and methods: This descriptive-analytical study was carried out on 163 men substance users referred to substance abuse treatment centers in Hamadan, west of Iran, recruited with simple randomized sampling method. The data gathering tool was questionnaire, contained demographic variables and theory of planned behavior constructs. Data were analyzed by logistic regression analysis using SPSS16 software. Results: According to the results, 55.2 percent of participants reported having sex with 2 or more partners while only 38.65 percent of them had used a condom in their last sexual intercourse. Perceived behavioral control was strongest predictor of intention to condom use (P=0.006). Conclusion: Perceived behavioral control can be used as a predictor of condom use intention, as well as effectively be considered in planning and intervention to prevent unprotected sex and subsequently sexually transmitted diseases among men substance abusers.

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Keywords: Substance use, Health behaviors, Substance abuse treatment centers.

Sleep quality in high risk pregnant women (Gestational diabetes and hypertension)

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Abstract

Introduction: Sleep quality in pregnant women, is low. This problem can be associated with serious complications in mother and fetus. The aim of this study was to investigate the sleep quality in high risk pregnant women referred to high-risk clinics and sections in Taleghani and Alzahra hospitals in Tabriz. Materials and methods: This descriptive, analytical study, which was conducted on 364 eligible women in 28 to 36 weeks of pregnancy with mild preeclampsia and gestational diabetes, was under the surveillance of obstetricians and gynecologists in data was collected by using these two questionnaires: Social demographic questionnaire and Pittsburgh Sleep Quality questionnaire. Results: The mean of sleep quality score in high risk pregnant women was 10 (0/4). The relationship between sleep quality and a number of social demographic such as: Job, adequate family income, health status, demands of pregnancy, number of pregnancies, eating food before bed, air conditioning home was statistically significant (P<0/001). Conclusion: According to the results of this study, sleep quality in high risk pregnant women is low. Therefore, it is necessary to give mothers the information around this subject in order to reduce the maternal and fetal complications.

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Keywords: Sleep quality, High risk pregnant women.

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Designing tumorigenicity tests for pluripotent stem cell (PSC)-derived cell products

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Abstract

Although human Pluripotent Stem Cell (PSC)-derived cell therapy shows enormous promise, the tumor-forming potential of PSC-derived cell products should be examined thoroughly. These studies are necessary because of the possible occurrence of tumors originating from residual PSCs in the final product and the genetic instability of PSC-derived cells that may increase in the course of cell culture. For these concerns, a series of pilot studies shall be conducted not to underestimate the risk of tumorigenic events prior to clinical testing. Based on our experience with tumorigenicity testing of iPSC-derived retina pigment epithelial cells and neural stem cells, we propose that the following approaches shall be considered and documented in designing tumorigenicity tests. 1) Detailed quality control records will be maintained for test cells, including gene expression, genetic testing, passage number and growth rate. 2) The type of animal model used and the route and method of administration. 3) Gender, age and the number of animals used for statistical studies. 4) Information about the microenvironment at the transplantation site. 5) The dose of cells to be transplanted with an accompanying justification. 6) Selection of positive control cells and the definition of a positive tumor-forming event. 7) Period of monitoring with an accompanying rationale. 8) Immuno-histochemical (IHC) methods to detect “live” and “human” transplanted cells in host tissue. 9) Methods for the detection of ectopic tumors, if any. Among those requirements, the genetic analysis of the PSC-derived cell product is particularly important, as it directly influences the outcome of long-term transplantation tests. Of course, humans have innate genetic variations that may not lead to the development of tumors. In this context, “the whole genome sequence” or “an oncogenic gene panel” may not always be useful to predict future tumor formation. Rather, histological analysis of transplants as a part of tumorigenicity testing will provide a phenotypic outcome in the setting of genetic variations or abnormalities. This approach will provide insights to determine which genetic test is relevant to assure the quality of the cell product and consequently increase the reliability of tumorigenicity test results.

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Keywords: Design of tumorigenicity tests, Pluripotent Stem Cell, iPSC-derived retina pigment epithelium cells, Whole genome sequence, Genetic testing.

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Inhibiting factors on the quit decision to among consumer hookah in high school girls

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Abstract

Introduction: Smoking hookah is recognized as a growing health problem in Iran and many countries in the world and its harmful outcomes on human health have attracted attention of the medical community. Smoking hookah because of the loss of amiss among young high school girls found great popularity, and while many professionals know effects of hookah in women more than men. One of the important issues in curing addiction is awareness effective factors on the decision to quit. The aim of this study has been to explore effective factors on the decision to quit among consumer hookah in high school girls. Methods: Using qualitative method, semi-structured interviews were conducted with 8 among consumer hookah in high school girls. All interviews were reordered and transcribed. The data were analyzed using constant comparative methods through qualitative content analysis method. Results: The main themes obtained were divided into 3: “Shame”; “Pleasure” and “Superiority”. Conclusion: To successfully quit especially in young girls in our society, considering the factors in the decision to quit, psychological and family support are needed.

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Keywords: Inhibiting factors, Quit smoking, Hookah, Girls, High school.

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Study of use improved drinking water sources in countries of the six regions of the World Health Organization

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Abstract

The safety and accessibility of drinking-water are major concerns throughout the world. Health risks may arise from consumption of water contaminated with infectious agents, toxic chemicals, and radiological hazards. Improving access to safe drinking-water can result in tangible improvements to health. 147 of 194 countries target for drinking water, yet 663 million people still lacked improved sources of drinking-water in 2015. Due to the importance of accessibility of drinking-water, we study of use improved drinking water sources in countries of the six regions of the World Health Organization. In this epidemiologic study, the raw information from WHO’s website in 2016 about the percentage of accessibility of drinking-water, have been investigated and evaluated. The lowest percentage in the West Pacific region (40%), highest rate in Europe region (100%). The lowest percentage in 2000 was 30.3% related to the East Mediterranean region. Iran has also improved 2 percent compared to 2000, the percentage is 96.2. Considering the importance of universal access to drinking water in order to reduce the burden of disease, require long-term planning to improve drinking water all regions of the world.

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Keywords: Improved drinking water, World Health Organization, Region.

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An overview of effective herbs in the treatment of polycystic ovary syndrome

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Abstract

Polycystic ovary syndrome is the most common endocrine disorder in women and the most common cause of infertility due to anovulation. Women with this disease have the most common symptoms, such as menstrual disorders, symptoms of hyperandrogenism such as hirsutism, acne, hair loss Gynecology. Patients are at risk for serious complications such as increased risk of endometrial cancer postmodernism, dyslipidemia, hypertension, cardiovascular diseases and diabetes. So treatment is of particular importance because of having fewer side effects and cost effective herbs can be effective in the treatment of pcos. This review study was performed with textbooks search on the texts of antenatal education and preparation for childbirth and Iranian medicine and online search by the keywords of pcos, herbal medicine, herbs in SID, elearica, BJM sites study the articles published from 2000 onward. Medicinal plants such as rhododendron and fennel and licorice and saw palmetto and five fingers and... antioxidant activity and anti-spasmodic and antiadrenergic and can be effective pcos treatment, that its reason is rising the levels of androgen hormones. The medicinal plants have high potential in the treatment of women's diseases such as polycystic ovary syndrome. And the recognition of its advantages and wide applications can be significantly enhanced treatment efficiency. In this article, paid to the introduction of widely used medicinal plants and effective in the treatment of pcos that compared to conventional treatment methods have the effective results of treatment. Given that be spent high costs for treating common diseases as well as for chemical drugs by resorting to this method can reduce the costs and disability.

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Keywords: Polycystic ovary syndrome, Medicinal herbs, Traditional medicine.

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The effect of lifestyle on the health of pregnant women

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Abstract

Health and development of a society largely is based on women’s health, pregnancy and childbirth have a significant impact on women’s health. It seems to provide maternal and neonatal health care services should be considered a priority. Pregnancy is described a critical period. With the onset of pregnancy caused those changes in the mother’s body that caused she becomes a new person with new physical and mental features. That changes his health behavior and lifestyle. This review study was performed with textbooks search on the texts of antenatal education and preparation for childbirth and online search by the keywords of lifestyle, pregnancy, the role of wife, nutrition during pregnancy, physical activity during pregnancy at the sites of SID BJM elearica AJP and study the articles published from 2000 onward. The lifestyle is connected to the person’s daily patterns such as dietary habits and eating habits, how to spend leisure time, smoking habits, physical activity, supported by his wife, stress, lifestyle training courses and how to use health services that normally performs. Because having a certain lifestyle is effective on the consciously or unconsciously choice of a series of behaviors. So lifestyle choices in pregnancy can have lasting effects and long-term on the health of the mother and child and causes passing healthy pregnancy away from the disease during pregnancy and easy childbirth and healthy birth with appropriate weight. Among the recommended practices, the greatest impact, was connected on dietary habits, physical activity and health and education and support services by the wife. Based on the findings of this study suggest that be done that adequate information and training to health care providers and pregnant women in terms of using the right techniques to deal with stress and carry out physical activity correctly and personal health care and mental health.

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Keywords: Lifestyle, Pregnancy, Mental health, Nutrition during pregnancy.

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The effect of 8 weeks resistance exercise on serum Irisin level and its relation to body composition in prediabetic women

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Abstract

Introduction: Prediabetes is a high-risk state for diabetes with glycemic variables more than normal, lower than diabetes threshold. Prediabetes is rapidly increasing in the world, especially industrial countries. Myokines like Irisin that has discovered, newly has a role in regulating energy metabolism by inducing white adipose tissue to brown adipose tissue and can be improved glycemic condition. Therefore, we are investigating the effect of a period of resistance exercise on serum Irisin level and its relation to body composition in prediabetic women.

Materials and methods: Twenty adult, inactive, prediabetic women, 20 to 45 years old, have participated in this study. Then, volunteers randomly divided into two groups: Control and Experiment. The latter group took part in resistance exercise with 60% to 85% of 1RM, about 8 weeks and 3 sessions, every week. Each session consists of 10 minutes warm up, 40 minutes resistance exercise and 10 minutes of cooling down. Blood samples were taken, before and after 8th week exercise and the serum Irisin was analyzed 24 hours later. In addition, body composition measurement also was done before and after exercise. Statistical analysis of the data was done by IBM SPSS Statistic 22 software. The data statistically analyzed using paired sample T test. Results: The results showed a significant decrease in Irisin and body composition after 8 weeks resistance training in prediabetic women. Resistance exercise decreased weight, BMI, body fat mass, WHR significantly, but soft lean mass didn’t change significantly. There were no relation between Irisin decrease and cardiovascular risk factors. Conclusion: We conclude that 8 weeks resistance exercise does not increase serum Irisin in prediabetic women, but this kind of exercise was effective in reducing cardiovascular risk factors. Moreover, there is not a significant relationship between Irisin and cardiovascular risk factors after 8 weeks resistance exercise.

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Keywords: Irisin, Prediabetes, Body composition.

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The effect of eight weeks resistance exercise on serum Irisin level and it's relation to cardiovascular risk factors in prediabetic women

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Abstract

Introduction: Among sedentary subjects with high BMI and WHR, there are many cardiometabolic risk factors. Regular exercise has a protective effect on cardiovascular and all-cause mortality. Exercise makes white adipose tissue to brown adipose tissue. Irisin as a new Myokine seems to have a role in making white adipose tissue to brown. So we are investigating the effect of eight weeks resistance exercise on serum Irisin level and it’s relation to cardiovascular risk factors in prediabetic women. Materials and methods: Sedentary subjects with a high BMI and WHR voluntarily participated in this study. Subjects divided randomly into two, control (9) and experiment (11) group. They take part in eight weeks resistance exercise with 65% to 80% of 1RM. Blood samples were taken before and after exercise and analyzed in the laboratory. Cardiometabolic risk factors include fasting blood sugar (FBS), triglyceride (TG), high lipoprotein density (HDL), systolic blood pressure (SBP) and diastolic blood pressure. Statistical analysis of the data was done by IBM SPSS Statistic 22 software. The data statistically analyzed using paired sample T test. Results: Irisin and cardiometabolic risk factors (0/05>p) reduced significantly in respect to eight weeks resistance exercise in prediabetic women. But there were no significant relationship between Irisin and cardiometabolic risk factors. SBP did not change significantly. Conclusion: We conclude eight weeks resistance exercise has an effective result in reducing cardiometabolic risk factors but not in reducing systolic blood pressure. Irisin was reduced in respect to resistance exercise, too. There were no relation between Irisin and cardiometabolic risk factors in this study.

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Keywords: Irisin, Cardiovascular risk factor, Resistance exercise.

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Common method of fertility preservation with cancer in young men and women

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Abstract

Cancer is asymmetrically dividing cells of the body. Cancer patients receiving treatments such as chemotherapy and radiotherapy and increases the likelihood of infertility need to preserve their fertility before starting cancer treatment. Because these treatments are damaging reproductive cells. Such methods used to preserve fertility in women, can be noted as ovarian cortex freezing, embryo freezing, shifting ovary and ovarian tissue freezing. Although many of these methods are associated with disadvantages, but in some cases live embryos derived from these processes in humans. The methods can be used in men with cancer are obtaining and freezing the sperm samples, testicular tissue freezing or isolating spermatogonial stem cells and trying to replant it. The aim of this study is to examine these methods widely and presenting them to eager and needy people. Articles reviewed in this study have been limited to search online that was searched in the database SID, Science direct and Google, by the following words: Preserving fertility, freezing, cancer, fertility and cancer, side effects of chemotherapy, radiation effects. The analysis was based on their reputation and many articles due to lack of uniformity in our paper have been excluded. The method of preserving fertility in both men and women can be helpful with cancer, but only in special circumstances, such as sufficient time is available before starting cancer treatment. Also the methods applied in both sexes in children and adolescents are different from each other because in children mature egg and sperm of men and women were not available. But despite all restrictions on several studies, the success of these methods have been mentioned. The use of methods of fertility preservation for cancer in men and women with regard to the person's marital status, type of cancer and age, if done, can be successful. But should also pay attention to moral and life values using these methods.

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Keywords: Fertility preservation, Cancer, Freezing, Fertility and cancer, Chemotherapy, Radiotherapy.

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The effect of fennel essence (*Foeniculum vulgare*) and flaxseed oil on body weight change, body mass score and ovarian weight in female Wistar rats suffered polycystic ovary syndrome

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Abstract

**Introduction:** Polycystic ovary syndrome (PCOS) is recognized as the most common endocrinopathy in females, which may affect about 5-10% of women in age of procreation. The majority of patients are insulin resistant or impaired glucose tolerance. Essential oils and omega-3 sources have potential to improve body mass score in PCOS females. **Materials and methods:** 30 adult female Wistar rats allocated to 5 experimental groups with 6 rats in each group: 1- control rats fed ordinary diet (CON group), 2- PCOS rats fed ordinary diet (PCO group), 3- PCOS rats fed ordinary diet + fennel essence + flaxseed oil (PCO+Fennel+Flaxseed group), 4- PCOS rats fed ordinary diet + fennel essence (PCO+Fennel group), and 5- PCOS rats fed ordinary diet + flaxseed oil (PCO+Flaxseed group). The fennel essence (100 mg/kg BW/day) and flaxseed oil (240 mg/kg BW/day) were orally gavaged in a 50 days period. Rats were injected with a single dose of estradiol valerate (4 mg estradiol valerate + 0.2 ml sesame oil/kg BW) to induce poly cystic ovaries. **Results:** Our results showed, treatments had a significant effect on ovaries weight (P<0.05) but it had no significant effects on body weight changes among different groups. Nonetheless, PCO group had a higher body weight gain in compared to the other groups. **Conclusion:** Feeding fennel essence and/or flaxseed oil had no effect on final body weight and body mass index.

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**Keywords:** PCOS, Rat, Body Mass Index, Essential oil, Omega-3.

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**DOI:** 10.18869/MPHBS.2016.98
The prevalence of Gingival enlargement in children and socio-economic and demographic factors in Gorgan, Iran, 2016

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Abstract

Introduction: There are different types of periodontal disease with the common aspect of destroying periodontium. Most of patients are children and one of these diseases is Gingival enlargement. Demographic factors like gender and age, socio-economic conditions, inflammatory factors, systemic conditions, medications and many others are the etiology of Gingival enlargement. Due to physical and emotional complications of this problem, it is felt necessary to evaluate the prevalence of Gingival enlargement and etiologic factors affecting it.

Materials and methods: 1113 girls and boys (7 to 13-year-olds) were selected from 10 primary schools of Gorgan-Iran. After filling the consent form by parents, a questionnaire was filled. Children were examined by McGraw index to assess the presence of Gingival enlargement, location and severity. Achieved-data were analyzed through SPSS16 statistical software and chi-square test and T-test.

Results: 716 children were normal. 397 children had Gingival enlargement: 143 cases minor, 251 cases moderate, and 3 cases with severe Gingival enlargement. Mother's education in 264 cases were academic and in 132 cases were non-academic and father's education in 250 patients were academic and in 141 patients were non-academic.

Conclusion: Incidence of Gingival enlargement was more in boys, But other factors were not significantly associated with its incidence.

Keywords: Gingival enlargement, MC Graw index, Children, Socio-economic, Demographic factors.
Design and development Niosome Hydrogel for Topical treatment

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Abstract

Introduction: Nonionic surfactant vesicles (niosomes) have drawn a lot of attention in the area of modern drug delivery systems due to their salient features such as biodegradability, biocompatibility, chemical stability, low production cost, easy storage and handling and low toxicity. Hydrogel due to better absorption can be useful in the topical treatment of skin diseases. Materials and Methods: Generally, niosomal formation requires the presence of a particular amphiphile and aqueous solvent. The association of amphiphile monomers into vesicles on hydration is the result of a high interfacial tension between water and hydrocarbon portion (or any other hydrophobic group) of the amphiphile, causing them to associate. In this study dehydration/rehydration technique is used to form niosomes and compounds, including span40, cholesterol, dicetylphosphate, PBS, carbomer and deionized water. Results: Niosomes have been used in the modern pharmaceutical industry due to their remarkable advantages over conventional vesicular delivery systems. Niosomes have the potential of being a new generation of delivery systems after the liposomes. Vesicles that were synthesized in this study were optimal in size and zeta potential and typical encapsulation efficiencies were in the range of 92.5%-93.51% for these niosomes. Conclusion: The present study has partially optimized synthesis technique for niosome as a drug carrier system and characterized its ability to encapsulate drug and leakage studies. Vesicles were formed by the combination of surfactant (Span40), cholesterol and dicetyl phosphate using appropriate setup and operating parameters. This included optimization parameters such as mass per batch, angle of evaporation, dehydration nitrogen flow rate, hydrating solvents, hydrating temperature and sonication time. Based on this success and the high efficiency of encapsulation, the objective of this research was to determine an appropriate synthesis technique for a noisome drug career system, and we observed that with this technique, dosage to treat the diseases can be decreased and deformable niosomes which are prepared using nonionic surfactants could be the future potential novel drug delivery systems for the development of enhanced transdermal delivery.

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Keywords: Niosome, Hydrogel, Topical treatment, Carbomer.

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Design and production of Niosome for drug delivery

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Abstract

Introduction: The concept of targeted drug delivery is designed for attempting to concentrate the drug in the tissues of interest while reducing the relative concentration of the medication in the remaining tissues. As a result, drug is localized on the targeted site. Hence, surrounding tissues are not affected by the drug. In addition, loss of drug does not happen due to localization of drug, leading to get maximum efficacy of the medication. Different carriers have been used for targeting of drug, such as Niosomes. These nanocarriers are one of the best among these carriers. Niosomes (non-ionic surfactant vesicles), obtained by hydration, are microscopic lamellar structures formed upon combining non-ionic surfactant with cholesterol. Materials and methods: The preparation method of niosomes in this study involves evaporation to produce a lipid film followed by hydration with the hydration medium. Niosomes were prepared by lipid layer hydration method and compounds, including cholesterol, Span 60, dicetylphosphate and PBS. Lastly, a sonication process to produce unilamellar vesicles was partially optimized based on the particle distribution and the number of vesicles formed with sonication time. Results: Span 20, Span 40 and Span 60/Niosomes were made with mean particle size of 145.4nm. Typical encapsulation efficiencies were in the range of 92.5-93.51% for all three Span/Niosome systems. The largest vesicles were observed with Span 60 with highest entrapment efficiency as compared to Span 20 and Span 40. Conclusion: The ability of nonionic surfactant to form bilayer vesicles instead of micelles is dependent on the hydrophilic-lipophilic balance values (HLB) of the surfactant, the chemical structure of the components and the critical packing parameter. Above all, Niosome systems have been shown to be more chemically stable, commercially less expensive, and less cumbersome in handling, production and storage than other vesicles. In this study, we observed that with this technique, dosage to treat the diseases can be decreased and deformable niosomes, which are prepared using nonionic surfactants, could be the future potential novel drug delivery system for the development of enhanced transdermal delivery.

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Keywords: Niosome, Non-ionic surfactant, Cholesterol, Drug delivery.

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Liposome design for drug delivery

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Abstract

Introduction: Liposome are simple, the applicability of drugs is always a compromise between their therapeutic effect and side effects. Liposomal drug delivery systems not only enable the delivery of higher drug concentrations, but also a possible targeting of specific cells or organs. Like all other carrier systems, the use of liposomes in drug delivery has advantages and disadvantages. The amphiphilic character of the liposomes, with the hydrophobic bilayer and the hydrophilic inner core, enables solubilization or encapsulation of both hydrophobic and hydrophilic drugs. Materials and methods: In this study, a potential drug delivery system has been designed, synthesized and characterized. Liposomes were prepared by lipid layer hydration method and compounds, including cholesterol, chloroform, Egg-yolk lecithin (EPC) and distearoly PC (DSPC) are the PC lipids used in the present study. Lastly, a sonication process to produce unilamellar vesicles was partially optimized based on the particle distribution and the number of vesicles formed with sonication time. Results: As a result of this study, unilamellar and multilamellar vesicles were formed. The vesicles were examined using DLS (Dynamic Light Scattering) and SEM (Scanning Electron Microscope). Liposomes were made with mean particle size of 176.3-200.7 nm. Typical encapsulation efficiencies were in the range of 92.5% - 93.51% for these liposomes. Conclusion: Liposomes are one of the unique drug delivery system, which can be of potential use in controlling and targeting drug delivery. Liposome vesicle has drawn attention of researchers as potential carriers of various bioactive molecules that could be used for therapeutic applications in human and animals. Many factors contribute to their success as drug delivery vehicles. Liposomes solubilisellipophilllic drug candidates that would be otherwise difficult to administer intravenously. As well as the encapsulated drug is inaccessible to metabolizing enzyme.

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Keywords: Liposome, Phospholipid, Drug delivery.

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Glutathione S-transferase M1 genotype polymorphisms and type 2 diabetes risk in Zoroastrian female in Yazd, Iran

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Abstract

**Introduction:** The aim of this study was to assess the possible association between genetic polymorphisms of the Glutathione S-transferase-mu (GSTM1) and the risk of the development of DM in Zoroastrian females in Yazd, Iran.

**Materials and methods:** In this case-control study, GSTM1 polymorphism was genotyped in 51 randomly selected DM patients and 50 randomly selected healthy controls on June 2014 among Zoroastrian females whose ages ranged from 40 to 70. DNA was extracted from peripheral blood.

**Results:** The frequency of GSTM1 null and GSTM1 present were 46 and 54% respectively in control samples while in T2DM patients, the frequency of GSTM1 null and GSTM1 present were 51 and 49% respectively. There were higher levels of TG, fasting blood sugar (FBS), TC, LDL, Urea, and HDL in cases of GSM1 null genotype compared to the GSTM1 present genotype in controls.

**Conclusions:** GSTM1 deletion polymorphism has a greater risk of acquiring diabetes. However, we observed no significant association between the GSTM1 null genotype and DM in the current study.

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**Keywords:** Glutathione S-transferase M1, Genetic polymorphism, Type 2 diabetes, Female, Ethnic group.

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Investigation of drug synergistic and antibacterial effects of *Mentha longifolia* essential oil on *Shigella flexneri* and *Shigella sonnei*

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Abstract

**Introduction:** Microbial infections such as shigellosis are the major health challenge in Iran, especially in Khuzestan province in southwest of Iran. According to the importance of medicinal plants in treatment of many infectious diseases and as a valuable alternative of antibiotics, therefore the main purpose of this study was to evaluate the drug synergistic and anti-bacterial effects of *Mentha longifolia* essential oil on as a local plant against *Shigella flexneri* and *Shigella sonnei* as the main causes of shigellosis. **Materials and methods:** Essential oil of *M. longifolia* was extracted from its leaves. Antibacterial effects of essential oil were detected by disk diffusion method through the measurement of the inhibitory zone diameter and micro-broth dilution for determining the minimum inhibitory concentration (MIC) on clinical and standard *Shigella flexneri* and *Shigella Sonnei* strains. **Results:** According to the results of disc diffusion test in Agar, essential oil of *M. longifolia*, with a 35 mm inhibition zone, showed the greatest antibacterial activity against clinical isolate *S. flexneri*. MIC=1024 and with concentration of 0.8 mg/ml of essential oil was detected in both of standard and clinical of *S. flexneri* and *S. sonnei* strains. The essential oil of *M. longifolia* showed highest synergistic effect with gentamicin (10 μg) and ampicillin (30 μg) on clinical isolates of *S. flexneri*. **Conclusion:** The results of this study indicate that essential oil of *M. longifolia* only or in combination with antimicrobial agents may be useful in treatment of bacterial infections. Additionally, this component can enhance the effect of some antibiotics and resolved some antibiotic resistance problems.

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**Keywords:** Mentha longifolia, Essential oil, Shigella flexneri, Shigella sonnei.

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Effects of eCG (Dosage and injection time) on reproductive performance in Kurdish ewes

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Abstract

Introduction: A completely randomized design experiment was conducted on one hundred and five Kurdish ewes during the breeding season to investigate the efficiency of eCG (dosage and injection time) on reproductive performance. Materials and methods: Ewes (2-6 years old, weighing 57.5-58 kg and BCS 2.5-3.5) were randomly divided into seven different treatments. In all treatments the ewes were treated with CIDR for 14 days and after CIDRs withdrawal 450 IU eCG were injected intramuscularly to ewes of treatment 2, 3 and 4 at zero, 12 and 24 h after CIDR withdrawal, respectively, and 550 IU eCG were injected intramuscularly to ewes of treatment 5, 6 and 7 at zero, 12 and 24 h after CIDR withdrawal, respectively, the first group was used as control. All of treatments, except control, were received 10 mg FSH intramuscularly at 24 h after CIDR removal. Results: Lambing rates in all seven treatments, was, 40, 80, 80, 73.3, 86.6, 86.6 and 93.3% respectively, and was significantly higher than control group (p<0.05). However, the differences among any of the groups in terms of the gestation period and lambs birth weight rate were statistically insignificant (p>0.05). Multiple birth rate for all treatments were higher than control group significantly (p<0.05). Conclusion: In conclusion, the results showed that; treatment of ewes with eCG at the time of estrus and prior mating, improved the conception and twinning birth rates ewes.

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Keywords: eCG, Kurdish ewes, Lambing rate, Reproduction.

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Application of cumin in nutrition science and medicine

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Abstract

Spices are part of plants which are used as a taster or spice. These spices are used for adding flavor to the food, drinks, or as herbs. Asian continent is recognized as the land of spices. Cumin is studied and researched as an important and commercial among 70 herbs which are known in the world. Cumin is beady spice which belongs to Umbelliferae. Cumin and the additive amount of its products are used for tasting and flavoring of food. Cumin contains Volatile oil (3-4%). Cinnamaldehyde is the major factor for the original activity of cumin, and it is available to 45-50%. Cumin causes the additive value of its products such as cumin oil and Oleoresin. The powder of cumin cyminum Linn is the major part of many spice components and Curry powder. The extractions of water and alcohol of cumin are also reporting that they have many useful features such as having anti-allergic, anti-culturing of Platelets, decreasing blood glucose level. They have many active antioxidants. Cumin cyminum Linn also has many biological activities, and its components in food production have flavoring and nutritious benefits simultaneously. Green cumin can prevent the growth of micro-organism due to the existence of anti-biotic components. It can also help the specific improvements of lipoclastic food products. This research studies the application and usage of cumin cyminum Linn in nutrition science and medicine.

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Keywords: Cumin Cyminum Linn, Biological activity, Anti-microbic, Oil, Oleoresin, Flavors.

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Hearing disorders (Hearing loss, deafness)

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Abstract

The children who are deaf or have been born with hearing problems or whom the hearing is regularly reducing in the childhood period, are exposed to the risk of delay in speech achievement. Research shows that delay in the speech advancement can influence a person's social, affective and mental achievement. The circumstances of speech achievement quality in a child depend on his/her learning readiness level at the time of entering into school. If a child's hearing loss is recognized sooner and he/she can receive the special aids sooner, she/he will be more successful in the school. Most of deaf children are almost of a high intelligence and even may have higher than normal level. But using the potential intelligence and carrying into effect it depends on the family’s culture level and society acceptance level. The present research summarizes some explanations about deafness, who is a deaf person, how does it create, which are its prevention ways, what should everyone do if there is deafness, how should they be taught to cope with society and consider themselves as a member of this society and avoid withdrawal and isolation. If the deaf persons are not accepted by the society, they will have many problems. However, their acceptance does not solve their problems in general but reduces them. Training the deaf individuals needs some skillful and experienced trainers and counselors familiar with their problems. Fortunately, nowadays almost most of societies consider this issue important.

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Keywords: Hearing loss, Deafness, Speech achievement, Mental achievement, Affective achievement, Social achievement and acceptance.

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Cinnamon essential oil controlled lipid profile and glucose concentration in Streptozotocin-induced diabetic rats

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Abstract

Introduction: Diabetes is one of the fifth major leading causes of death in the world which needs more attention. Today, researchers are trying to find natural products, such as herbs and their derivations, for treatment of different disorders and diseases. For long time ago natural antioxidants, such as essential oils, have been interested because they decrease the risk of chronic diseases and encourage human health. Because of its special aroma, Cinnamon (Cinnamomum zeylenicum) is commonly used in the food industry. In addition, it has strong antibacterial properties, antioxidant and hypcholesterolemic activities, and regulates the lipogenesis. This study was conducted to evaluate the effects of cinnamon essential oil (CEO) on lipid profile and glucose concentration in Streptozotocin-induced diabetic rats. Materials and methods: Male Wistar rats, weighing 250 ± 50 g, were made diabetic by single i.p. injection of streptozotocin (STZ) (60 mg/kg body weight). After diabetes induction, CEO injected i.p at doses 0, 50, 100 and 150 mg/kg for 28 days. Each group consisted of 10 rats. The group receiving of 0 mg/kg served as control. Results: Our findings showed that CEO, 100 and 150 mg/kg reduced the serum concentration of glucose, triglycerides, cholesterol and LDL-C (P<0.05) compared to the other groups. Conclusion: At the high levels, CEO has a therapeutical properties for treatment of diabetes.

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Keywords: Cinnamon, Glucose, Rat, Streptozotocin, Triglycerides.

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Cinnamon essential oil and zinc sulfate complex, efficiently decreased glucose concentration and stimulated insulin secretion in Streptozotocin-induced diabetic rats

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Abstract

Introduction: Diabetes is one of the fifth major causes of death in the world that needs so much attention. Today, researchers are trying to find natural products, such as herbs and their derivations, for treatment of different disorders and diseases. Cinnamon (*Cinnamomum zeylenicum*) is commonly used in the food industry because of its special aroma. Considering sugar reducing properties of cinnamon. We hypothesized that a combination of sulfated zinc and cinnamon essential oil (CEO) are more efficient compared to the single form of CEO. Thus, this study was conducted to study the effects of cinnamon essential oil (CEO) and zinc sulfate on glucose and insulin concentration in Streptozotocin-induced diabetic rats. Materials and methods: Male Wistar rats, weighing 250 ± 50 g, were used. Diabetes induced by single i.p. injection of streptozotocin at dose of 60 mg/kg. The animals were i.p. received 1) 0mg/kg CEO or zinc sulfate, 2) 50 mg/kg zinc sulfate, 3) CEO100 mg/kg, 4) zinc sulfate 50 mg/kg +CEO 100 mg/kg. Each group contained 10 rats. The group receiving 0 mg/kg served as control group. Results: Our findings showed that treatment with CEO and zinc sulfate complex, reduced the serum concentration of glucose and increased the serum concentration of insulin compared to the control group. CEO and zinc sulfate complex is more useful than the single form of CEO, so that animals treated with complex of zinc sulfate and CEO, showed a significant (P<0.05) decrease and increase in serum concentration of glucose and insulin compared to the control group respectively, the effect which did not observe in CEO group. Conclusion: The combined form of zinc and CEO is better than CEO alone for diabetes treatment and this combination can be used traditionally for treating diabetes.

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Keywords: Cinnamon, Glucose, Rat, Streptozotocin, Zinc.

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Study of antibacterial effect of Calendula officinalis plant organs and hairy roots

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Abstract

Introduction: One of the most important medicinal plants is Calendula officinalis that its anti-inflammatory, anti-tumor, anti-virus and anti-bacterial properties are proven. Materials and methods: In this study antibacterial effect of aqueous and alcoholic extracts of calendula tissues including seed, root, stem, leave and petal and hairy roots of marigold, examined and antibacterial effects of extracts on three species of bacteria (Pseudomonas aeruginosa, Bacillus subtilis and Staphylococcus aureus) was investigated. Results: The results showed that hairy roots extracts significantly higher than Chloramphenicol, limited the growth of Bacillus subtilis. Chloramphenicol and alcoholic extract of the seed had the same inhibitory effect on this bacteria. Marigold extracts can't limit the growth of Pseudomonas aeruginosa. Conclusion: Hairy roots extract and alcoholic extract of normal roots inhibited the growth of Staphylococcus aureus bacteria.

Keywords: Antibacterial, Hairy roots, Calendula officinalis plant.

How to cite this article: Sohrabinezhad, Z., Marashi, H., Moshtaghi, N., 2016. Study of antibacterial effect of Calendula officinalis plant organs and hairy roots. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Prevalence of Merkel Cell Polyomavirus in Iranian patients with non-Melanoma skin cancer

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Abstract

Introduction: Skin cancer is the most common type of cancer among Caucasian. Two main forms of non-melanoma skin cancer are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). The presence of Merkel cell polyomavirus (MCPyV) was reported in Merkel cell carcinoma (MCC), but data from Iranian patients are lacking. Multiple factors contribute to the etiology of the cancer and several research groups were reported the role of large oncogenic tumor (LT) antigen of MCPyV in tumor genesis. So, the aim of this study was the evaluation of the presence and of MCPyV in patients’ non melanoma skin tumors who referred to Razi Hospital in Tehran within 2015-2016. Materials and methods: In this cross-sectional study, Totally 40 samples were collected containing 30 BCC, 10 SCC and the DNA genome was extracted. To find positive samples, quantitative Real-Time PCR was done and the full-length of Large T antigen region was amplified and sequenced directly for detection of probable mutations. Results: Our analysis showed that the MCPyV genome was found in 3 out 30 (10%) of BCC samples. However, our statistics data indicated no correlation between sex (P-Value=0.33), age (P-Value=0.5), or stage of cancer (P-Value=0.25) and the presence of MCPyV genome in our populations of study. Conclusion: As our knowledge this is the first study presenting data on the prevalence of MCPyV in non-melanoma skin cancer from Iranian patients. Although several non-synonymous mutations were present at the C terminus of LT in our cases, no mutations causing stop codons were observed. In spite of the fact that the frame shift mutation at the N-terminus of MCPyV LT Ag region is associated with tumorigenesis of the virus.

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Keywords: Merkel cell polyomavirus, Basal cell carcinoma, Squamous cell carcinoma, PCR, Iran.

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The protein Tyrosine Phosphatase N22 variation and risk of Endometriosis

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Abstract

Introduction: Endometriosis is a complex disease that is caused by an interaction between multiple genes and the environment. Endometriosis has been suggested to be an autoimmune disease, and recently an allelic variation of the PTPN22 (C1858T) gene was revealed to be associated with the development of autoimmunity. We investigated variations of PTPN22 with susceptibility to endometriosis in Iranian population. Materials and methods: In this case-control study, 151 patients with endometriosis (stage I-IV) and 153 women with no evidence of the disease were included. Genotyping of the PTPN22 1858 C/T Insertion/Deletion variations were performed using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). Results: The TC genotype of PTPN22 polymorphism was observed in 1.3% (2/153) of the control group and 2.6% (4/151) of the endometriosis patients; the difference wasn’t statistically significant (P = 0.446). Conclusion: The results of the present study show that, endometriosis in Iranian population is not associated with the PTPN22/LYP 1858C>T gene polymorphism. PTPN22 may not be a primary factor in the etiology of endometriosis, but it should be verified in further studies.

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Keywords: Endometriosis, Polymorphism, Autoimmunity, PTPN22.
Review assessment: The incidence of Alzheimer’s disease and the polymorphisms of interleukins

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Abstract

Alzheimer is a type of multifactorial disease which shows heterogeneity over various populations. Findings in some populations suggest that in addition to two protein deposits consisting beta-amyloid peptide and neurofibrillary tangles, which are the main mechanism in pathogenesis of Alzheimer’s disease, inflammatory mechanisms have a fundamental role in pathogenesis of disease. Various inflammatory mediators such as complement activators and inhibitors, chemokine and cytokines released by microglia and astrocytes, are caused to neuronal dysfunction and death gradually. Alzheimer is a progressive disease of the nervous system, which is evident by means of recent memory loss and personality changes. This review study is aimed to survey all studies conducted to investigate the correlation of interleukins gens polymorphism and Alzheimer’s disease over different populations. In this study, all interleukins are surveyed, so effective interleukins have been identified. The first reported gene for Alzheimer’s disease was APP, the gene for the amyloid precursor protein. Furthermore, recent studies showed, the lack of any association between the polymorphism of IL10-3538, -1354, -1087, -824, -595, IL6-384, IL1Ra, IL6 VNTR, IL4 +33 and IL23 and Alzheimer’s disease so that bring them into doubt the efficacy of these candidate genes as marker of susceptibility of Alzheimer’s disease over populations. However, it is suggested the polymorphisms of IL-1 (889), IL-1RN, IL-1Ra, IL1β (-511,-31,+3953), IL-4 (-590,-1098), IL-6(-174,572), IL-10 (-1082,-819,-592), IL12, IL16, IL17, IL18 (-607, -137), IL33, TNF-α (-850), TNF-α, TGF-β (+10, +25) are the risk marker for Alzheimer’s disease.

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Keywords: Alzheimer, Polymorphism, Interleukin, Multifactorial disease.

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**Antinociceptive and anti-inflammatory activity of *Pycnocycla bashagardiana mozaff* essential oil in rats**

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**Abstract**

**Introduction:** *Pycnocycla bashagardiana mozaff* is an endemic species found only in Iran. It is commonly distributed in Jask County, Hormozgan Province. Due to the presence of myristicin as the major component, antinociceptive and anti-inflammatory properties of P. bashagardiana essential oil are proposed. **Materials and methods:** The carrageenan-induced Paw Edema and Hot-plate methods were used for inflammation and pain evaluation in rat and mice respectively. *Pycnocycla bashagardiana mozaff* essential oil (PBMEO50, 100, 200 and 400 mg/kg BW, IP), saline and morphine (5 mg/kg, IP) were administered and then Hot plate test was performed on all animals individually in 15th, 30th, 45th and 60th min after treatment. The anti-inflammatory property of PBMEO (200 and 400 mg/kg, IP) assessed by carrageenan-induced paw edema method in 30min, 1, 2, 3, 4 hours after carrageenan injection in rats. Comparisons between the groups were carried out using the analysis of variance (ANOVA), and post hoc Tukey’s test. **Results:** In Hot-plate test, the studied dose of PBMEO was not effective. However, in carrageenan test, all doses of PBMEO significantly reduced the paw edema in compared to control animals (p<0.05). Anti-inflammatory activity of PBMEO (200 and 400mg/kg, P<0.05) was found to be more than Mefenamic Acid (30mg/kg). The major components of the oil were characterized as myristicin, which might be responsible for anti-inflammatory activity. **Conclusion:** The results suggest that PBMEO possesses biologically active constituents that have significant peripheral anti-inflammatory effects.

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**Keywords:** Pycnocycla bashagardiana mozaff essential oil, Antinociceptive, Anti-inflammatory, Carageenan test, Rat, Mice.

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Study of hematologic malignancy vaccines

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Abstract

Hematologic malignancy (HM) as a malignancy developed by the immune system is detected in microenvironment and resulted in the proliferation and survival of the malignant cells. These cells are detected by T-cells that are the potential targets of effector cells. Vaccination stimulates the expanding active tumor helper and cytotoxic lymphocytes and is associated with recurrence prevention in a subset of patients with MM and AML. The immune responses to vaccines are often not durable and don’t overcome sufficiently many suppressing immune system factors in the tumor microenvironment. In the study, the cellular and non-cellular vaccines for the treatment of HM with changing the clinical effect have been assessed. The current study was conducted by searching PubMed database with key words include hematologic malignancy and vaccine disorders. Ideal targeted tumor Ags should be expressed continuously in every cells of the tumor population, so that; 1- Disease remains, despite of clonal evolution, 2- It can be necessary for living and function of tumor cell in worst conditions, 3- It can be absent in normal tissue and 4- It can be included several resistant non-immunogenic epitopes. AML cells are well-matched with high expression of MUC-1, not with low levels of it. In addition, WT-1 as a target for cytotoxic T lymphocytes, is used with high specificity for CML progenitor cells. Researchers have discovered that the combination of T cell and vaccine procedures with ligand-covered CD3/CD28, leads to extent of tumor-specified lymphocytes. In MM, the expression of testicular cancer antigen, NY-ESO, is increased against primary disease. A series of clinical trials showed that vaccination is related to stimulating the anti-idio type cellular and humoral immune responses. With better understanding of the immunosuppressive environment and immune biology of HM, rational combined therapies with vaccine therapy can be designed for stimulating the innate immune responses which have high potential to change the pattern of treatment category of HM. More effective strategies have been invented to eliminate the tumor heterogeneity through polyclonal responses which performed by targeting several antigens and increasing antigen presentation by professional APC and immune regulation treatments.

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Keywords: Hematologic malignancy, Vaccination, Immune system.

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Study of MMP-9 gene expression in the presence of Sialic acid in human Glial cell line

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Abstract

Introduction: Sialic acid (N-acetylneuraminic acid, NANA) is found at all cell surfaces of vertebrates which can cause many different reactions, such as starting or inhibiting the immune response, the activating of the complement system and cell signaling. Sialic acid involvement in the signaling pathways leading to MMP-9 expression in Glial cells is unclear. Therefore, this study investigated the relationship between MMP-9 and NANA and the effects of these ligand on the signaling processes of the inflammatory demyelination. **Materials and methods:** Human Glial cell line was prepared from “Pasteur Institute of Iran” and cultured in DMEM, supplemented with 10% FBS. The IC50 value of NANA was obtained by MTT assay. Glial cell line was treated with NANA (300,500 and 1000 µg/ml) for 24h to investigate the effects of these ligand on the expression of MMP-9. Then total cellular RNA was isolated from approximately 6-5×10⁶ Glial cells. 1000 ng of total RNA from each sample was used into cDNA. Real-time PCR determined the expression level of the MMP-9 transcripts and REST and SPSS software were used for analyze. **Results:** The results of MTT assay were analyzed by Excel software and IC50 was obtained equivalent to 1273.3 µM. Therefore, the concentration of Sialic acid was selected for treatments that were less than IC50 (300,500 and 1000 µM). By analyzing Real-time data, it was found that MMP-9 mRNA expression was up-regulated with treatment and indicated a possible involvement NANA on signaling pathway this gene expression. **Conclusion:** By determining the possible relationship between NANA and MMP-9 gene expression, which is one of a key inflammation factors in some neurodegenerative diseases, should be investigated MMPs gene control agents (including TIMPs and miRNAs); as well as other inflammatory macromolecules such as cytokines, chemokines, prostaglandins, NO and ROS.

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**Keywords:** Sialic acid (N-acetylneuraminic acid), NANA, MMP-9, Glial cell line, Multiple Sclerosis (MS).

**How to cite this article:** Shabani Sadr, N.K., Shafiei, M., Galedari, H., Khirolah, A., 2016. Study of MMP-9 gene expression in the presence of Sialic acid in human Glial cell line. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
A glance to Mesenchymal stem cells, and Mesenchymal stem cells, which can derive from adipose tissue

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Abstract

Stem cells are non-specialized and undifferentiated biological cells in living bodies which sometimes named as mother cells, have high potential of division, and can be differentiated under special physiological circumstances or in the presence of special factors to yield a variety of matured cells or specialized tissues. These cells can divide into two groups of adult stem cells and embryonic stem cells. Mesenchymal stem cells are adult stem cells and will participate in repairing tissue, such as bone, cartilage, muscle, tendons and adipose tissues. MSCs possesses the property of heterogenetic and fibroblastic, and are self-renewal and can be differentiated. Mesenchymal stem cells has three main features in invitro: Plastic adherence, the ability to differentiate into adipose, osteoblaste and cartilage, the expression of surface markers CD73, D90, CD105 and lack of expression of the markers CD14, CD34, CD45. Over the years, many initial and most flourished studies were performed on MSc, which were separated from bone marrow; in recent years Mesenchymal stem cells are obtained of various tissues such as umbilical cord blood, Wharton's jelly, amniotic fluid and adipose tissue, but the use of adipose tissues have become common due to few special characteristics such as easy access, great texture and high Proliferation. Adipose tissue derived Mesenchymal stem cells have the power to differentiate into a variety of tissues. These cells can also be used in tissue engineering and cell therapy. Thus, this study aims to express few specific characteristics of MSCs isolated from adipose tissues.

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Keywords: Stem cell, Mesenchymal stem cells, Adipose tissue.

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X-Linked Adrenal hypoplasia congenita: Clinical spectrum and molecular analysis of DAX1

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Abstract

DAX1 (dosage sensitive sex reversal-DSS) an important protein encoded by the gene NR0B1 (orphan nuclear receptor) located in a specific region on the X chromosome. This protein is a well studied molecular candidate involved in Adrenal gland development and also responsible for steroidogenesis in adults. It is expressed throughout the hypothalamic–pituitary–adrenal–gonadal (HPAG) axis, suggesting its pivotal role in early human sexual development. It potentially interacts with many important cellular receptors like androgen receptor (AR), estrogen receptor (ER) and progesterone receptor (PR). But, each of them are regulated by different mechanisms. However, the molecular mechanism of DAX1 in multiple stages of development is inadequately understood. Recent research reports on experimental animals, highlight that the Dax1 can be alternatively spliced suggesting that the functional role of Dax1 is more diverse and complex. Familial mutations in DAX1 are often associated with the pathological conditions like Adrenal hypoplasia congenita (AHC), hypogonadotropic hypogonadism (HH). Unlike the mutations, the duplication of this gene resulting in dosage sensitive sex reversal (DSS). Adrenal failure is the most significant phenotype of AHC resulting in glucocorticoid and mineralocorticoid deficiency subsequently influences the developmental transition of adult from fetus. In this review, we summarize the molecular background of DAX1, biological function, impact of its mutation in AHC formation and clinical significance of the protein expression in HH.

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Keywords: DAX1, NR0B1, Nuclear receptor, Adrenal hypoplasia congenita (AHC), Hypogonadotropic hypogonadism (HH).

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Computational studies on a series of 1,4-Dihydropyridines as MDR inhibitors

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Abstract

Introduction: Multidrug resistance (MDR) of cancer cells has become a great barrier to the success of chemotherapy. In this study a series of symmetrical and unsymmetrical 1,4-Dihydropyridines (DHPs) were investigated as multidrug resistance inhibitors. A QSAR study using multiple linear regression (MLR) was carried out to find the important factors on the MDR reversing ability of data compounds in cancer. Materials and methods: Structures (46 DHPs) were optimized by the sybyl software. Descriptor generation was done by DRAGON. SPSS and MATLAB programs have been used for performing MLR analyses and theoretical model validation. Kennard-stone strategy was employed for splitting data set into train and test sets. Results: Four descriptors (CIC4, MATS7e, RDF060m, RDF080m) significantly correlated with -log(Cc50) values according to stepwise regression. The MLR model for MDR inhibitory activity indicated a correlation between experimental and predicted activity for training set was suitable (R²=0.73) and external validation metric for the test set was favorable (R²pred=0.7) and cross validation was good (q²loo= 0.64). Conclusion: The predictive ability of the model was found to be satisfactory and could be used for designing a similar group of 1,4-Dihydropyridines as potent MDR inhibitors.

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Keywords: Quantitative structure activity relationship, Multidrug resistance, P-glycoprotein, Dihydropyridine, Multiple linear regression.

How to cite this article: Mollazadeh, S., Shamsara, J., Iman, M., Hadizadeh, F., 2016. Computational studies on a series of 1,4-Dihydropyridines as MDR inhibitors. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
The effect of Hydro-alcoholic extract of leaves of Vitex on the gestation indices of male rats

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Abstract

Introduction: Phytoestrogens are some plant compounds with estrogenic biological effects which are found in many nutritional sources as soybean, flaxseed and sesame. Vitexagnus-castus, also called Vitex, owns phytoestrogenic properties. Studies have shown that phytoestrogens have different impacts on the gestation process and reproduction indices. The present study is aimed at investigating the effects of Vitex extract on the gestation indices in the male rat as well as studying its histological properties in the rat's testicles.

Materials and methods: The hydro-alcoholic extract of Vitex (in three doses of 165, 265 and 365 mg/kg), vehicle (normal saline) and the hydro-alcoholic powder of soybean (120 mg/kg) were respectively given to understudy, vehicle and positive control groups for 49 days. After weighing the rats in the 1st and 49th days, the blood samples of all groups were taken and tested for estradiol levels, testosterones, FSH and LH. Moreover, such reproductive indices as sperm count, sperm motion, and prostate and testicle weight were studied and samples were collected for histological studies.

Results: Prescription of the hydro-alcoholic extract of Vitex (in three doses of 165, 265 and 365 mg/kg) did not significantly change the rats' weight (P-value= 0.06). Hormonal studies significantly reduced the progesterone, LH and FSH compared to vehicle group (P-value<0.05). In addition, the amount of estradiol was significantly more than the vehicle group and the most effect was observed in 365 mg/kg (P-value=0.02). Histological studies showed the reduction of existing spermatozoa in the seminiferous ducts. Conclusion: The Vitex extract has some inhibitive effects on the gestation indices in male rat and due to its destructive effects on the testicle tissues, more studies are required.

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Keywords: Phytoestrogen, Vitex, Fertility index, Spermatozoa.

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Phenotypes and genotypes of Aminoglycosides resistance in *Klebsiella pneumonia* isolated from Borujerd hospitals

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Abstract

Introduction: Aminoglycosides with Beta-lactams are generally used to treat serious bacterial infections. These antibiotics interfere with protein synthesis in bacteria via binding to the A site of 30S ribosomal subunits of 16SrRNA of prokaryotic. Inactivation by aminoglycoside-modifying enzymes (AMEs) has known as the main mechanism of aminoglycoside resistance in bacteria. In the present study, we investigated prevalence resistance to gentamicin and amikacin as aminoglycoside antibiotics and *aac(6')-Ib* and *aac(3)-II* genes encoding AMEs in *Klebsiella pneumoniae* strains isolated from Borujerd hospitals, Iran. Materials and methods: A total of 100 of *K. pneumonia* were collected from Boroujerd hospitals from April to September 2015. *K. pneumonia* isolates were identified by conventional microbiologic methods. Resistance to gentamicin, amikacin, gentamicin MICs were detected by disk diffusion and micro broth dilution methods, respectively. Duplex PCR assay were used to investigate the presence of *aac(6')-Ib* and *aac(3)-II* genes. Results: Among 100 isolates of *Klebsiella pneumonia*, 34% and 21% of isolates showed resistance to gentamicin and amikacin, respectively. Simultaneously resistance to gentamicin and Amikacin observed in 18% of cases. Most of isolates (95%) showed resistant to ampicillin. Multi Drug Resistant (MDR) patterns were detected in 71% of cases. Gentamicin MICs ranges were from 256-1024 mg/L. 70% (24) of aminoglycoside resistant isolates, harbored *aac(6')-Ib* and *aac(3)-II* genes. Conclusion: In conclusion, our data showed high frequency distribution of *aac(3)-Ii*lin aminoglycosides resistant *K. pneumonia*. Simultaneous resistant to aminoglycosides and beta-lactams is the cause of concern in hospitals.

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Keywords: Klebsiella pneumonia, Aminoglycoside, *aac(6')-Ib*, *aac(3)-II*.

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Is the food shortage in poor countries the main cause of nutritional diseases?

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Abstract

Political, geographical and socio-economic differences between countries cause the differences in prevalence of nutrition-related diseases that developing countries are faced more with these problems. In these communities, a high prevalence of poor diet and infectious disease makes a vicious circle, persistent poverty, eventually lack of economic development. Authors investigated whether the food shortage is the main cause of nutritional disease in poor countries. In this secondary data analysis, information on food production, economic and health status of 192 countries (the member countries of the United Nations) provided by World Health Organization (WHO), Food and Agriculture Organization (FAO) and World Bank have been used. Data were analyzed by ANOVA and regression methods. According to data that were collected, food production index (includes all nutritious food products) in 2013 (P<0.001) and livestock production index in 2012 (P=0.004) are more in developing countries relative to developed countries, while prevalence of undernourishment in 2013 (P<0.001) is significantly higher than developed countries. The regression analysis showed that prevalence of undernourishment in 2013 had a positive correlation with GINI, rural population percent, government expenditure on health and had a negative correlation with HDI, without any significant correlation with food and livestock production. Despite high food production in developing countries, undernourishment is higher than in developed countries. The cause may be related to low sanitation, unequal distribution of income and social inequality. It seems that a sustainable approach to overcome diseases like anemia and malnutrition is to construct socio-economic backgrounds in developing countries.

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Keywords: Food production, Developing countries, Undernourishment.

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The relationship between TGF-β and P12CDK2-AP1 gene in esophageal squamous cell carcinoma

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Abstract

P12CDK2-AP1 suppresses the growth that regulates cyclin-dependent kinase2 activity and is expressed in the esophageal squamous cell carcinoma. By this function, it plays the role of tumor suppressor in ESCC and its absence has some consequences. Smad2 and Smad4 transcription factors are mediators of TGF-β1 signaling. TGF-β1 is a potent growth inducer for many types of cells including epithelial and hematopoietic cells. The growth-inhibitory effect of TGF-β1 is exerted through expression of inhibitory proteins of cell cycle like P21WAF1, P12CDK2-AP1, P27KIP1, and TGF-β1 growth inhibitory mechanism for epithelial cells is partially dependent on P21WAF1 expression induction. P12, is automatically involved in TGF-β1-dependent growth inhibition through regulating the activity of CDK2 and pRb phosphorylation. The aim of this study was to evaluate the immunohistochemistry expression of P12CDK2-AP1 and its importance in esophageal squamous cells carcinoma. During this research and search in scientific-medical databases, Some of related articles were studied and evaluated. The rate of lymph node metastasis in patients with p12CDK2-AP1 negative-T1 ESCC was significantly higher than that in patients with p12CDK2-AP1 positive one. These findings point out the relationship between lack of P12CDK2-AP1 expression and lymphoid spread of cancer cells. Expression of P53 and VEGF C in patients with ESCC is related to lymph node metastasis and immunohistochemical analysis of these molecules can be useful. It has been demonstrated in our study that Smad2 and p-Smad2 are present in normal epithelial cell nucleus. Statistical analysis showed that there is a significant correlation between TBR-II and p-Smad2 expression in OSCC. Our immunohistochemical studies were indicative of decrease in expression of P12CDK2-AP1 and P21WAF1 in OSCC. This study showed that TBR-II and controlling protein of cell cycle have an important role in cell progress in OSCC. Overexpression of CDK2 may promote abnormal proliferation of cells during colorectal carcinogenesis. The results obtained from this study are confirmatory of remarkable resistance of human OSCC against TGF-β1 and researches show that P12 is differently expressed in normal and tumor oral mucosa which indicates the potential role of P12CDK2-AP1 as a tumor inhibitor in oral keratinocytes.

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Keywords: TGF-β, P12CDK2-AP1, Esophageal squamous cell carcinoma.

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The protective effect of *Sargassum tenerrimum* algae on hematological parameters fatty liver in mice

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**Abstract**

**Introduction:** The aim of this study was to evaluate the protective effect of *Sargassum tenerrimum* algae against the fatty liver which is induced by high fat diets in mice. **Materials and methods:** Mice were categorized in control (standard diet), experimental 1 (high fat diet), experimental 2 (high fat diet as well as *Sargassum tenerrimum*) and positive control (high fat diet along with simvastatin) groups. Mice in terms of changes in serum lipid profile and biomarkers of liver injury were compared. Levels of serum lipid profile to assess metabolic disorders, alanine aminotransferase and aspartate aminotransferase and bilirubin to assess liver damage, liver bile were measured to assess performance. **Results:** Results showed that after eight weeks of treatment, high fat diet causes metabolic adverse effects, including hypertriglyceridemia, hypercholesterolemia liver. Mice that were fed a high fat diet, increase activity in hepatocytes and the treatment of *Sargassum* in the plasma showed a significant decrease in the level of liver enzymes compared to other groups (p<0.05). **Conclusion:** Nonalcoholic fatty liver disease as a global problem, affecting humans, usually with obesity, hyperlipidemia, and diabetes mellitus type 2 is associated since *Sargassum* contains minerals and bioactive compounds such as antioxidants are vitamins and thus, Since the results of this study showed the decrease of hematological parameters in mice, it’s possible to introduce this algae as a proper drug complement in order to treat fatty liver.

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**Keywords:** Hematological parameters, Fatty liver, *Sargassum tenerrimum* algae.

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Evaluation of criteria for nasal drops and solutions containing sea-salt water regarding risk of pollution to the Lead and Cadmium

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Abstract

Introduction: Using natural ingredients in drug manufacturing is a common sense in recent pharmaceutical technology. Besides the advantages of these ingredients, they might be hazardous if used without proper knowledge about them. An important kind of hazard caused by these ingredients is tainted with a variety of pollutions. As an example, using sea salt in nasal drops and irrigation solutions is very common these days. Although sea salt can be beneficial, it can contain pollutions like heavy metal impurities. Heavy metal impurities, on top of it, impurity due to Lead and Cadmium can cause several damages like neurological disorders, immune defect, liver damages, cardiovascular disorders, osteoporosis, gene destruction and various types of cancer. To prevent these effects, nasal drops and irrigation solutions containing Sodium chloride, especially with natural sources, should have heavy metal ratio in proper limit states. To evaluate their ratio, according to the case under study, there exist different approaches. The solo purpose of this study is evaluation of nasal drops and solutions containing salt water and sea-salt regarding risk of pollution to Lead and Cadmium and comparing with national and international legislations. Materials and methods: Method employed in this study to evaluate heavy metal ratios is atomic absorption spectroscopy AA-670 model with the use of graphite oven. In the proposed method, after preparing standard and sample solutions, heavy metal ratio is evaluated using atomic absorption spectroscopy and the results were compared with standard regulations. Results and conclusion: By comparing the results of different samples with different salt concentrations, brands and source of salt, the amount of Lead and Cadmium varies significantly and sometimes violates the specified regulations. Among the experimented samples, the average for Lead concentration in irrigation solutions 11.40 ng/ml and Cadmium 1.8 ng/ml violate the standard level and in other samples of nasal drops and sprays the average of Lead and Cadmium concentration were in range.

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Keywords: Nasal drops, Irrigation solutions, Heavy metal impurities, Lead and Cadmium.

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New insights into natural protein Nano-Cages: Teragnostic applications

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Abstract

Drug delivery technology based on the application of drug-carriers has been gradually evolved since 1950s. Thenceforth, different types of carriers including liposomes, soluble polymers, microspheres, conjugated proteins and nanoparticles have been introduced and optimized for better and safer delivery in medical cargoes. Researchers worldwide have been worked hard in order to enhance the efficacy of handing-out certain types of drugs to certain types of cells (the concept of targeted therapy) by improving the pharmacokinetics and bioavailability of the delivery systems. Many types of materials have been investigated in order to build delivery-vehicles in nano-scale (≤100 nm) including lipids, metals (gold, silver, iron, etc.), polysaccharides (for example chitosan), different types of polymeric substances and so on. Here, we are going to review the recent emerging protein nano-cages used for medication delivery and/or diagnostic applications. We will also introduce different categories of these protein nano-cages and then discuss their pros and cons in contrast to other delivery media. Nano protein-cages are classified in two main categories known as viral and non-viral particles. Ferritin and Hsp can be introduced as well-known examples of non-viral protein nano-particles whereas CCMV and SV40 can be mentioned as viral ones. Both types of nano protein-cages can be produced and designed by the means of genetic engineering and sufficient expression in a suitable host (in most cases E.coli). The expressed proteins will be purified and undergo an assembly/disassembly process, by the application of some gentle environmental changes (such as pH changes), in the presence of absence of the drug to be delivered. Obviously, much more consideration should be applied for constructing viral protein nano-particles due to their hazards and complexity. The perfect and definite structure of nano protein-carriers, low toxicity, biodegradability, biocompatibility, low immunogenisity, ease of functionalization, opportunity of large scale production, water solubility, and... are the unique characteristics of nano protein-carriers in comparison to other delivery media such as gold nano-particles, lipid nano-particles and so on. Hence, although nano protein-carriers are in their infancy and have not been tested in clinical trials yet, definitely their characteristic features will lead to a vast demand on exploration of these structures and development of their biomedical applications in near future.

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Keywords: Nano protein-cages, Drug delivery, Carriers, Nanomedicines.

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Influence of corticosterone on the late reconsolidation memory in a restricted time window

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Abstract

Introduction: Reactivation of a stabilized memory induces a late phase of memory reconsolidation process which is now called as late reconsolidation. This phase is critical for the persistence of long term memory. Recent studies in our and other laboratories suggest that glucocorticoid receptors are involved in persistence of fear memory. The aim of the present study was to determine the effect of systemic injection of corticosterone as an endogenous ligand of glucocorticoids on persistence of fear memory reconsolidation in rats. Materials and methods: In this experimental study male Wistar rats (250-270 g) were trained in an inhibitory avoidance task (1mA, 3S). Animals received systemic injection of vehicle or corticosterone (1, 3 and 10 mg/kg IP) immediately and 12h after memory reactivation. Retention tests were done 2 and 7 days after memory reactivation. Results: Results indicated that administration of corticosterone 10 mg/kg, 12h after memory reactivation significantly impaired the memory persistence. Conclusion: These findings show that systemic injection of corticosterone in a restricted time window after fear memory retrieval has an important role on late reconsolidation of fear memory.

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Keywords: Glucocorticoids, Corticosterone, Late reconsolidation, Fear memory, Passive avoidance task.

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Theoretical comparison of two new fusion vaccine of multiple sclerosis

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Abstract

Multiple sclerosis (MS) is an autoimmune demyelinating disease targeting the human central nervous system. It is believed that the activation of the T cells reacting with the CNS antigens is the first autoimmune event in MS. MOG and MBP are the myelin sheath proteins and highly pathogenic antigen epitopes involved in immune response. Today, more researchers are looking for drugs with high specificity to function on the immune system. Tolerogenic vaccines are a new class of drugs that reduce the immune response to the MS antigens by presenting the associated antigens. This study aimed to compare two fusion vaccines using the combination of MOG₁₁⁻₃₀ and MBP₁₃⁻₃₂ linked to interlukine-16 and examination their antigenic properties. At first a model for MOG and a model for MBP were made by modeler 9.10 and these free antigen separately used for 20 ns MD simulation via Gromacs 5.1.1 package. Then 3D structure of IL-16 obtained from PDB bank and ubiquitinated and simulated for 20 ns. Then we made two compounds as follows: compound 1: MOG-MBP-IL16 and compound 2: MBP-MOG-IL16. In these compounds, IL16 set in C-terminal. Finally, the compound 1 and 2 separately were simulated for 20 ns. The results revealed that both compounds 1 and 2 had stable structure and compound 1 was better because the solvent accessible surface areas of MOG and MBP epitopes were more than compound 2. Then we can conclude that compound 1 preserves antigenic property of MOG and MBP epitopes better than compound 2.

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Keywords: Multiple sclerosis, Vaccine, Fusion protein, Molecular dynamics simulation, MOG, MBP.

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The effect of Osmolytes (sucrose and glucose) on bovine intestine Alkaline Phosphatase activity

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Abstract

Introduction: One of the most important purposes of enzyme engineering is to increase the thermal and kinetic stability of enzymes. One of the best methods to increase the stability and activity of enzymes is modification of the solvent environment. Materials and methods: The purpose of the present study was to try for increasing the activity of bovine intestine alkaline phosphatase (BIALP) by modification of the solvent environment. So, we study how sucrose and glucose could effect on the conformation, and the function of BIALP. The influence of this modifier explored using fluorescence spectroscopy and kinetics studies. Results: We have determined the thermodynamic parameters, kinetic constant enthalpy change (ΔH°), entropy change (ΔS°) and Gibbs free energy change (ΔG°) to understand BIALP stability and activity. Fluorescence spectroscopy revealing the static mode of the quenching. The number of binding sites was 1. Fluorescence spectroscopy revealed that the hydrogen bonding and Vander Waals forces played a major role in stabilizing the complex. Activity of this complex was enhanced due to the higher H-bond formation and the lower surface hydrophobicity after sucrose and glucose modification. Conclusion: Sucrose and glucose acted as enhancers for BIALP activity. The result reveals the ability of sucrose and glucose to protect the native structural conformation of BIALP. These results explicitly explain that stabilizing sucrose and glucose is preferentially excluded from the surface of BIALP, since water has a higher tendency toward favorable interactions with functional groups of BIALP than with sucrose and glucose.

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Keywords: BIALP, Sucrose, Glucose, Fluorescence spectrophotometry, Entropy change, Enthalpy change.

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Pretreatment with combination of flunarizine and B vitamins ameliorates behavioral symptoms of 6-hydroxydopamine-induced Parkinsonism in rat

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Abstract

Introduction: Flunarizine (flu) is a calcium channel blocker, which has been shown to have neuroprotective effect. Our previous studies show that B vitamins supplement (B com) ameliorates behavioral symptoms of 6-hydroxydopamine (6-OHDA)-induced Parkinsonism. In this study, we evaluated the effect of pretreatment with combination of flu and B com on the behavioral symptoms of 6-OHDA-induced Parkinsonism. Materials and methods: Different groups of rats received flu (5 or 10 mg/kg) or B com or combination of them before 6-OHDA injection to three weeks after that. Severity of the Parkinsonism was evaluated by conventional behavioral tests. Also, malondialdehyde (MDA) concentration as a marker of oxidative stress was measured in the serum and brain suspension. Results: Pretreatments with flu, significantly ameliorated severity of behavioral symptoms. Pretreatment with combination of flu and B com was more effective than pretreatment with flu or B com alone. Also, pretreatment with B com or combination of B com and flu reduced MDA concentration especially in the brain. On the other hand, pretreatment with flu increased MDA concentration in the serum. Conclusion: Our data indicates that administration of B com in combination with flu augments largely the neuroprotective effect of flu and may ameliorate its movement side effects.

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The effect of electromagnetic field on weight of kidney

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Abstract

Introduction: Our environment is exposed to electromagnetic fields by development and industrialization of life. The kidneys are bean-shaped organs that serve several essential regulatory roles in vertebrates. Their main function is to regulate the balance of electrolytes in the blood, along with maintaining pH homeostasis. The aim of this investigation was to evaluate the effects of extremely low frequency electromagnetic fields (50Hz) on weight of kidney in Balb/C mice. Materials and methods: In this study 16 adult mice were divided into two groups of 8: control group, and experimental group (50Hz and 4mT). Duration of exposure was 4 hours per day for 15 continuous days. After 15 days we dissected all animals and removed their kidneys, then we evaluated body weight and weight of kidney. Data was analyzed using one way ANOVA test. Results: Exposure to electromagnetic fields (50Hz, 4mT) decreased body weight, therefore weight of kidney was decreased. These changes were significant statistically (p<0.001). Conclusion: The exposure to extremely low-frequency electromagnetic fields changed the weight of kidney in mice.

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Keywords: Kidney, Electromagnetic fields, 50Hz, Mice.

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The effect of low frequency electromagnetic field on weight of liver

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Abstract

Introduction: Due to the increasing and widespread usage of the variety of electrical and magnetic devices and possible effect of electromagnetic fields caused by them on human health many researchers have focused to investigate the harmful effects of these fields. This study aimed to investigate the effects of 50Hz uniform electromagnetic fields on weight of liver in male Balb/C mice. Materials and methods: The study was done on 16 adult male Balb/C mice. The mice were randomly divided into two; control and experimental groups including 8 animals. The experimental group was exposed to 50Hz magnetic field with an intensity of 4mT for 15 continuous days and consecutive 4 hours for each day and the results were compared with control group that was not exposed to the field. The mice were dissected, then liver was removed to measure. Data was analyzed using one way ANOVA test. Results: Weight of liver decreased in the experimental group than control group that these changes were significant statistically (p<0.001). Conclusion: The 50Hz electromagnetic fields can affect weight of liver in male Balb/C mice.

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Keywords: Low frequency electromagnetic field, Liver, Mice.

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The effect of extremely low frequency electromagnetic field on weight of spleen on mice

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Abstract

Introduction: In the recent years, the increasing use of electronic devices which generate electromagnetic fields, focused researchers' attention to investigate the electromagnetic field effects on human health. The spleen is the organ that is responsible for both the storage and purification of red blood cells. It is positioned in the left upper abdomen, and is the largest organ of the lymphatic system. The spleen serves a critical role in immune function because it purifies the blood and helps the immune system to recognize and attack foreign pathogens and allergens. Therefore, the purpose of the present study was to investigate the effect of exposure to extremely low frequency electromagnetic fields (ELF) on the weight of spleen in male Balb/C mice.

Materials and methods: In the present experimental study, 16 adult male mice (Balb/C) were divided into two groups: experimental group, which were exposed to ELF (50Hz, 4Mt) for 15 days, and the control group, which were kept in normal conditions. After 15 days, the mice were dissected, then spleen was removed to measure. Data was analyzed using one way ANOVA test. Results: In experimental group, weight of spleen decreased than control group, that, these changes were significant statistically (p<0.001). Conclusion: It can be concluded that exposure to extremely low-frequency electromagnetic fields may lead to deduction weight of spleen.

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Keywords: Electromagnetic field, Spleen, Mice, 50Hz.

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The effect of electromagnetic field on thymus's weight on mice

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Abstract

Introduction: The possible risks of electromagnetic fields for human body are a growing concern for our society. In the modern world, the increase of using electronic devices which generate electromagnetic field is remarkable in all generations specially young people. The thymus gland, despite containing glandular tissue and producing several hormones, is much more closely associated with the immune system than with the endocrine system. The thymus serves a vital role in the training and development of T-lymphocytes or T cells, an extremely important type of white blood cell. T cells defend the body from potentially deadly pathogens such as bacteria, viruses, and fungi. Therefore, we have studied the effect of extremely low frequency (ELF) on thymus of Balb/C mice. Materials and methods: In this experimental study, 16 adult male mice were divided into two groups: First group (experimental) included 8 male mice that were exposed to 4mT and 50Hz electromagnetic field for 4 hours in 15 days. Second group (control) included 8 mice that were kept in a normal condition. At the end of 15 days period, all animals were anesthetized and their thymus were removed and the weight have been measured. The data was analyzed using one way ANOVA test. Results: By comparing the thymus's weight of control group and experimental group, we observed that their weight has been changed, and this difference is significant (p<0.01). Conclusion: The results showed significant difference regarding 15 days exposure to extremely low frequency electromagnetic field on thymus's weight.

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Keywords: Electromagnetic field, Mice, Thymus.

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Tumor Immunotherapy

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Abstract

Using from different methods of Immunotherapy, is a sort of new method of cure. Immunotherapy or using immune response is considered as one of the most important and effective complementary approaches in cancer therapy after surgery, chemotherapy and radiotherapy. In recent years many clinical trials have investigated this approach. One approach for cancer immunotherapy, is based on the classification of components used in immunotherapy including cellular immunotherapy (DC, T cell and NK cell), monoclonal antibody, cytokine therapy, vaccines, and DNA-mediated immunotherapy using viruses and bacteria. Immunotherapy has a lot of advantages, but it is really expensive and complex process. This method needs accuracy and proficiency in science because of some problems such as the exact determination amount of used dosage in different patients. New findings indicate that, combination of immune therapies and chemotherapy could be more effective in cancer treatment. In this article we will focus on cancer Immunotherapy methods.

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Keywords: Immunotherapy methods, Cancer Immunotherapy.

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A novel mutation in SMPD1 gene in a patient with Niemann-Pick disease

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Abstract

Mutations in the sphingomyelinphosphodiesterase 1 gene (SMPD1) located on chromosome 11 cause the deficient activity of lysosomal acid sphingomyelinase (ASM) protein and subsequently leads to the types A and B of Niemann-Pick disease (NPD) with the autosomal recessive inheritance. Types A or B of the disease were described based on the manifestation of the neurological symptoms. Here, we present a one year old male patient suspected to the Niemann-Pick disease with the symptoms of splenomegaly, hepatomegaly who referred to our center for the definitive diagnosis of the disease. A novel deletion mutation was detected by molecular testing in the SMPD1 gene. All the coding regions of SMPD1 gene were evaluated by direct sequencing; segregation analysis was performed for his consanguineous parents. A regulatory variant at (c.-230C>A), one missense variant (c.107T>C), and one deletion mutation (c.946-961del16) were identified in the patient. The patient was homozygous for the 16bp deletion mutation at the position c.946-961del16 which leads to frame shift stop codon (p.P316MfsX64). Segregation analysis of the variation among other related members of the family was positive for the pathogenicity of this variant. Mutation in SMPD1 shows phenotypic correlation and predicts the type of disease. In silico analysis with mutation taster tool predicted that this alternation might change the protein features and splice sites in subsequent intron, also this mutation could be responsible for pathogenic effects in this patient. Some investigations argued that, this type of Niemann-pick disease is difficult disorder to be clinically diagnosed; hence this study could demonstrate the fundamental role of genetic testing in definitive diagnosis. Sequencing is recommended for at risk family members to benefit from reoccurrence though treatment are in clinical trial and physicians could help affected and their family members for disease management.

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Keywords: SMPD1, Niemann-Pick disease, Sphingomyelinase protein.

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MECP2 gene mutation among Iranian patients with Rett syndrome and its recurrence risk

Sahar Mikaeeli¹, Nejat Mahdieh¹, Mahmoud Ashrafi¹, Mahmoud Mohammadi², Reza Shervin Badv², Majid Maleki¹, Bahareh Rabbani¹,*

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Abstract

Rett syndrome (RS) is a rare, progressive and severe neurodevelopmental disorder caused by mutations in MECP2 gene. RS usually manifest in the first couple years of life and leads to behavioral phenotypes, intellectual disabilities and brain dysfunction in females. Here, we analyzed 7 different families with at least one suspected Rett syndrome female child, diagnosed by their medical history. All of them showed a spectrum of typical phenotypes relating to Rett syndrome. We performed molecular analysis on MECP2 gene among 7 female patients. MECP2 gene amplified by polymerase chain reaction (PCR) and mutation analysis was carried out by direct sequencing. The results showed three point mutations among patients while there was not any other mutation on MECP2 among other patients. Two of them showed c.880C>T (p.R294X) mutation and the other had c.763C>T (p.R255X) mutation. Both mutations result in truncated protein and disrupt the transcription repression domain (TRD). TRD interacts with the corepressor mSin3A, which recruits histone deacetylases to form complexes for chromatin modification by MeCP2-mediated transcriptional repression. Segregation analysis showed that these mutations have occurred in the patients as de novo. This investigation revealed the importance of genetic testing for diagnosis and confirmation of the diseases that have in common phenotypes. Genetic testing could clarify and refine clinical diagnoses. Molecular analysis would help clinicians for clinical management; genotype-phenotype correlation is valuable to provide a framework for such conditions.

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Keywords: Rett syndrome, MECP2 gene, Neurodevelopmental disorder.

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Specificity and sensitivity of observational diagnosis in inflammatory gingival enlargement

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Abstract

Introduction: One of the commonest periodontal diseases in children is gingival enlargement usually assessed by two indices: GI index (with a non-piercing probe) and McGraw index (based on observation). In this study, we wanted to understand how many of positive cases in GI index were positive in McGraw index too and how many were pseudo-negative. Materials and methods: 1113 7-13 year old girls and boys with appropriate criteria from 10 primary schools in Gorgan-Iran were selected randomly. In order to evaluate the presence or absence of gingival enlargement, location and severity, at first children were examined with McGraw index and then with GI index. Results: Results were analyzed by SPSS16 through chi-square test and T-test. From 1002 cases out of 1113 that were normal in GI index, 703 were normal in McGraw index too, but 299 were pseudo-positive. From 111 patients diagnosed by GI index, 98 were positive in McGraw index too, but 13 were pseudo-negative. Results show that in all cases sensitivity of McGraw index was more than its specificity, which means this index is more capable in diagnosing patients than the normal ones. Conclusion: Therefore it is suggested to use this index at first and after distinguishing patients exact tests be done.

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Keywords: GI index, McGraw index, Sensitivity, Specificity.

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Purification of a multimeric enzyme carboxypeptidase G2 by intein-mediated protein splicing

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Abstract

Introduction: Methotrexate is one of the most widely used chemotherapy agent that may cause kidney failure as a side effect. Carboxypeptidase (Glucarpidase) is a bacterial enzyme that could convert methotrexate to its inactive metabolites and provides an alternative non-renal pathway for methotrexate elimination in patients with renal dysfunction during high-dose methotrexate treatment. Glucarpidase is marketed under the brand name of Voraxaze ($26,775 per 1000-unit vial). Materials and methods: In this research, we aimed to introduce an intein mediated purification with an affinity chitin-binding tag to simplify the purification of this valuable enzyme. Therefore, pET28a containing the carboxypeptidase G2 gene was extracted from bacteria and used as a template in PCR reaction using primers containing NdeI and SapI restriction sites. The PCR product was then digested and cloned into NdeI and SapI restriction sites of an expression vector pTXB1 that encodes a thiol-cleavable C-terminal intein followed by a chitin-binding domain. The constructed recombinant plasmid was transformed into E. coli strain BL21 and expressed under different expression conditions. 0.1 mM IPTG, 25 °C and a 6 hr incubation provided the highest level of expression. Results: The results indicated that the purity of carboxypeptidase G2 and complete excision of the intein and CBD were confirmed by SDS-PAGE, while its proper folding was proved by circular dichroism and fluorescent emission studies. Conclusion: Therefore developing new methods to efficiently purify pharmaceutical proteins like carboxypeptidase G2 has attracted researchers’ attention. Self-cleaving intein mediated single column purification is one of these novel approaches. Self-cleaving inteins are modified forms of natural inteins that can excise and join only at one junction site.

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Keywords: Methotrexate, Carboxypeptidase G2, Intein, Purification.

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Isolation of pigment producing Bacteria and characterization of extracted pigment

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Abstract

Introduction: Many artificial synthetic colorants, which have widely been used in food industries, cosmetic and pharmaceutical manufacturing processes, comprise various hazardous effects. Therefore the utilization of pigments from natural sources has been increased in recent years to counter the harmful effects of synthetic pigments and their industrial byproducts on humans and the environment. Among natural pigments, pigments from microbial sources are potentially good alternative ones. Materials and methods: In the present study the pigment producing bacteria was isolated from a lake in Qom by water sampling method. Using the universal PCR method, the 16S rDNA gene was amplified and then sequenced to study bacterial phylogeny and taxonomy. To improve the pigment production different growth conditions were examined. Subsequently, the pigment was extracted by different solvents (methanol, ethanol, isopropanol, hexane, chloroform and acetone) with different concentrations. The appropriate solvent for the extraction was chosen and then the extracted pigment subjected to TLC and HPLC for purification. The extract was further characterized by NMR. Results: Based on the morphological, biochemical characterization and 16S rDNA gene sequencing analysis, the orange pigment producing bacteria was identified as a member of Kocuria genus. The optimum condition for its pigment production was obtained in LB (using sea water) at 26 °C and pH 7-8 under 160 rpm shaking speed for 6 days. Among different examined solvents, methanol and isopropanol were selected to extract the pigment for purification by TLC and HPLC. The purified extract was analyzed by NMR and classified as a carotenoids derivative. Conclusion: Pigment producing microorganisms hold a promising potential to meet present day challenges. The results of our study showed that the isolated bacteria produced a considerable amount of carotenoid. Among various pigments, carotenoids have attracted great attention due to the beneficial role on human health and their markets have been forecast to reach $1.2 billion by 2018.

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Keywords: Pigments, Carotenoids, Kocuria, Thin layer chromatography.

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Effects of forced exercise on mechanical allodynia in a rat model of chronic constriction injury

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Abstract

Introduction: Neuropathic pain is caused by damage or disease of the nervous system that affects the structure and functioning of the somatosensory system. This study was designed to investigate the effects of exercise on neuropathic pain behavior and serum level of Ferric reducing antioxidant power (FRAP) and malondialdehyde (MDA) induced by chronic constriction injury (CCI) in rats. Materials and methods: Adult male Wistar rats (200 to 250 g) were randomly assigned into 5 groups: Intact, Sham, CCI, Pre CCI exercise and post CCI exercise. CCI was induced by applying 4 loose ligatures around the sciatica nerve. Animals run on treadmill for 3 weeks. Mechanical allodynia (von Frey filament testing) and serum level of FRAP and MDA measured in 21th days after CCI. Data were analyzed by one-way ANOVA followed by Tukey’s multiple comparison post hoc tests. Values less than 0.05 were considered significant. All data are expressed as mean ± SEM. Results: The CCI group showed a significant increase in mechanical allodynia compared with sham and Intact groups (P<0.05). Mechanical allodynia significantly (P<0.01) decreased in post CCI exercise group compared to cci. FRAP significantly (P<0.01) decreased in CCI group respect to sham group, however, it increased (P<0.05) in post CCI exercise group compared to CCI group. Serum MDA level was not different between groups. Conclusion: These findings indicate that moderate forced exercise reduces the neuropathic pain in a rat model of CCI probably via change in Ferric reducing antioxidant power.

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Keywords: Pain, CCI, Rat, Exercise, FRAP.

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Effects of treadmill exercise on thermal hyperalgesia in CCI male rats

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Abstract

Introduction: Injury or disease of central or peripheral nervous system leads to neuropathic pain. Threshold of pain conducting neurons is reduced following neuronal lesion which causes neuropathic pain. Pain has two characteristic allodynia (painful response to non-noxious stimulus) and hyperalgesia (increased response to painful stimulus). There are several reports about reducing effect of exercise on neuropathic hyperalgesia. The aim of the present study was evaluation of pre lesion exercise on thermal hyperalgesia. Materials and methods: 58 male rats, weighing 200±20 (gr) randomly divided into 5 groups (Intact, Sham, chronic constriction injury=CCI, pre cci exercise, and post cci exercise). After anesthesia, CCI was done on the sciatica nerve. Rats run on treadmill with medium intensity for 3 weeks. Plantar test was used to detect hyperalgesia. TNF-a level in the cerebrospinal fluid was detected through western blot analysis test. Data were analyzed by one-way ANOVA followed by Tukey’s multiple comparison post hoc tests using the GraphPad Prism 5 Demo. P values less than 0.05 were considered significant. All data are expressed as mean ± SEM. Results: Threshold of thermal pain in CCI group significantly decreased compared to sham group, meanwhile Post cci exercise significantly increased it respect to CCI group. TNF-a level significantly increased in CCI group compared to sham group, however this cytokine reduced significantly in post cci exercise group compared to CCI group. Conclusion: Exercise following neuropathic pain attenuates thermal hyperalgesia due to at least decrease in proinflammatory cytokine TNF-a.

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Keywords: CCI, TNF-a, Treadmill exercise, Thermal hyperalgesia.

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The impact of computerized physician order entry on patient safety; systematic review

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Abstract

CPOE increase patient safety as a decreasing way of medical errors. The aim of this study was to investigate the role of computerized physician order entry on patient safety in health care. Current research indicates that ineffective communication among health care professionals is one of the leading causes of medical errors and patient harm. A review of reports from the Joint Commission reveals that communication failures were implicated at the root of over 70 percent of sentinel events. When asked to select contributing factors to patient care errors, nurses cited communication issues with physicians as one of the two most highly contributing factors, according to the National Council of State Boards of Nursing reports. The study is a systematic review in which all the related articles since 2005 to 2015 were reviewed. The related articles were sought and found in databases (Google scholar, PubMed and Science Direct) and English keywords are applied. Thus 112 English printed articles were retrieved and eventually 11 were selected to study. Considering the 11 articles, suggested that 1 article use the impact of CPOE on turnaround time and another article work on the adverse drug events. Other studies examined several factors of patient safety including: Drug interactions, improving medication orders and prescription, proper dosage and the use of abbreviations. In one study, the largest impact of CPOE was reducing errors of illegibility (97%), use of inappropriate abbreviations (94%) and missing information (85%). The results of this review indicate that CPOE systems reduce medication errors and improve patient safety so that it is an important role.

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Keywords: Computerized physician order entry, Patient safety, Medical errors, Adverse drug events.

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Nursing consultation as a way to health promotion in chronic diseases

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Abstract

Health problems are common and costly in chronic diseases, but also are preventable and the purpose of the health care system is providing the best care. Nurses play a key role in the care of patients with chronic diseases. One of the important roles of nurses, is consulting role that enhance patient safety and health, enabling more choice for patients, improve the standard of care received by patients, reduce readmissions and reducing the length of hospital stay. Hence the need for nursing consultation is needed and the aim of this study is to evaluate the role of nursing consultation as a way to health promotion in patients with chronic diseases. This qualitative study using content analysis, was conducted based on 24 participants who were willing to participate in the study (patients, nurses, doctors and faculty). Participants were purposively selected. Data were collected using semi-structured interviews and analyzed using conventional content analysis. Rigor of data were analyzed using the Comments Lincoln and Guba. The 3 main categories and 7 sub-categories was formed in this study. The main categories with subcategories are: 1. Communication in consultation (good communication in consultation, informing patient about the right of asking questions), 2. Reducing complication (consultation to reduce postoperative complications, consultation to reduce disease complications, consultation to adherence treatment), 3. See a doctor right (referring patients to the appropriate specialist, emphasis the need for a checkup). In this study, how to provide consulting services to chronic patients examined and it seems that consulting role of nurses in improving care for chronic patients and health promotion is effective.

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Keywords: Nursing consultation, Health promotion, Chronic diseases.

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Investigating the role of Greek key motifs of amylase in amyloid fibril formation

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Abstract

Introduction: Amyloid fibrils are a class of protein nanofibres that form via self-associating of protein into dimer and oligomers, which eventually produces condensed fibril forms. A process of protein fibrillation that causes intracellular or extracellular accumulation of insoluble protein deposits causes many important neurodegenerative diseases such as Alzheimer’s, Huntington’s chorea or Parkinson’s. In most amyloid fibrils a conformational switching occurs from α-helix or random coil, to a β-sheet structure. To examine whether or not β-sheet containing proteins, are predisposed to form amyloid fibrils, α-amylase (containing three domain A, B and C) from Bacillus sp. KR8104 was chosen as a model and its aggregation was studied in the presence and absence of C domain consisting of beta sheets in the form of Greek key (consists of four adjacent antiparallel strands) arrangements.

Materials and methods: PCR was carried out to entirely remove the C domain of α-amylase. Based on the crystallography data and sequence analysis, specific primers were designed to delete the domain. The gene encoding a full length α-amylase (previously cloned into pET28a) was used as a template in the PCR mixture. The PCR product obtained for truncated gene was digested and cloned into NcoI and XhoI restriction sites of an expression vector, pET28a. The constructed recombinant plasmid was transformed into E. coli BL21 and expressed under optimal condition (0.5 mM IPTG at 20 °C for 2 hours). Amyloid fibril formation of both constructs (with and without domain C) were examined for their ability to form amyloid fibrils using Congo red and thioflavin-T fluorescence assay. Results revealed differences between the complete and truncated protein.

Conclusion: Our data suggest that the highly C terminal region (Greek key motif) of α-amylase may act as an intramolecular chaperone by protecting the hydrophobic domain from aggregation. Understanding the function of such chaperone-like parts of fibril-forming proteins may provide novel insights into the mechanism of amyloid formation.

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Keywords: α-Amylase, Domain C, Amyloid fibrils.

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Systematic review of the impact of social media in health care

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Abstract

Social media, a group of Internet-based applications which use accessible and scalable communication techniques. Recently, the use of social media is arising in the context of health care and to be located an important part of everyday life to itself. Nowadays a variety of technologies found a way to the field of health care. Social media is a typical example of these technologies which has a special place in the health sector and shows facilities and different challenges for Web Science in the field of medical and health care. The aim of this study was to evaluate the impact of social media on health care. The study also found that the most widely used social media venues for physicians were online communities where physicians can read news articles, listen to experts, research new medical developments, network, and communicate with colleagues regarding patient issues. Patients can benefit from the use of social media through education, obtaining information, networking, performing research, receiving support, goal setting, and tracking personal progress. Future research should further examine other financial, technological, informational, ethical, legal, and privacy issues surrounding the use of social media in healthcare. This paper is a systematic review in which the collection of information by searching in PubMed, Science Direct and Google Scholar foreign bases are limited to English and took place in the period of June 2010 to August 2015. 166 articles in Persian and English retrieved which finally due to import and export criteria, 7 articles was known as related articles to the topic and these articles have been reviewed. The results of full survey from seven studies showed in the first paper use social media in health systems. Three articles work on the impact of social media on the consequences of patient's public health. Three other studies were emphasized on the combined data from social media and their use for health care. In these studies, they discussed about the main use of social media to increase engagement, facilitate and share information on health. Social media brings a new dimension of health care and provide a platform about health issues for patient's use and other health care providers. Social media is a powerful tool that involved collaboration and social interaction between users for a wide range of people. With the increasing use of social media, more opportunities have arisen in health care. Among social media after YouTube, Facebook is the most used social network in the world.

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Keywords: Social media, Health care, Web 2.0, Public health, Systematic review.

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Synergistic effects of serotonin and D-lys3- GHRP-6 on food intakes in food deprived male rats

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Abstract

Introduction: D-Lys3 -GHRP-6 or serotonin exerts an inhibitory effect on food intakes. In the present study, we aimed to investigate the effect of serotonin on food intakes in D-Lys3-GHRP-6 treated food deprived male rats.

Materials and methods: Twenty food deprived male rats in four groups (in each group n=5) received third cerebral ventricular injections of saline, 10µg serotonin, 20nmol D-Lys3-GHRP-6 or combination of serotonin/D-Lys3-GHRP-6 in a volume of 3µl respectively. Mean one hour food intakes were measured. Data were analyzed by one-way analysis of variance ANOVA with post hoc Tukey’s test.

Results: In all cases P<0.05 was considered to be statistically significant. Serotonin, D-Lys3-GHRP-6 or combination of serotonin/D-Lys3-GHRP-6 decreased significantly mean food intakes compared to saline. A significant decrease was observed on mean food intakes between the combination of serotonin/D-Lys3-GHRP-6 group and serotonin or D-Lys3-GHRP-6 groups. A significant decrease was not observed on food intakes between serotonin and D-Lys3-GHRP-6 groups. Serotonin and D-Lys3-GHRP-6 may exert synergistic inhibitory effects on food intakes in rats.

Conclusion: Decrease of the ghrelin pathway activity may have a role in the mediating of the inhibitory effects of serotonin on food intakes.

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Keywords: Serotonin, D-Lys3- GHRP-6, Food intakes.

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The study of relationship between vitamins B12, B6 and folic acid with homocysteine blood levels in cardiovascular patients

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Abstract

Cardiovascular disease (CVD) is the most important cause of death and disability in the world, which has a high prevalence in industrialized and developing countries. One of the very high risk for this disease is high levels of homocysteine. In view of the vitamins B12, B6 and folic acid are participated as a cofactor in homocysteine metabolism. We decided to review the study of relationship between vitamins B12, B6 and folic acid with homocysteine blood levels in cardiovascular patients. This article is a review study, which is a collection of some 32 articles gathered for review with the help of key words such as cardiovascular disease, homocysteine, vitamins B12 and B6 and searching websites such as Sid, Iran Medex, Google Scholar, Magiran, Pubmed. Homocysteine is a sulfur amino acid that is catalyzed by methionine synthesis enzyme and produces methionine. Cystathionin B synthases is also converted homocysteine to cysteine. Vitamins B12, B6 and folic acid participate as a coenzyme and a cofactor of above enzymes in these processes. Therefore, the lack of these vitamins reduces enzymatic activity and inhibits breakdown of homocysteine, which leads to hyperhomocysteinemia. Hyperhomocysteinemia is considered as a risk factor for cardiovascular disease. According to the studies, the lack of vitamins B12, B6 and folic acid can lead to reduced homocysteine levels. Therefore, paying attention to the proper diet or supplements intake to lower homocysteine concentrate is recommended in cardiovascular patients.

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Keywords: Cardiovascular disease, Homocysteine, Vitamins B12 and B6.

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Measurement of lipid peroxidation and protein oxidation markers in plasma of Alzheimer's disease patients

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Abstract

Introduction: Studies have shown oxidative stress (OS) is an important indicator in the pathogenesis of Alzheimer’s disease (AD), but some studies regarding OS have controversial results. Therefore, in this study, we evaluated the plasma levels of Malondialdehyde (MDA) and carbonyl as lipid and protein oxidative damage markers in AD patients and control group. Materials and methods: This study was carried out on 30 AD patients with severe probable AD and 30 sex and age matched healthy subjects. Alzheimer’s patient diagnosis based on National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer’s Disease and Related Disorders Association (NINCDS/ADRDA) criteria. Also for patients, the Mini-Mental State Examination (MMSE), computed tomography (CT) scan and brain magnetic resonance imaging (MRI) were done. The plasma levels of Malondialdehyde (MDA) and carbonyl were measured by spectrophotometric methods. Results: MMSE score for AD and control groups were achieved 3.6 ± 0.24 and 28.3 ± 0.77 respectively (p<0.001). Plasma level of MDA significantly increased in AD patients in comparison to control group (p=0.036), the plasma level of carbonyl increased in patients but was not significant (p=0.117). Also Area under ROC curve (AUC) for MDA and carbonyl were 0.63 and 0.61, respectively. Conclusion: Our results confirm the link between damage caused by oxidative stress and AD and these markers may be contributed in etiology of AD. Thus, it is recommended to determination of the oxidative stress markers in AD patients for more effective treatment of patients.

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Keywords: Alzheimer’s disease, Oxidative stress, MDA, Carbonyl.

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Effect of alcoholic extract of grape (Vitis Vinifera) on wound healing diabetic male Wistar rats

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Abstract

Introduction: Finding effective drugs have been considered for healing diabetic wounds by researchers. The purpose of this study was to evaluate the effect of alcoholic extract of grape (Vitis Vinifera) on wound healing diabetic male Wistar rats. Materials and methods: In this study 48 male Wistar rats were divided into four groups (negative control, positive control, the first experimental, the second experimental). A wound with 3 cm length was created on the left side of the spinal cord's skin in all groups. The wound healing was evaluated microscopically. The results reported as Mean ± SD. Statistical inference border were (P ≥0/05) and (P ≥0/01) and (P ≥0/001). Results: Wound healing in diabetic groups was later compared with the normal group and wound healing in experimental groups treated with Vitis Vinifera was quicker than the control group, respectively. Conclusion: In this study, results showed that Vitis Vinifera accelerated the wound healing in normal and diabetic samples.

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Keywords: Wound healing, Alcoholic extract of grape (Vitis Vinifera), Diabetic rat.

How to cite this article: Allahgahi, F., 2016. Effect of alcoholic extract of grape (Vitis Vinifera) on wound healing diabetic male Wistar rats. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Protein beta-defenses 126 and its relationship with infertility

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Abstract

Introduction: Infertility is a major problem and finding solutions to the survival of the human race is so important. The purpose of this gene polymorphism and protein expression levels of beta defenses 126 and positive relationship with the results of IUI infertility treatment through (IUI). Materials and methods: The study included 66 men with unexplained infertility with natural indicator of sperm parameters on the basis of standard criteria (WHO) referred to Royan Institute for Reproductive Medicine Center took action IUI. This study was conducted as a case-control study. Blood and semen samples were collected after they completed the information form and consent by them to investigate gene and protein beta-defenses 126 and its relationship with IUI in the period of one year from September 2014 to October 2015. Results: The results of the project showed that protein analysis defenses is an important factor in infertility. Conclusion: The analysis of genotype polymorphisms menless fertile for the removal of beta defenses 126 can help determine fertility interventions appear effective steps in this study provides a situation in the future so that it can be treating these types of patients.

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Keywords: Infertility, Sperm, Proteins defenses, IUI.

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A review on antimicrobial activity of different medicinal plants

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Abstract

According to the increasing resistance of pathogenic bacteria to common antibiotics, researchers are trying to discover new antimicrobial agents with plant origin instead of regular medicine. Eucalyptus, peppermint and cumin are antimicrobial plants. Antibacterial activity in various concentrations of plant extracts were evaluated on different bacteria which indicated an inhibitory effect on bacteria growth. Now a days prescribing of medicinal plants and their extract in industrialized countries contain 20 percent compare to third world countries which is almost 50 percent. Since there are plenty of medicinal plants in our country; evaluation of antibacterial effects of these plants are beneficial for our national's wealth. Eucalyptus, peppermint and cumin are antimicrobial plants and extract of these plants have different antimicrobial effects. Effect of antibacterial of different medicinal plants can reduce usage of regular medicine with minimum side effects.

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Keywords: Eucalyptus, Peppermint, Cumin, Antimicrobial.

How to cite this article: Allahgahi, F., 2016. A review on antimicrobial activity of different medicinal plants. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.

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A review on the efficacy of various grape extracts on wound healing

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Abstract

Reduction of recovery time in wound healing is one of the most important aspects in medical science. Therefore, recognition of biological steps and their mechanisms in wound healing is the best way for curing of different type of wounds. Finding effective medicine for curing diabetic wound is the main aim of medical researchers for substituting regular medicine. Different parts of grape and its extract has been evaluated and showed faster wound healing. Diabetes is a metabolic abnormality which is known with hyperglycemia and problem in the secretion of insulin, function of pancreas and at the end of detected skin wound. According to the grapes composition there are a lot of vitamins, including A, B and B6. Grape seeds contain different type of ions like K+, Mg+2 which has a role in balancing of body fluid like blood and their toxic materials. Different parts of grapes can be used as medicine. Grape extract can stimulate wound healing. It is a very good substance as complementary for other medicine in wound healing.

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Keywords: Wound healing, Grape extract, Diabetes.

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The role of stem cells in the repair of skin lesions caused by the bacterium Staphylococcus aureus

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Abstract

Now a days, usage of stem cell is the main factor for repairing in the medical field; researchers have special consideration on this aspect. Stem cells are able for self-renewing and differentiate into different types of cell lines. This is an attractive subject in the field of cell biology and cell therapy. The main causes of infected wounds are from bacterium called Staphylococcus aureus. The wound is yellowish color, Impetigo sores caused by the presence of these bacteria. Researchers are trying to repair wounds affected by this bacteria. So in this study, they are trying to evaluate the role of stem cells in curing of skin lesions with presence of staphylococcus aureus bacterium. Staphylococcus aureus is gram positive and selective anaerobic bacteria. Stem cells can repair damaged tissue especially in skin lesions which is affected by staphylococcus aureus bacterium. As we know staphylococcus aureus can provide skin lesion. Stem cell biology is introducing a new way of treatment for skin lesion caused by these bacteria (transferring of skin fibroblast cells to the affected area). Skin fibroblast cells can be used for repairing of wounds affected by staphylococcus aureus.

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Keywords: Stem cells, Skin lesions, Staphylococcus aureus.

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Exploring the experiences of living with infertility in menopausal women in Iran, a phenomenological qualitative study

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Abstract

Introduction: The qualitative studies are more effective in human experience than quantitative research. Do not have study focusing on the experience of menopausal infertile women who haven’t experienced of motherhood in all their lives. The purpose of this qualitative study was to describe the experience of infertility in menopausal women. Materials and methods: In a phenomenological qualitative study, conducted 17 semi-structured individual interviews in Ilam, west of Iran, in 2014. Study participants were selected purposively by using a snowball sampling method. The participants met the inclusion criteria, including postmenopausal women with no history of pregnancy, at least one year after the start of menopause. All women with abnormal menopause such as menopausal induced by surgery, drugs or chemotherapy were excluded of study. Data analysis was carried out based the Colaizzi process for phenomenological data analysis. Results: Through analysis six sub themes emerged, including: Physical factors, psychological factors, beliefs and religion, social relationships, instability in life and strategies. These were encompassed in the core category of ‘motherhood experience’. Conclusion: An identification experience of infertility is essential to develop appropriate consulting services. Due to the impact of various factors on the experience of infertile women, similar studies are recommended in different cultures.

Keywords: Experiences of infertility, Phenomenological study, Qualitative research.

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Assessment of inflammatory markers TNF-a, IL-6 and its relation with clinical status in stroke patients

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Abstract

Introduction: Acute stroke is the most common neurological disease. Stroke is the second leading cause of mortality in the worldwide and is a major cause of long-term disability. Also, in occurring of inflammatory cascade, the stroke will be activated and play the main role in disease separated from them. This study was carried out to investigate the association of serum TNF-a and IL-6 levels with clinical outcome in acute stroke. Materials and methods: The study involved 90 patients. 45 control and 45 patients with the first-time stroke aged 71.2 ± 10.8 years of both sexes entered the study consecutively. Modified Rankin Scale (mRS) for stroke severity were evaluated on two months. Serum IL-6 and TNF-a level were measured by enzyme-linked immunosorbent assay (ELISA) on days 1. The association between serum TNF-alpha and IL-6 levels in stroke patients with control values and stroke outcome was evaluated by T-test (SPSS software 22). Moreover, statistical significance was defined as P<0.05. Results: Ninety patients with 45 stroke (14 females and 31 males) and 50 control subjects (34 males and 16 females) were included in the study. Mean serum TNF-α and IL-6 level in the control group and Mean serum TNF-α level in the stroke patient group was (26.57 Pg/ml, 45.30 Pg/ml. 112.55 pg/ml, 140.02). The levels of TNF-alpha and IL-6 in serum were no significantly correlated with the volume of Dysphagia (r =0.099; P<0.05 and r=0.170; P<0.05). However, the difference of IL-6 levels among groups was not significant. In contrast, there was no significant association between inflammatory markers with the severity of dysphagia, MRs, and serum albumin. Conclusion: The results of this study demonstrate that increased inflammatory markers increase the severity of dysphagia and worsening clinical status of patients. Therefore, inflammatory markers can be used as reliable prognostic factors for predicting the prognosis of patients with stroke.

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Keywords: Inflammation, Stroke, Clinical status.

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Molecular mechanisms of antibiotic resistance

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Abstract

The number of infections caused by multidrug-resistant bacteria is increasing globally, and the specter of untreatable infections is becoming a reality. The most recent World Economic Forum Global Risks reports have listed antibiotic resistance as one of the greatest threats to human health 1–3. It is estimated that in Europe 25,000 people die each year as a result of multidrug-resistant bacterial infections and this costs the European Union economy €1.5 billion annually. Bacteria can be intrinsically resistant to certain antibiotics, but can also acquire resistance to antibiotics via mutations in chromosomal genes and by horizontal gene transfer. The simplest example of intrinsic resistance in an individual species results from the absence of a susceptible target of a specific antibiotic. In addition to intrinsic resistance, bacteria can acquire or develop resistance to antibiotics. This can be mediated by several mechanisms. Main groups: First, those that minimize the intracellular concentrations of the antibiotic as a result of poor penetration into the bacterium or of antibiotic efflux; Second, those that modify the antibiotic target by genetic mutation or post-translational modification of the target; Third, those that inactivate the antibiotic by hydrolysis or modification. Prevention of access to the target. Reduced permeability: Compared with Gram-positive species, Gram-negative bacteria are intrinsically less permeable to many antibiotics as their outer membrane forms a permeability barrier. Increased efflux: Bacterial efflux pumps actively transport many antibiotics out of the cell and are major contributors to the intrinsic resistance of Gram-negative bacteria to many of the drugs that can be used to treat Gram-positive bacterial infections. Changes in antibiotic targets by mutation: Most antibiotics specifically bind to their targets with high affinity, thus preventing the normal activity of the target. Changes to the target structure that prevent efficient antibiotic binding, but that still enable the target to carry out its normal function, can confer resistance. Modification (and protection) of targets: Protection by modification of the target can also be an effective means of antibiotic resistance that does not require a mutational change in the genes encoding the target molecules. Direct modification of antibiotics: Inactivation of antibiotics by hydrolysis: The enzyme catalyzed modification of antibiotics is a major mechanism of antibiotic resistance that has been relevant since the first use of antibiotics, with the discovery of penicillinase (a β-lactamase), in 1940. Inactivation of antibiotic by transfer of a chemical group: The addition of chemical groups to vulnerable sites on the antibiotic molecule by bacterial enzymes causes antibiotic resistance by preventing the antibiotic from binding to its target protein as a result of steric hindrance.

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Keywords: Molecular mechanism, Antibiotic resistance, Infection.

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Effect of ultrasound in produce collagen and measure skin thickness by transducer 40 MHz

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Abstract

Introduction: The interplay of Low-frequency ultrasound waves with the skin processes the basis for noninvasive, rapid and available diagnostic imaging. This study the basic platforms of skin ultrasound and it is usage in the different regions of dermatology and assess the result of ultrasonication on collagen fibril organization. Ultrasonography using a 40-MHz frequency transformer provides more accurately to measurement the skin width. Condition for measurements of substrate width and density were also good and may be helpful to recognize early changes in tissue totality prominent to tissue hurt. Extra data are necessary about the association of changes in substrate thickness and layer compression to probable tissue hurt. Materials and methods: 10 Guinea pigs have degree burnt in their back skin. Guinea pigs subjected to high-frequency ultrasound for 21 days. Under anesthesia, continuous ultrasonic energy (frequency, 1 MHz; intensity, 0-2 W/cm2) was delivered to the back skin of the US group for 5 min per day, 7 day per. After 21 days the entire skin thickness was observed with the 40 MHz transducer and by that we realized the production of collagen. Results: As can be seen from the conclusion of SEM and TEM, the ultrasonic therapy affects the organization of collagen fibers. These results infer that ultrasonic penetration at the fibril formation procedure of the collagen and can see by images the 40 MHz ultrasound transformer that extended burn skin width. The purpose of this study was to contrast the communication between skin width and concord and to measure the resolution of 40-MHz ultrasound while measuring the width of different skin. Conclusion: Textural attributes of collagen gels also changed after ultrasonication in second degree burn and we can see by a 40 MHz transformer skin width.

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Keywords: High frequency ultrasound, Skin collagen, Burn, Guinea pigs.

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Effects of *Punicagranatum* fruits extract on insulin gene expression and insulin signaling pathway in Alloxan-induced diabetic Wistar rats

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**Abstract**

**Introduction:** Pancreatic β-cells dysfunction and impairment of hepatic insulin signaling pathways usually conducts to hyperglycemia in diabetes mellitus (DM). *Punicagranatum* (pomegranate) is a traditional plant remedy in Iran due to its positive effects on ameliorating blood glucose homeostasis. **Materials and methods:** Alloxanmonohydrate-diabetic Wistar rats were administrated with pomegranate fruits aqueous extract (PE) and the effects of PE polyphenols on fasting blood glucose (FBG), *ins* expression, phosphorylation and expression levels of insulin signaling molecules, IR, IRS-1, IRS-2, PI3K and Akt were examined. **Results:** Our data showed a noticeable reduction in FBG by 64.78% in PE treated group. HOMA-IR test showed 57% improvement in PE rats, compared with controls. The results showed an improvement in hepatic expression of *irs*-1 and *akt* in PE administrated rats, whereas the damages due to phosphorylation of these proteins were reduced in PE treated group. **Conclusion:** It is suggested that PE consumption may contribute to the modulation of hyperglycemia through betterment of pancreatic β-cells *ins* expression and hepatic insulin signaling pathways in alloxan-induced diabetic rats.

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**Keywords:** Alloxanmonohydrate, Punicagranatum, Hepatic insulin signaling pathways, Insulin resistance, Diabetes mellitus.

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Knowledge and attitudes regarding HIV/AIDS in Zabol high school students 2014

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Abstract

Introduction: AIDS, acquired immune deficiency syndrome and a description of the disorders caused by defects in the function of the human immune system caused by infection with human immunodeficiency virus (HIV) infection occur. The disease can range from mild to viremia severe immune deficiency associated with life-threatening opportunistic infections and malignancies associated with AIDS. Transfer of HIV from multiple ways, such as through sexual contact, blood coagulation factor concentrate, contaminated blood components and multiple injections will be non-sterile. Materials and methods: We studied a cross-sectional study of 350 male and female high school students studying in the city of Zabol in 1393. For data collection questionnaire contains questions ground, contains 25 questions 3 option (Yes- No- I do not know) awareness about AIDS and its transmission routes, as well as 11 question 3 option (agree-disagree I don't have- comments) attitude about AIDS and its transmission routes, to collect information discussed previously in the "Knowledge and attitudes of high school students in Yazd province about AIDS" is used, the validity and content validity receive comments teachers were determined, as well as its reliability using Cronbach's alpha coefficient of 91% was confirmed and then the information collected and analyzed by SPSS-21 were analyzed. Results: Among the students that participated in the awareness of the AIDS study in 38 patients (9/10%), weak, 142 (6/40%) average and 170 (5/48%) were assessed well, the attitude toward AIDS in 114 patients (6/32%), weak, 204 (3/58%) average and 32 (1/3%) were evaluated good. Conclusion: This study showed that, despite adequate knowledge about AIDS, but in the attitude despite the prevailing attitude, 6/32% of students are poor attitude. The recommended strategies to reduce the risk of HIV among adolescents in secondary schools is developed.

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Keywords: Knowledge, Attitude, AIDS.

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The study on the knowledge, attitudes and function of gestated mothers about gestational diabetes that referred to health centers in the city of Zabol from 2014 to 2015

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Abstract

Introduction: Gestational diabetes is actually carbohydrates intolerance that is diagnosed during pregnancy for the first time. The factors which increase the risk of gestational diabetes include age of above 25, history of this disease in first-degree relatives, history of gestational diabetes or infant macrosomia, disorders on the results of previous pregnancies, glycosuria, hypertension, pregnancy times more than 5, and obesity. Awareness and attitude of women towards gestational diabetes could be very helpful and effective in prevention and early diagnosis of this disease. In fact, the present study is a primary step towards improving the health of pregnant women. Materials and methods: This descriptive, cross-sectional study was carried out on 300 pregnant women referred to health centers during 2014. In order to collect the required data and information, a questionnaire, including items on background, awareness, attitude, and performance, was handed out among the subjects. The obtained data were analyzed in SPSS 18 software. Results: Among the mothers participated in this study, 175 showed moderate awareness, 206 had a good attitude, and 168 enjoyed a good performance. Most pregnant women, with any level of education, had a good attitude towards gestational diabetes, more significantly in women with higher education than in those with a degree under high school diploma. Most subjects, with any sources of information, showed a good attitude which was higher in mothers who used books, magazines, and newspapers compare to those who used other sources of information. Most subjects did not have a positive attitude towards the impact of increased number of pregnancy on gestational diabetes. Pregnant women at any time of pregnancy period showed a good performance and attitude towards gestational diabetes, more significantly in the third three months. Conclusion: Development of training programs for prenatal care with special emphasis on gestational diabetes could lead to a reduction or elimination of risky pregnancies, promotion of the health of mothers and newborns, and finally improvement of society health status. The present study showed that there is a direct relationship between attitude and awareness of individuals and their performance. This means that the higher the awareness and more positive the attitude of individuals, the better their performance.

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Keywords: Attitude, Function, Gestational diabetes, Knowledge.

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Enhancement of mesenchymal stem cells liver regeneration potentialities in acute liver failure by autophagy suppression

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Abstract

Introduction: Acute liver failure (ALF) is liver tissue injury with extensive necrosis and associated with high rates of morbidity. Mesenchymal stem cells (MSCs) are suitable cells for cell-based therapy especially in regenerative medicine. However, their therapeutic potentials might be limited due to low survival. Autophagy plays an important role in cellular homeostasis and survival. In this study, we assay the regenerative potentials of autophagy-modulated-MSCs for the treatment of ALF in mice model. Materials and methods: Carbon tetrachloride was utilized for induction of ALF in mice. MSCs which are suppressed in their autophagy pathway were transplanted into ALF-induced-mice as well as normal MSCs. Alanine aminotransferase (ALT) and aspartate aminotransferase (AST), as liver enzymes, and tissue necrosis levels were evaluated using biochemical and pathological methods. Results: ALT and AST level dropped significantly in the mice which received autophagy-modulated-MSCs in comparison with sham group (with no cell therapy) after 24 hrs. Necrosis score was also decreased in the test group. Liver enzymes retained their normal levels in mice transplanted with autophagy-suppressed MSCs during 72 hrs post transplantation and normal histology without necrosis was also observed. Conclusion: Suppression of autophagy in mesenchymal stem cells prompted liver regeneration potential more likely due to paracrine effects. It might be suggested as a new strategy for the improvement of cell therapy in acute liver failure.

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Keywords: Acute liver failure, Mesenchymal stem cells, Autophagy, Cell therapy.

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Comparison of physical activity and prenatal care in pregnant women with and without hypertensive disorders in Tabriz educational medical centers and private hospitals

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Abstract

Introduction: Hypertension disorders affecting pregnant women constitute the most common medical problems during pregnancy and associated with one of three substantial mortality for mothers. Pregnancy and delivery have an important effect on women’s health and their hygiene and is considered as an important factor of national health. To reach to the health care for pregnant women, we studied pregnant women with hypertensive disorder and compared with women without hypertension disorders to take an enough prenatal and other factor of lifestyle such as physical activity for country health centers and them. Materials and methods: This research is a comparison-analytic study in which 441 pregnant women, 220 persons with hypertensive disorders and 221 people without hypertensive disorders referring to Alzahra, Taleghani, Shams and Shahriar hospitals in Tabriz for delivery or care were selected stratified as samples and the control group were matched age of mother and number of gravidity with hypertension group. The data were collected by questionnaire containing 3 sections (demographic characteristics, obstetrics medical history and prenatal care in pregnancy and physical activity). Data analyzed by STATA11 and descriptive, t test and Personnel unitized methods in research. Results: The results of research indicated that the mean of prenatal care score in case group was (81/7) and in control (83/4), from 100 scores. And we have meaningful different about statistical situation with (p=0/006) and in physical activity in case group was (54/6) and control group was (57/3) from 100 scores. In comparison between history of affecting hypertensive pregnancy in previous pregnancy (p=0/03), history of prenatal mortality (p=0/02) in case group were higher than control and we found mining full different, pre pregnancy BMI upper than 30 with linier Zed regression of objective group was observed high (p=0/02) but in educational and job in mother and husbands and also in history of gestational diabetes, abortion and preterm labor in previous pregnancy we didn't find any different. Conclusion: The results of this research indicated that women with body mass index upper than 30 in case group affected more than control in hypertensive disorders. Previous study sees overweight have been associated with increases in blood pressure. We need to complete and right education about physical activity and having stable BMI and Further researches are needed to develop an instrument that integrates the enough prenatal care for detecting hypertension disorder soon as soon and prediction of prenatal outcome in for all of the women.

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Keywords: Hypertensive disorder, Physical activity, Prenatal care, Pregnancy.

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News of Neonatal Tuberculosis prevention in Tuberculouse mothers

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Abstract

The most important way of Tuberculosis is deletion of spreading source by that’s treating. But with a series of general principles can decrease infect’s transmission. One of these diseases is Neonatal Tuberculosis. The best method of preventing infection in infant of mother with chest Tuberculosis and positive smear is the immediate onset of treatment for the mother. Thus mother can breastfeed, if growth of infant does not fine, can gave supplement food to infant, but it is not, breast milk is sufficient to 6 months alone, and then was added appropriate supplement food. In negative smear prevention for infant is not necessary immediately pre delivery and BCG injected intra partum, but in the other states (have written in the full text). In addition, mother treatment, breastfeeding, Izonyazid prescription for infant to 6 months and BCG injection after treatment is necessary. With these methods in mothers with chest Tuberculosis and positive mucus can prevent from neonatal Tuberculosis.

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Keywords: Prevention, Neonatal Tuberculosis, Tuberculouse mothers.

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Quality of life among Iranian infertile women in postmenopausal period; a cross-sectional study

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Abstract

Introduction: Medical Infertility has a large impact on women’s quality of life and women are faced with several physical and mental challenges. Therefore the present study designed to evaluate the quality of life among Iranian infertile women in postmenopausal period using a valid and reliable instrument. Materials and methods: In a cross-sectional study used the snowball method through professional and social networking. Inclusion criteria were included postmenopausal women with no history of pregnancy, at least one year after the start of menopause. All women with menopausal induced by surgery, drugs or chemotherapy were excluded of study. Used of both demographic and quality of life questionnaire for data collection. The quality of life questionnaire was included 41 items which measures the quality of life in five dimensions, including: Socioeconomic, mental health, religiousness, physical health and future imagining. Data analyze was carried out in IBM SPSS ver. 20.0 using descriptive statistic, x² test, and Fisher test. Results: Overall 211 eligible participants were studied. Some participants obtaining a full score of socioeconomic, religiousness, physical health, and future imagining dimensions of quality of life but none did earn a full score of mental health of the quality of life. There was a significant correlation between mental health with religiousness, and future imagining dimensions but the correlation between mental health with socio-economic and physical health dimensions was not significant. Conclusion: Considering the socioeconomic, mental health, religiousness, physical health, and future imagining are main dimensions of quality of life in infertile menopausal women, therefore, identification and training of these factors will improve the quality of life of infertile menopausal women.

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Keywords: Dimensions of quality of life, Infertility, Iranian women, Menopause.

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Prevalence and risk factors of domestic violence against women; a cross-sectional study in Iranian women

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Abstract

Introduction: Violence against women in families is the most common form of violence against them. The purpose of this study was to determine the prevalence of wife abuse and its effects on married women of Ilam. Materials and methods: In this descriptive-sectional research 334 individuals of referring married women to medical health centers of Ilam were selected by random sampling method and after their acceptance for study, their required information was extracted by 46 items questionnaire and then they were analyzed by SPSS software. Results: General prevalence of studied domestic violence against women was 62% (206/334) in which emotional violence has been more prevalent than other kinds of violence. There is a meaningful relationship between couple education levels, early marriage, more children, women occupation and violence against women. Conclusion: The highest prevalence of wife abuse in Ilam especially emotional violence is because of low levels of education of women, early marriage, more children, inefficient economic status and unemployed women could be a serious threat to women's health and other members of the family. This could be a grounding factor for other social harms such as suicide and this issue must be firmly studied in legal, religious, and cultural standpoints.

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Keywords: Domestic violence, Ilam, Women.

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Cultivated in Georgia Cotinus coggygria Scop's-Trimli's leaves extract: Study in dentistry

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Abstract

Introduction: It is widely known that, plant Cotinus coggygria-Trimli leaves diverse biological activity, including in dental practice. Materials and methods: Our objective was a clinical study of aqueous extract from the leaves of Cotinus coggygria Scop-Trimli cultivated in Georgia by Institute of Pharmacochemistry for industrial scales. Extracts of Trimlia smooth wash, was used in patients for therapy and prophylaxis of oral mucosa and periodontal diseases. Results: Clinical research revealed high antimicrobial activity and anti-inflammatory efficacy of extract. It should be noted that at next day from preparation usage was achieved significantly decrease of swelling, bleeding, pain of periodontal tissues as well as plaque performance reduction on teeth. Conclusion: The study is in progress in odontology, particularly in endodontic practice as tooth root canal irrigation solution, to reveal high antimicrobial potential of aqueous extract Cotinus coggygria against infected root canal microbes, especially against Enterococcus faecalis, Escherichia coli, which are resistant to widely used sodium hypochlorite (NaOCl) antiseptic agent.

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Keywords: Cotinus coggygria, Clinical medicine, Dentistry, Antimicrobial activity.

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Assessment of using Monte Carlo methods in studies related to neutron contamination of radiotherapy in linear accelerator: A comparative review

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Abstract

In recent decades, the use of radiotherapy has increased for treating cancer and followed by its linear accelerators that are widely used in radiotherapy facilities. Unfortunately, at the time of using radiotherapy with energies higher than 7-8 MeV, high-energy photons interact with components of the accelerator that is used for shaping and modulating the intensity of radiation in the beam path creates neutrons contaminants. In these circumstances, it is crucial to estimate received dose to the patients, doctors and personnel accurately. So the aim of this study is the assessment of using Monte Carlo methods in studies related to neutron contamination of radiotherapy in linear accelerator. Due to the high effectiveness of neutrons compared to the photons and electrons, this unwanted dose can increase the risk of secondary cancers. On the other hand, due to higher flux rate of photon compared to neutrons, limitation and difficulty experimental neutron dosimetry, it is very complex, but the Monte Carlo simulations code have been able to measure dose of each radiation separately, so the simulation is the most prominent method for computing photoneutron contamination. According to the results of the studies conducted by previous researchers from 1990 to 2014, it can be expressed generally that the use of simulation in studies of medical linear accelerators is low-costs, fast and unrestricted. Also, studies show that the results of the simulation have a good agreement with results of practical dosimetry in all of studies that used both methods.

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Keywords: Linear accelerator, Neutron contamination, Monte Carlo, Radiotherapy.

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The effects of exercise on different types of neurotrophins and brain function

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Abstract

Neurotrophins are kind of polypeptides growth factors which have an effect on differentiation, proliferation, and maintenance in neuronal and non-neuronal cells. Neurotrophins and growth factors are including different members. Nerve growth factor (NGF), Brain derived neurotrophic factor (BDNF), neurotrophin-3(NT-3), (NT-4), Glial cell derived neurotrophin factor (GDNF), and Vascular endothelial growth factors (VEGF). Neurotrophins are connected with different kind of tropomyosin related kinase (TrK) receptors. NGF is connected to TrKA, BDNF and NT-4 to TrkB, and NT-3 to TrKC. Thus, all of neurotrophins are have inclination to $^\text{P75NTR}$ receptor. Exercise can mediate the expression of neurotrophins with sundry ways. Evidences reveal that exercise can increase the level of almost all of neurotrophins in blood and brain. For example, physical activity can improve BDNF expression through multiple paths, for instance, increase in the measure of IGF-1, PI3K/AKT, Serotonin, CREB, ERR$s$, and PGC1$\alpha$. Also, exercise can improve the level of other neurotrophins with enhance of PI3K. Neurotrophins have various functions in central nervous system. NGF, BDNF and NT-3 are essential for protecting the neurons life in dorsal root ganglion. Also, BDNF can increase cognitive function, long term potentiation (LTP) and long term memory (LTM), that are associated with hippocampus. In this manner, BDNF and NGF have an influence on learning and memory. Inasmuch as, decrease of neurotrophins like BDNF, NGF and NT-3, are accompanied by behavioral disease like depression, Alzheimer disease and psychic disorder, augmenter function of exercise on neurotrophins can has remedial effects on decrease the symptoms of that disease. It can be concluded that, neurotrophins are placed among the important biological proteins which have a significant role in normal brain function. Physical activity can increase the level of neurotrophins. Also, exercise therapy can be used as a factor in improving the behavioral disorder and mental illness related to the lack of neurotrophins.

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Keywords: Neurotrophin, Exercise, Proliferation, Differentiation, Cognition function, Tyrosin kinase.

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The effect of z-axis automatic exposure control system on lifetime attributable risk of cancer incidence and mortality from chest CT scanning in women

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Abstract

Introduction: Beside advantages of the use of CT scanning in medical imaging, there is an increasing concern due to increasing dose received by the patients. Although CT scan is fast and accurate imaging modality and help physicians diagnose wide range types of disease, but high radiation dose from this modality and increase the risk of secondary cancers have been a worldwide issue. Through this and importance of CT dosimetry, we estimated Lifetime Attributable Risk (LAR) of cancer incidence and mortality from chest CT scanning in women, which perform with and without z-axis Automatic Exposure Control (AEC) system. Materials and methods: Patients’ protocols which effect on dose were gathered during a month and LAR of cancer incidence and mortality for each patient were estimated on two situations (with and without AEC). Organ equivalent dose to the breast were estimated with CT-expo dose calculation software according to ICRP report no. 103 tissue weighting factors. Also risk estimation was based on the Biological Effects of Ionizing Radiation V (BEIR V) risk estimation model report. Breast equivalent doses with and without the use of AEC were ranged between 4.5-13.7 and 5.1-15.7 mSv respectively. Results: Differences between breast dose in an individual patient in two situations, with and without AEC, were significant (p<0.05). Maximum LAR of cancer incidence and mortality values without AEC for 35 years old women were 21.67 and 5.28 per 100,000 respectively. Minimum LAR of cancer incidence and mortality values with AEC for 64 years old women were 0.9675 and 0.6774 per 100,000 respectively. Conclusion: Our results indicated that AEC system has potential to reduce LAR of cancer incidence and mortality in chest CT scanning.

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Keywords: Lifetime attributable risk of cancer, Chest CT, Automatic exposure control.

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Epidemiological status of patients surgically treated for hydatid cyst, hospital based survey in Sabzevar city from 2012 till 2016

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Abstract

Hydatid cyst is one of the most important and most common parasitic diseases. It is common between human and animals caused by the larval stage of Echinococcus granulosus. Considering the high prevalence of this disease in Iran, its epidemiological status recognition plays an important role in the control and prevention. The aim of this study was to investigate the frequency of patients surgically treated for hydatic cyst in one of the hospitals in Sabzevar city from 2012 to 2016. The conducted study was in the form of retrospective cross sectional and intended data such as gender, age, occupation, place of residence and cystic organs was extracted and registered out of medical records of 36 patients with hydatid cyst. Among the 36 cases, 26 (72.2%) were female and 10 (27.7%) were male. The age range was 11-67 and the highest prevalence rate of contamination was observed for 32-40 age groups. The most contaminated occupation group was housewives (4.44%) and the majority of the patients (8.63%) were urban. In terms of infected organ, 22 were with cyst in liver (1.61%), 12 in lung (3.33%) and 2 in their liver and lung (5.5%). Considering the fact that the most prevalence was observed among housewives (72.2%) and more than men or other occupations, the most significant reason for contamination might be their more frequent contact with parasite eggs in infected vegetables. Therefore, necessity of training to better understand the disease, training the way of the disease transmission and controlling methods as well as prevention is inevitable.

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Keywords: Epidemiology, Hydatid cyst, Surgery.

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Short-term effect of consumption Cistanche tubulosa for treating Alzheimer’s disease

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Abstract

Introduction: Alzheimer’s disease (AD) is a chronic neurodegenerative disease which associates with loss of short-term memory. This study was conducted to survey the effect of Cistanche tubulosa extract (CTE) on short-term treatment of AD. 60 adult male-Wister rats divided into 6 groups. Materials and methods: In the first group 10 healthy rats were served as negative control (T1). Treatments 2 to 6 received 17 mg/kg Aluminum chloride (intragastric) for 30 successive days in order to induction of Alzheimer. T2 was positive control, T3 received 0.3 mg/kg of Rivastigmine tartrate (Exelon®) daily, and T4, T5 and T6 received 100, 200 and 400 mg/kg of ethanolic CTE for 14 days, respectively. T-maze test was done 14 days after induction. Results: Results indicated that T2 (75.33±17.74) had statistically significant difference with other treatments (P<0.05). Also, all treatments which received CTE required shorter time to arrive destination compared to T2 and T3, but T5 (38.4±13.8) and T6 (23.4±4.82) had statistically significant difference with T3 (P<0.05). Only T6 had not a significant difference in comparison to T1. Results indicated a dose dependent effect of CTE on improving AD in short-term consumption. Literature reviewed showed CT has great antioxidant capacity and anti-inflammatory properties. Also, it is indicated that CTE helps improving the ability to elicit or recall memorized information. Conclusion: These findings indicate that CTE can protect nerve cells by regulating the expression of apoptosis-related factors and neurotrophic factors and also it can improve neural regeneration. Thus, CTE could prevent and treat AD by neutralize and reduce free radicals and inflammatory agents.

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Keywords: Alzheimer’s disease, Cistanche tubulosa, Rivastigmine tartrate, T-maze, Short-term treatment.

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Long-term effect of consumption Cistanche tubulosa for treating Alzheimer’s disease

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Abstract

Introduction: Alzheimer’s disease (AD) is a chronic neurodegenerative disease that usually starts slowly and gets worse over time. This study was conducted to survey the effect of Cistanche tubulosa extract (CTE) on long-term treatment of AD. Materials and methods: 60 adult-male-Wister rats divided into 6 groups. In the first group 10 healthy rats were served as negative control (T1). Treatments 2 to 6 received 17 mg/kg Aluminum chloride (intra-gastric) for 30 successive days in order to induction of Alzheimer. T2 was positive control, T3 received 0.3 mg/kg of Rivastigmine tartrate (Exelon®) daily, and T4, T5 and T6 received 100, 200 and 400 mg/kg of ethanolic CTE for 90 days, respectively. In order to evaluation of Spatial acquisition Morris Water Maze (MWM) test was done at the end of the experiment and data were captured by video tracking camera (EthoVision XT). Results: Results indicated that T2 (48.53±5.41) had statistically significant difference with all treatments (P<0.05). Also, all treatments which received CTE required shorter time to find platform location compared to T3, but only T4 (5.08±1.08) and negative control (9.37±3.40) (P<0.05) indicated statistically significant difference. No significant difference was observed among CTE groups (T4, T5 and T6) and negative control. Conclusion: The antioxidant and anti-inflammatory capacity of CTE is well-known in literature studies, on the other hand, some studies indicate neuro-regeneration effects of CT. Totally these effects makes CT a suitable candidate for treating AD. Thus, it is assumed that CTE could improve AD induced by Aluminum chloride by increasing antioxidant capacity (neuro-protecting) and neuro-regeneration.

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Keywords: Alzheimer’s disease, Cistanche tubulosa, Rivastigmine tartrate, Morris Water Maze, Long-term treatment.

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Abstract

Introduction: Firefly luciferase is a 62 kDa protein that produces a flash of light on the oxidation of luciferin in the presence of ATP, Oxygen and Mg2+; known to be most efficient bioluminescence system that makes it an excellent tool for reporter in nano-system biology and medicine. In spite of wide ranges of luciferase application, it is unstable against proteolytic degradation that reduces its half-life, and therefore leads to loss in sensitivity and precision in analytic applications. Materials and methods: In order to generate more stable luciferase against protease digestion, we substituted a tryptic site, arginine 330 with glutamine. The aim of this study was the expression and purification of this mutant and comparison of its stability against trypsin digestion with wild type luciferase. The Quik-change site-directed mutagenesis method is performed and after that mutant enzyme, R330Q, under different conditions such as temperature, time and concentration of lactose was successfully expressed and then by Ni-NTA sepharose column chromatography purified. Proteolysis conditions of this mutant and native enzymes investigated. Results: The results of proteolysis experiments showed that the sensitivity of this mutated enzyme R330Q has not considerable difference compared to the wild type, indicating the mutated enzyme is sensitive to the serine protease trypsin. Conclusion: Luciferase is most widely used bioluminescence protein in biotechnological processes, but the enzyme is susceptible to proteolytic degradation. In order to Improvement of luciferase stability against trypsin, mutagenesis was performed by SDM. The results showed that the mutant enzyme is not resistant to the trypsin protease.

How to cite this article: Jarchi, S., Ataei, F., Hosseinkhani, S., 2016. Protelytic sensitivity comparison of native and R330Q mutant luciferases. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Role of Troponin-I level in patients with chronic kidney disease (CKD) and diagnosis suspected acute coronary syndrome

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Abstract

Patients with chronic kidney disease (CKD) have a high prevalence of elevated serum troponin levels, which makes diagnosis of acute coronary syndrome (ACS) challenging. This study aimed to evaluate the utility of troponin in ACS diagnosis, treatment, and prognosis among patients with CKD. The literature review presents the studies that reported the efficacy of serum Troponin-I level in diagnosis of acute coronary syndrome in patients with chronic kidney disease between 1980 and 2016 and the search was conducted using the databases PubMed, Medline, EMBASE and Web of Science. We also searched Clinical Trials.gov and requested relevant published or unpublished trials from manufacturers of troponin assays. Myocardial infarction (MI) is a common cause of mortality in patients with chronic kidney disease (CKD). Since the troponin-I level arises in 4-21% and troponin-T in 17-75% of CKD patients without any myocardial cause, diagnostic value of cardiac troponins decreased in these patients. Patients with CKD often have persistently elevated troponin levels reducing the specificity of this test. The reason for the increased levels probably has more to do with increased enzyme release from structural heart disease rather than the more conventional definition of decreased clearance. In one study looking at the half-life of troponin-I following AMI, found no difference between patients with ESRD and patients with normal renal function. Patients with chronic kidney disease (CKD) have a high prevalence of elevated serum troponin levels, which makes diagnosis of acute coronary syndrome (ACS) challenging. Patients with renal insufficiency may have increased serum troponins even in the absence of clinically suspected acute myocardial ischemia, while cardiovascular disease is the most common cause of death in patients with renal failure, we are just beginning to understand the clinical meaning of serum of troponin elevations. Many large-scale trials demonstrating the utility of serum troponins in predicting adverse events. Cardiac troponin-I measured, using the mentioned laboratory method was not suitable to diagnose ACS in CKD patients, therefore, we suggest that CK-MB in similar conditions. More evaluations are needed to approve these findings. In patients with CKD and suspected ACS, troponin levels can aid in identifying those with a poor prognosis.

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Keywords: Troponin-I, Chronic kidney disease (CKD), Diagnosis, Coronary syndrome.

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The pivotal role of parental characteristics on the incidence overweight/obesity in preschool children

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Abstract

The aim of this study is to illustrate how factors relating to children’s familial predisposition to obesity and to their home environment can act together to influence children’s eating and weight development and compare children with high and low risk of developing obesity. The study was conducted 215 children, aged (12-19), who participated in the study. Parental factors which had significant association with the incidence of overweight and obesity in children were entered into parental clustering. Height and weight were measured, also adjustment was made for gender, maternal education, physical activity and healthy eating index. Survival analysis was used to model the influence of predictors on changes at 10th, 25th, 50th, 75th and 90th BMI percentiles over time. Parental education, metabolic syndrome (Mets), age, employment status and body weight status, played pivotal roles in distinguishing low, moderate and high risk clusters. This high risk group were more likely to be overweight and obese (p<0.001, HR=1.37), compared to those in the low risk group (p<0.05, HR=1.41). Income and energy intake were associated with positive changes in upper percentiles. Physical activity (PA) had a negative association with BMI for both gender in all percentiles and children with 2 obese parents are 10 to 12 times more likely to be obese. Parents’ education is one of the most influential factors in childhood obesity. Mother’s educational role of parents is highlighted. Parents with good dietary awareness (or nutrition knowledge) are more likely to make healthy food choices for their children. Observational studies have shown that higher levels of maternal nutrition knowledge are associated with higher fruit and fibre intakes and lower fat intakes by children. The study showed the added value of parental characteristics in distinguishing familial clusters which could predict the incidence of overweight and obesity in children.

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Keywords: Body mass index, Children, Overweight, Lifestyle, Physical activity, Parental education.

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Evaluation of sexual dysfunction, infertility and quality of life in patient with spinal cord injury: Systematic review

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Abstract

Nutritional schedules have demonstrated a potential to improve reproduction system function and they can promote mitochondrial health, they are inclusive of shelled, vegetables, fruits, mutton, beef, grains, dairy products, ghees and honey. The purpose of this systematic review was to elucidate the role of nutrition in betterment of human reproduction system function in relevance to sexual dysfunction or infertility. This chapter describes the impact of SCL on various phases of men’s and women’s sexual responses and on various aspects of sexuality. The purpose of this systematic review was to elucidate the role of nutrition in betterment sexual dysfunction and promotion of life consent and confidence in relevance to patients with spinal cord injury. We did a systematic review of 38 studies identified by searching PubMed, Ovide, Elsevier, ProQuest, IranMedex, SID, and Magiran. All studies included nutrition affect related to sexual dysfunction and infertility. All studies were based on the important role of nutritional schedules in improving the function of male and female reproductive system as well as analysis showed nutritional interventions have an ability to promotion of mitochondrial health. Studies were relied on the ability of nutritive material in patients treatment or betterment with sexual dysfunction or infertility. Many aspects of sexuality can be disrupted following a spinal cord lesion (SCL). It can alter an individual's self-esteem and body image, interfere with positioning and mobility, introduce unexpected problems with incontinence and spasticity, decrease pleasure, and delay orgasm. Sexual concerns in men can involve erectile function, essential for intercourse, ejaculation function, necessary for fertility, and the ability to reach orgasm. In women they can involve concerns with vaginal lubrication, genital congestion, and vaginal infections, which can all go unnoticed, and orgasm, which may be lost. Intracorporeal injections of vasoactive medications or vacuum devices are effective means of restoring erections in selected patients with spinal cord injury. Penile prostheses are rarely indicated for this purpose. The fertility potential may be enhanced with assisted reproduction techniques, like intrauterine insemination and in vitro fertilization. Due to the reviewed articles, nutritional schedules can extraordinarily affect improvement of human reproduction in patients with sexual dysfunction or infertility likewise they can promote mitochondrial health. Nutritions have the potential to improve of male and female reproduction health and finally nutritional intervention in patients with sexual dysfunction or infertility plays an essential role in their treatment.

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Keywords: SCI, Sexual dysfunction, Nutritional schedule, Confident.

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Minimally invasive and novel procedures for the treatment of benign prostatic hyperplasia

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Abstract

Benign Prostatic Hyperplasia, sometimes referred to as Benign Prostatic Enlargement, is one of the most common complications and is a term that describes a prostate measurably larger than normal, which affects men beyond their middle age. The aim of this review is the assessment advances in the minimally invasive treatment in last three decades. The PubMed and Scopus databases were searched for clinical trial with the keywords of BPH and BPE, which were published from 1985 through May 2016 with relevant abstracts. This review clarifies the key points in medical management, traditional surgical treatment and also, minimally invasive treatment options in BPH. And focus on articles about surgical treatment with holmium laser holmium laser enucleation of the prostate (HoLEP), laser vaporization of the prostate (PVP) for benign prostatic hyperplasia. Blockers cause a rapid improvement in urinary flow rate and BPH-related symptoms and 5α-reductase inhibitors have been demonstrated to reduce prevalence of prostate cancer. Complication of surgical treatment, such as clot retention or bleeding occur in about 16% of patients and open prostatectomy is limited to cases with glands of volume 100 cm^3. The therapeutic options for benign prostatic hyperplasia (BPH) can be divided into medicinal, surgical and minimally invasive treatments. The minimally invasive treatment of BPH is gradually accepted by more and more urologists for its advantages of less damage, good effect, quick recovery and easy acceptance by patients, which includes transurethral needle ablation of the prostate (TUNA), transurethral microwave therapy (TUMT), PVP, HOLEP and so on. Bipolar transurethral resection of the prostate (B-TURP) was associated with a lower rate of perioperative complications. Better short-term efficacy outcomes, fewer immediate complications, and a shorter hospital stay were found after holmium laser enucleation of the prostate (HoLEP) compared with M-TURP. Compared with M-TURP, Green Light photoselective vaporization of the prostate (PVP) was associated with a shorter hospital stay and fewer complications but no different short-term efficacy outcomes. This meta-analysis shows that HoLEP is associated with more favorable outcomes than M-TURP in published RCTs today, the choice of BPH treatment requires a balance in clinical needs and considerations, the preference of patients and being cost-benefit treatment as a long-term therapy.

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Keywords: Benign prostatic, Transurethral needle ablation of the prostate (TUNA), Transurethral microwave therapy (TUMT), Holmium laser enucleation of the prostate (HoLEP).

How to cite this article: Mokhtari, N., 2016. Minimally invasive and novel procedures for the treatment of benign prostatic hyperplasia. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Impact of physical exercise on alcohol use disorders: The systematic review

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Abstract

Excessive alcohol use can cause harmful effects on the human body, which are associated with serious health problems, but exercise provides a wealth of benefits to the brain and body, and is regarded as a protective factor against disease. There is a certain evidence that physical exercise positively affects excessive alcohol use and the associated problems by leading to reduced alcohol intake. The purpose of study provides an updated view to present a summary of the growing body of published supporting exercise training as a treatment strategy for individuals with alcohol use disorders (AUDs). The systematic review presents the studies that reported on the use of exercise in the treatment of AUDs between 1980 and 2016 and the search was conducted using the databases PubMed, Medline and Web of Science. The role of exercise in enhancing the social environment and increasing individual self-efficacy to reduce excess and/or inappropriate alcohol consumption will also be discussed. Subclinical depression or anxiety, and the use of physical activity as a means of upgrading life quality through enhanced self-esteem, improved mood states and schizophrenia, reduced state and trait anxiety, resilience to stress, or improved sleep. 13 studies were identified that refer to the effect of exercise on alcohol consumption and the associated outcomes. Seven of those studies concluded that exercise may have a positive impact towards alcohol consumption, abstinence rates. Another 3 studies indicated that responses to acute exercise in individuals with AUDs are different compared to those in healthy ones. These studies suggested that alcohol consumption decreases the use of glucose and amino acids by skeletal muscles, exercise may attenuate the ethanol-induced decline in hepatic mitochondria and accelerates ethanol metabolism by the liver. Exercise training seems to reduce the extent of the oxidative damage caused by ethanol. It is well documented that alcohol use modulates the immune system and impairs host defense. This body of research suggests that chronic alcohol use is linked with adverse effects on the body systems and organs including the brain, the cardiovascular system and the liver and moderate regular exercise should be considered as a viable means of treating depression and anxiety and improving mental well-being in the general public.

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Keywords: Physical exercise, Anxiety, Alcohol use disorders (AUDs).

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Increased plasma homocysteine levels with signs of vitamin B12 deficiency in patients with multiple sclerosis

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Abstract
There is evidence that homocysteine contributes to various neurodegenerative disorders, and elevated plasma homocysteine levels have been observed in patients with multiple sclerosis (MS). To investigate if and why plasma homocysteine levels are increased in MS, and whether they play a role in the disease course. The literature review presents the studies that reported plasma homocysteine levels in multiple sclerosis between 1980 and 2016 and the search was conducted using the databases PubMed, Medline, EMBASE and Web of Science. We also searched ClinicalTrials.gov and requested relevant published or unpublished trials from manufacturers of increased plasma homocysteine levels with signs of vitamin B12 deficiency in patients with multiple sclerosis assessed by blood and cerebrospinal fluid homocysteine and methylmalonic acid. In recent years, there has been increasing interest in the role of plasma homocysteine (Hcy) as a possible risk factor for several diseases of the central nervous system. Deficiencies in vitamin B6, vitamin B12, or folate are associated with elevated plasma levels of homocysteine. In the search for a possible relationship between vitamin B12 deficiency and multiple sclerosis (MS), two studies found elevated plasma homocysteine levels in patients with MS. The frequency of biologically relevant vitamin B12 deficiency in MS is low, and it is uncertain, whether this provides a satisfactory explanation for the raised plasma homocysteine concentrations. There is evidence that homocysteine contributes to various neurodegenerative disorders, and elevated plasma homocysteine levels have been observed in patients with multiple sclerosis (MS). The nervous system may be particularly sensitive to extracellular homocysteine, as it promotes excitotoxicity via stimulation of N-methyl-D-aspartate receptors, and damages neuronal DNA, thereby triggering apoptosis. Increased levels of homocysteine may play a role in the pathogenesis of Alzheimer's disease, through both vascular and degenerative mechanisms, and hasten the onset and progression of Parkinson's disease. High homocysteine resulting from poor reconversion to methionine is related to low methionine availability. Elevated homocysteine (Hcy) levels exert several neurotoxic actions and vascular dysfunctions that may be involved in pathogenesis and progression of multiple sclerosis (MS). Also, elevated plasma homocysteine occurs in both benign and progressive disease courses of MS, and seems unrelated to immune activation, oxidative stress, or a deficiency in vitamin B6, vitamin B12, or folate.

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Keywords: Multiple sclerosis, Homocysteine, B vitamins, Oxidative stress, Benign MS.

How to cite this article: Mokhtari, N., 2016. Increased plasma homocysteine levels with signs of vitamin B12 deficiency in patients with multiple sclerosis. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Association of parenting style, parental feeding practice and childhood overweight/obesity

Navid Mokhtari

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Abstract

The role of parenting is particularly critical for young children because parents directly determine the child’s physical activities and social environment and indirectly influence behaviors, habits, and attitudes through socialization processes. To examine the relationship between obesity in children and obesity in adulthood, we reviewed the epidemiologic literature published 2000 and May 2016. A review of recent literature regarding child-feeding behaviors and child weight. Literature searches in PubMed, Proquest, Informit, PsychInfo, and Geobase were conducted. Fifteen quantitative studies met the inclusion criteria for this Literature review. The majority of studies were cross-sectional and published after 2006. About a third (26-41%) of obese preschool children were obese as adults. For all studies, the risk of childhood obesity was at least twice as high for obese parent as for nonobese parent. Parents report using a wide range of child-feeding behaviors, including monitoring, pressure to eat and restriction. Restriction of children’s eating has most frequently and consistently been associated with child weight gain. Furthermore, there is substantial evidence for a causal relationship between parental restriction and childhood overweight. Parents may inadvertently promote excess weight gain in childhood by using inappropriate child-feeding behaviors. We recommend the development of interventions to increase awareness of the possible consequences of inappropriate child-feeding behaviors. Parents who are concerned about their child’s weight will also require guidance and support in order to adopt more appropriate child-feeding behaviors.

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Keywords: Body mass index, Children, Overweight, Lifestyle, Physical activity, Feeding behaviors.

How to cite this article: Mokhtari, N., 2016. Association of parenting style, parental feeding practice and childhood overweight/obesity. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Efficacy and safety of black cohosh in women with breast cancer

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Abstract

Many women use black cohosh as a natural treatment for menopausal symptoms. However, controversy exists around safety in breast cancer, because of its purported estrogenic activity. The purpose of study was to review and summarise current evidence on the efficacy and safety of herbal medicinal products for the relief of hot flushes in women with previous breast cancer. It is also called black snakeroot, macrotyis, bugbane, bugwort, rattleroot, rattleweed, rattlesnake root or squawroot. We searched MEDLINE, Embase, the Cochrane Library, and AMED from inception to May 2016 and for human interventional or observational data pertaining to the safety and efficacy of black cohosh in patients with or at risk of breast cancer, including an assessment of the effect of black cohosh on estrogen responsive tissues. Black cohosh, an herb most commonly used to reduce menopausal symptoms such as hot flashes, may stop breast cancer cells in their tracks. This adds more evidence to a small but growing body of research suggesting that black cohosh could have a use in breast cancer prevention. Black cohosh and phytoestrogens have received the most research attention but there is currently insufficient evidence to recommend either for relief of flushes. Opposing advice has been given regarding the safety of dietary phytoestrogen use for women with previous breast cancer, but there is emerging data that soyfood phytoestrogen intake may have a beneficial effect on tumour recurrence. It has also, effects on prostate cancer cells in the laboratory and in animal studies. Current evidence does not support an association between black cohosh and increased risk of breast cancer. There is a lack of evidence supporting the efficacy of black cohosh for reduction of hot flashes in breast cancer patients. Given conflicting but promising results, and apparent safety, further research is warranted.

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Keywords: Black cohosh, Breast neoplasm, Estrogen, Herb–drug interactions, Phytoestrogen.

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New research has shown that cannabis could act as effective anti-cancer agents

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Abstract

It is well-established that cannabinoids exert palliative effects on some cancer-associated symptoms. In this review we will summarize these potential clinical benefit of using cannabinoids in anticancer therapies and will discuss the possible future avenues of research in this area. We did a systematic review of 41 studies identified by searching PubMed, Ovide, Elsevier, ProQuest, IranMedex, SID, and Magiran. All studies included nutrition affects related to promotion of life consent, Sexual dysfunction betterment and confidence in patients with spinal cord injury. Cannabinoids are the bioactive components of the Cannabis plant that display a diverse range of therapeutic qualities. We explored the activity of six cannabinoids, used both alone and in combination in leukaemic cells. Cannabinoids were cytostatic and caused a simultaneous arrest at all phases of the cell cycle. Cannabinoids have been shown to activate an ER-stress related pathway that leads to the stimulation of autophagy-mediated cancer cell death. In addition, cannabinoids inhibit tumor angiogenesis and decrease cancer cell migration. The mechanisms of resistance to cannabinoid anticancer action as well as the possible strategies to develop cannabinoid-based combinational therapies to fight cancer have also started to be explored. Cannabinoids exert palliative effects in cancer patients by preventing nausea, vomiting and pain and by stimulating appetite. In addition, these compounds have been shown to inhibit the growth of tumour cells in culture and animal models by modulating key cell-signalling pathways. Cannabinoids are usually well tolerated, and do not produce the generalized toxic effects of conventional chemotherapies. Cannabinoids is used in anticancer therapies and we suggest that the activities of some cannabinoids are influenced by treatment schedules; therefore, it is important to carefully select the most appropriate strategy in order to maximize their efficacy.

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Keywords: Cannabinoids, Cancer, Anticancer therapies.

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Dandelion as an antioxidant a novel non-toxic anti-cancer agent

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Abstract

Dandelion may also have anti-cancer properties and it could slow growth of cancerous tumors and cultured cancer cells, at least in the laboratory. Here an attempt is being made through this review to highlights the natural products and their analogues established as anti-cancer agents and the new plant species identified with anti-cancer properties. The purpose of the database SID, Google Scholar, Science Direct and Pubmed were used and studies were examined by content analysis. Between 2000 and 2016. Articles that discussed impact of dandelion on disease progression in patients with cancer. The studies show that dandelion suppresses the growth and invasive behavior in several types of cancer. The oxidative stress-reducing effects of dandelion extract was tested on rats with liver damage from carbon tetrachloride (CCl₄), a chemical used in fire extinguishers and refrigerants which is highly toxic to the liver. Water-based dandelion extract, or dandelion tea, was observed to significantly reduce the amount of oxidative stress and inflammation present in the livers of rats. Dandelion roots and leaves have been part of traditional medicine for centuries. Practitioners recommend dandelion for many ailments, including liver problems, kidney disease, heartburn and stomach upset. Dandelion is rich in vitamins C, D, A and B complex, and contains iron, potassium and zinc. Some of these compounds benefit liver function, while others are diuretics that increase urine production by your kidneys. Dandelion also contains natural antioxidants, compounds that help your body get rid of free radicals. Free radicals are unstable molecules made in your body that can damage cell membranes and DNA, potentially speeding aging and raising your risk of cancer and other diseases. The results from this study indicated that, natural products in particular dandelion root extract, have great potential, as non-toxic and effective alternatives to conventional modes of chemotherapy available today.

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Keywords: Dandelion, Alternatives, Conventional, Chemotherapy.

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Inhibitory effect and anticancer activities of maple syrup on the cell growth

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Abstract

Civilization has known about cancer for thousands of years, and ancient mummies attest to the presence of cancerous tumors on all continents in prehistoric times. Maple syrup is a natural sweetener consumed by individuals of all ages throughout the world. Maple syrup contains not only carbohydrates such as sucrose but also various components such as organic acids, amino acids, vitamins and phenolic compounds. The purpose of study is to investigate the anticancer effect of maple syrup. A review of recent literature regarding maple syrup and cancer treatment. Literature searches in PubMed, Proquest, Informit, PsychInfo, and Geobase were conducted. Fifteen quantitative studies met the inclusion criteria for this Literature review. The majority of studies were cross-sectional and published after 1980. Recent studies have shown that these phenolic compounds in maple syrup may possess various activities such as decreasing the blood glucose level and an anticancer effect. In this study, we examined the effect of three types of maple syrup, classified by color, on the cell proliferation, migration and invasion of colorectal cancer (CRC) cells in order to investigate whether the maple syrup is suitable as a phytomedicine for cancer treatment. CRC cells that were administered maple syrup showed significantly lower growth rates than cells that were administered sucrose. In addition, administration of maple syrup to CRC cells caused inhibition of cell invasion, while there was no effect on cell migration. Administration of maple syrup clearly inhibited AKT phosphorylation, while there was no effect on ERK phosphorylation. These data suggest that maple syrup might inhibit cell proliferation and invasion through suppression of AKT activation and be suitable as a phytomedicine for CRC treatment, with fewer adverse effects than traditional chemotherapy. Studies have shown that these phenolic compounds in maple syrup are suitable for cancer treatment especially colorectal cancer (CRC).

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Keywords: Colon cancer, Cell proliferation, Cell invasion, AKT, Phytomedicine.

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Aromatherapy and massage for relief symptom and improve well-being and quality of life in patients with cancer

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Abstract

Aromatherapy massage is a commonly used complementary therapy, and is employed in cancer and palliative care largely to improve quality of life and reduce psychological distress. Some cancer patients use therapeutic massage to reduce symptoms, improve coping, and enhance quality of life. The purpose of this study was to evaluate the effects of massage with or without aromatherapy on pain and other symptoms associated with cancer. We searched the following databases and trials registries up to May 2016. We searched CENTRAL, MEDLINE (Ovid), CINAHL, EMBASE (Ovid), PsycINFO, SIGLE, CancerLit and PubMed Cancer Subset, SADCCT, and the World Health Organization (WHO) ICTRP. Massage has long been used to reduce tension, anxiety, and pain in various populations including cancer patients. Surveys indicate that over 20% of cancer patients use massage therapy. Through the application of pressure and motion to the muscle and connective tissues of the body, massage therapy elicits both physiological and psychological responses. The current article provides a summary and critique of published studies in which patient-reported symptom ratings were assessed in relation to massage therapeutic, massage as a cancer pain intervention appears to be safe and effective. Patients who receive massage have less procedural pain, nausea, and anxiety and report improved quality of life. The use of massage in cancer care centers and hospitals is on the rise. Massage has a positive effect on biochemistry, increasing levels of dopamine, lymphocytes, and natural killer cells. Massage and aromatherapy massage confer short term benefits on psychological wellbeing, with the effect on anxiety supported by limited evidence. Effects on physical symptoms may also occur. Evidence is mixed as to whether aromatherapy enhances the effects of massage. Replication, longer follow up, and larger trials are needed to accrue the necessary evidence.

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Keywords: Aromatherapy massage, Psychological, Quality of life, Cancer.

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Naringin inhibits tumor growth and useful for the treatment of cancer

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Abstract

Naringin, chemically 4',5,7-trihydroxyflavanone-7-rhamnoglucoside, is a major flavanone glycoside obtained from tomatoes, grape fruits, and many other citrus fruits. It has been experimentally documented to possess numerous biological properties such as antioxidant, anti-inflammatory, and antiapoptotic activities. The purpose of this study was to explore the anticancer effect and mechanism of naringin. Our data demonstrated that, naringin inhibited cell proliferation, and promoted cell apoptosis and G1 cycle arrest, accompanied by increased p21 and decreased surviving. Based on comprehensive PubMed search for publications on these areas in naringin, we provided a review of what is known about the chemopreventive and anticancer attributes in various models of cancers, etiology, pathophysiology and clinical course and outcomes, and the search was conducted using the databases PubMed, Medline, EMBASE and Web of Science. Naringin has exerted chemopreventive and anticancer attributes in various models of oral, breast, colon, liver, lung, and ovarian cancer. Due to the scarcity of human studies on naringin, this review focuses on the various established activities of naringin in in vitro and in vivo preclinical models, and its potential therapeutic applications using the available knowledge in the literature. Additionally, it also encompasses the pharmacokinetic properties of naringin and its inhibition of CYP isoenzymes, and the subsequent drug interactions. Moreover, further clinical research is evidently needed to provide significant insights into the mechanisms underlying the effects of naringin in humans. The flavonoid naringin is a polyphenolic compound that naturally occurs in citrus. Patients with cancer generally present features of malnutrition and cachexia. Levels of the proinflammatory cytokines tumor necrosis factor α (TNF-α) and interleukin-6 (IL-6) are raised in patients with cancer. These results indicate that naringin could inhibit growth potential of TNBC cells, which suggests naringin might be used as a potential supplement for the prevention and treatment of breast cancer.

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Keywords: Breast cancer, Flavonoid naringin, Chemopreventive, Anticancer.

How to cite this article: Mokhtari, N., 2016. Naringin inhibits tumor growth and useful for the treatment of cancer. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
The therapeutic use of analgesics in patients with advanced chronic liver disease or cirrhosis

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Abstract

The liver as an important organ in the body has many essential functions in physiological processes. Pain management in cirrhotic patients is a major clinical challenge for medical professionals. Unfortunately, there are no concrete guidelines available regarding the administration of analgesics in patients with liver cirrhosis. In this review, we aimed to summarize the available literature and suggest appropriate evidence-based recommendations regarding to administration of these drugs. Based on comprehensive PubMed search for publications on these areas in analgesics, we provided a review of what is known about the therapeutic use of analgesics in patients with liver cirrhosis and the search was conducted using the databases PubMed, Medline, EMBASE and Web of Science. An indexed MEDLINE search was conducted, using keywords "analgesics", "hepatic impairment", "cirrhosis", "acetaminophen or paracetamol", "NSAIDs or nonsteroidal anti-inflammatory drugs", "opioid" for the period of 2000 to 2016. This study showed that safety considerations of nonselective nonsteroidal anti-inflammatory drugs (NSAIDs), selective NSAIDs (COX-2 inhibitors), opioids, acetaminophen, and agents for neuropathic pain in patients with advanced chronic liver disease or cirrhosis. Paracetamol is safe in patients with chronic liver disease, but a reduced dose of 2-3 g/d is recommended for long-term use. Non-steroidal anti-inflammatory drugs (NSAIDs) are best avoided because of the risk of renal impairment, hepatorenal syndrome, and gastrointestinal hemorrhage. Most opioids can have deleterious effects in patients with cirrhosis. They have an increased risk of toxicity and hepatic encephalopathy. They should be administered with lower and less frequent dosing in these patients and be avoided in patients with a history of encephalopathy or addiction to any substance. Management of pain in patients with liver disease raises special concerns. The choice of appropriate analgesic agents requires a thorough understanding of their pharmacokinetics and side effect profiles. As a result pain management in these patients generates considerable misconception among health care professionals, leading under-treatment of pain in this population. Providing concrete guidelines toward the administration of these agents will lead to more efficient and safer pain management in this setting.

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Keywords: Acetaminophen, Adverse drug events, Hepatic cirrhosis, Pain management.

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Non-alcoholic fatty liver disease and childhood obesity: New concepts on progression, metabolic insight and potential treatment targets

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Abstract

Nonalcoholic fatty liver disease (NAFLD) is a multicluster disease ranging from intrahepatic simple steatosis to nonalcoholic steatohepatitis (NASH). During the last decade, a two- to three-fold rise in the rates of obesity and overweight in children over the last 2 decades is probably responsible for the epidemic of NAFLD. This review provides an overview of current and new clinical-histological concepts of pediatric NAFLD, going through possible implications into patho-physiologic and therapeutic perspectives. We did a review of 37 studies identified by searching PubMed, Ovide, Elsevier, ProQuest, IranMedex, SID, and Magiran. All studies included Nonalcoholic fatty liver disease (NAFLD) related to obesity and overweight in children. Emerging data suggest that children with NASH progress to cirrhosis, which may ultimately increase liver-related mortality. More worrisome is the recognition that cardiovascular risk and morbidity in children and adolescents is associated with fatty liver. Pediatric fatty liver disease often displays a histologic pattern distinct from that found in adults. Liver biopsy remains the gold standard for diagnosis of NASH. Non-invasive biomarkers are needed to identify individuals with progressive liver injury. Gradual weight loss through increased regular exercise and a low-fat, low-refined carbohydrate diet appears to be effective. Drug treatments are being developed. The important message is that childhood obesity poses important health problems, including but not limited to potentially severe chronic liver disease. Identification of genetic risks is important, but management will invariably require changes in environmental factors. In addition to individual treatment, a multifaceted, societal initiative is required for solving the childhood obesity epidemic. Targeted therapies to improve liver histology and metabolic abnormalities associated with fatty liver are needed. Public health awareness and intervention are needed to promote healthy diet, exercise, and lifestyle modifications to prevent and reduce the burden of disease in the community. Results of investigations elucidated the histological features and genetic background that characterize paediatric NAFLD; the closed association of disease development with the cross-talk between different cells and organs; limitations of diagnostic tools borrowed from adult studies and the need of further clinical trial.

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Keywords: Nonalcoholic fatty liver disease (NAFLD), Non-alcoholic steatohepatitis, Obesity, Metabolic syndrome.

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Anticancer activity of thymoquinone: A promising anti-cancer drug from natural sources

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Abstract

Thymoquinone (TQ) is the bioactive phytochemical constituent of the seed oil of Nigella sativa. The purpose of this review was to highlight the potential of TQ as an anticancer agent and the chances of this compound in the clinical treatment of cancer, with special attention on breast cancer treatment. We searched the literature for published randomized controlled trials (RCTs) and cluster RCTs using medical databases including PubMed/MEDLINE, CINAHL, EMBASE, and ISI Web of Knowledge, and through WHO regional databases. Thymoquinone (TQ), an active ingredient of Nigella sativa, has been reported to exhibit anti-oxidant, anti-inflammatory and anti-tumor activities through mechanism(s) that is not fully understood. In this study, we report the anticancer effects of TQ on breast cancer cells, and its potential effect on the PPAR-γ activation pathway. We found that TQ exerted strong anti-proliferative effect in breast cancer cells and, when combined with doxorubicin and 5-fluorouracil, increased cytotoxicity. TQ was found to increase sub-G1 accumulation and annexin-V positive staining, indicating apoptotic induction.

Nigella sativa and its active constituent thymoquinone (TQ) have long been used in traditional medicine for treating various conditions related to the respiratory and gastrointestinal systems as well as breast, colorectal, gastric, hepatic, pancreatic cancers and leukemia. TQ has anti-inflammatory effects, and it inhibits tumor cell proliferation through modulation of apoptosis signaling, inhibition of angiogenesis, and cell cycle arrest. Chemosensitization by TQ is mostly limited to in vitro studies, and it has potential in therapeutic strategy for cancer. Therefore, it is appropriate that TQ should move from testing on the bench to clinical experiments. TQ has been documented to possess chemo-preventive and chemotherapeutic antitumor effects. TQ, modulates signaling pathways that are key to cancer progression, and enhances the anticancer potential of clinical drugs while reducing their toxic side effects.

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Keywords: Breast cancer, Drug delivery, Pharmacokinetics, Thymoquinone.

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Gastroprotective effect of Hydro-Alcoholic extract and Sodden of Spinacia Oleracea (HESO) on Hcl/Ethanol-Induced gastric damage in rats

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Abstract

Introduction: Gastritis is the most common damages in gastrointestinal tract. The current common drugs are useful for treatment of gastritis with some side effects. So, new research more concentrated on medicinal plants due to plants are the richest resources of new drugs for traditional and modern systems of medicine and play an important role in human health with less side effects. The aim of this study was to evaluate the Gastroprotective effect of Hydro-Alcoholic extract and Sodden of Spinacia Oleracea (HESO) on Hcl/Ethanol-Induced gastric damage in rats. Materials and methods: Aerial parts of Spinacia Oleracea was collected and extraction carried out by maceration method with ethanol-water 70% (V/V) solveny at room temperature. The rats were divided into five groups of six each: Group I–Negative control received water (1ml/kg,B.W), Group II–Positive control received Hcl/Ethanol (1ml/kg, B.W), Group III–Treatment 1 received Hcl/Ethanol (1ml/kg, B.W)+Spinacea Olerace sodden (1ml/kg, B.W), Group IV-Treatment 2 received Hcl/Ethanol (1ml/kg, B.W)+HESO (250 mg/kg,B.W), Group V-Treatment 3 receivedHcl/Ethanol (1ml/kg, B.W)+HESO (500 mg/kg,B.W), In groups IV and V the HESO administered orally 4 days prior to induction of gastric damage, then prescription continued by the HESO (250, 500mg/kg,B.W) and Hcl/Ethanol (1ml/kg,B.W) simultaneously for 4 days later, except group III which received Spinacea Olerace Sodden (1ml/kg, B.W) and Hcl/Ethanol (1ml/kg, B.W) simultaneously. Animals were sacrificed under light ether anesthesia after 8 days. Blood was collected by heart puncture for, malondialdehyde (MDA) as a product of lipid peroxidation and nitric oxide radical (NO\(^\cdot\)) and reduced glutathione (GSH) superoxide dismutase (SOD) and catalase (CAT) and reduced glutathione were measured in serum. Results: Levels of antioxidant enzymes (e.g. SOD and CAT) and GSH decreased as compared to normal control group. MDA and NO radical were increased in positive control group. Although SOD, CAT, GSH, MDA and NO radical have been significantly restored toward normal by HESO (P<0.05). The HESO proved to display a dosedependent gastroprotective effect. Conclusion: The HESO displayed significant protective effect on Hcl/Ethanolinducedgastric damage in rats which may be related to the antioxidant activity of the HESO.

Keywords: Gastric damage, Ethanol, Hydrochloric acid, Sodden and Hydro-Alcoholic extract of Spinacia Oleracea.

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Factors affecting on stress, anxiety and depression in pregnant women at risk of preterm delivery

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Abstract

Introduction: Preterm birth has increased from 6.7% in 1375 to 16.4% in 1382 in Iran. It is a major cause of perinatal morbidity and mortality. Based on various investigations factors such as stress, anxiety and depression influence preterm delivery. This study was designed to determine factors affecting on stress, anxiety and depression in pregnant women at risk of preterm delivery. Materials and methods: In this correlational, cross-sectional study was conducted on 194 pregnant women at risk of preterm delivery. The instruments that used in this study consist of Holbrook screening of preterm labor, demographic and obstetric and dass 21. Data were analyzed by descriptive statistic and Pearson correlation. Results: The results of this study show that there is a direct significant correlation between stress, anxiety and depression (P<0.01). As well as, there is a direct significant correlation between depression and gravid (P=0.001), parity (P=0.000), history of preterm delivery (P=0.002), age (P=0.003) and there is an inverse significant correlation between depression and education (P=0.011) and family income (P=0.044). There is a direct significant correlation between stress and gravid (P=0.027), parity (P=0.029) and history of preterm delivery (P=0.041). But there is no significant correlation between stress and age, education, family income. Also, there is no significant correlation between anxiety and gravid, parity, history of preterm delivery, age, education and family income (P>0.05). Conclusion: The results of this study represent that demographic and obstetric factors influence on the stress and depression during pregnancy. So, attention to the demographic and obstetric factors of pregnant women and their needs is recommended.

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Keywords: Stress, Anxiety, Depression, Preterm delivery.

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The effect of educational intervention based on Orem's theory on self-care behaviors of pregnant women at risk of preterm delivery: A clinical trial

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Abstract

Introduction: Preterm birth has increased from 6.7% in 1375 to 16.4% in 1382 in Iran. Based on various investigations, self-care influences on preterm delivery. One of the most complete theories in the field of self-care is the Orem's self-care. According to this theory, nursing systems support the power of patient’s self-care in order to prepare them for decision making, choosing method and using knowledge and skills. This study was designed to determine the effect of educational intervention based on Orem's theory on self-care behaviors of pregnant women at risk of preterm delivery. Materials and methods: 150 women at risk of preterm delivery between 24-26 weeks were selected based on a questionnaire of screening of preterm labor. Then, they were randomly allocated into two groups. Researcher educated the intervention group individually and face-to-face in three 45-60 minutes sessions in three consecutive weeks. The instruments that used in this study consist of Holbrook screening of preterm labor, demographic and obstetric and prenatal care measures Hart (retrieve from Orem's self-care). Data were analyzed using the spss 16, chi-square and independent T-test. Results: The results indicated no significant difference between scores of prenatal self-care in groups before educational intervention (P=0.553). But after educational intervention, significant difference was between groups (P=0.000). Conclusion: Based on the results of educational interventions in increasing the prenatal self-care, it is recommended that women at risk of preterm birth will be identified in health-care centers and they will be educated prenatal self-care based on Orem's theory.

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Keywords: Orem's theory, Self-care behaviors, Preterm delivery.

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Epidemiology of depression in adolescent girls of Masjed Soleyman, Southwest Iran

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Abstract

Introduction: Depression word is described wide range of low affect, including sadness to suicidal pathological modes. Depression is one of the most common mental disorders in the world. The World Health Organization has reported that 21 million people worldwide suffer from depression. One of the most common and most disabling problems in youth mental is depression and in terms of the extent of the spread of the common it is remembered as cold. This study aimed to assess epidemiology of depression in adolescent girls of Masjed Soleyman. Materials and methods: This cross-sectional study using cluster sampling on middle school students in Masjed Soleyman had done. To collect the data, depression in children and adolescents (CADs) Janbozorgi and demographic questionnaire were used. 18-spss software for data analysis and descriptive statistics and independent t-test, ANOVA and Pearson correlation coefficient were used. Results: In this study, 168 students were enrolled with a mean age of 1.09 ± 13.5. 85.1 percent of the female students had some degree of depression. The mean depression score was 7.67 ± 11.16, indicating moderate depression in them. In general, the average depression score and father's occupation, type of school and non-school recreation classes, number of family members, mother's occupation, death of family members and close friends the relationship was statistically significant (p<0.05). Conclusions: Participation in recreational classes, death of family members, few friends, government jobs parent households and non-profit school, some students were more related causes depression that requires more attention and provide appropriate solutions are. Due to the negative impact depression on the future of the country, further studies and strategies and psychosocial support necessary to reduce their depression seems.

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Keywords: Depression, Factors associated with depression, Adolescents, Girls.

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Prevalence of beta-thalassemia gene mutations in Iran

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Abstract

Beta thalassemia is one of the autosomal recessive diseases that related to synthesis disorder of beta globin chain. It is caused by any of the more than 200 mutations in the β-globin gene. This study aimed to review prevalence of beta-thalassemia gene mutations in Iran. This review article by searching on Google scholar search engines and databases magiran, Sid, PubMed and iranmedex by keyword Beta thalassemia, gene, gene mutation and beta chain between 1995 and 2015 was done. The results showed that mutations in the IVS II-1 (G> A) is the most common gene mutation. Also, mutations in codon mutation 36.37 and IVS I-110, codon 30, Fr8-9, codon 5 also had high prevalence. Gene mutations were different in the north and south of the country. That common gene mutation in codon 36.37 and in the province of Khuzestan IVSII-1G> A was observed. The gene mutation in Tabriz, West Azerbaijan and Kurdistan were similar to Mazandaran. Providing such information could help to improve screening programs and prevention of birth with beta thalassemia. According to the same gene mutations in some provinces of the country, further investigation is needed in this regard.

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Keywords: Beta thalassemia, Gene, Gene mutation, Beta chain.

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Survey the positive predictive value of laboratory findings in diagnosis of acute cholecystitis

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Abstract

Introduction: One of the most common surgical problems was acute cholecystitis that accurate and timely diagnosis to start of treatment and decreased mortality are needed. Due to contradictory results regarding diagnostic methods in acute cholecystitis, this study investigated the positive predictive value of laboratory findings in diagnosis of acute cholecystitis. Materials and methods: This cross-sectional study using all people records that had cholecystectomy with diagnosis of acute cholecystitis in Dezful large hospital in 1393 was performed. Laboratory findings included the number of leukocytes, levels of AST, ALT, alkaline phosphatase, direct and indirect bilirubin that compared with pathological findings as definitive diagnosis. Results: In this study 67 patient’s records with a mean age of 47.58 ± 17.36 years, 23 patients (%34.3) were male and 44 patients (%65.7) were female. Positive predictive value or sensitivity was %56.1 for WBC, %34.2 for alkaline phosphatase, %37.5 for AST, ALT (50%), direct bilirubin (%77.4) and % 62.1 indirect bilirubin. There was a direct correlation between age and the amount of direct bilirubin that was statistically significant (p=0.03) (r=0.37). But there was no significant correlation between age and other existing tests (P> 0/05). Conclusion: Due to the ease of access to liver enzymes and their values obtained in this study, they can guide us to the cost – effective.

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Keywords: Cholecystitis, Positive prediction, Detection, Sensitivity.

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Investigate diagnostic value of laboratory finding in acute appendicitis: A systematic review

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Abstract

Appendicitis is a common urgent surgical operation. Since early diagnosis and treatment of appendicitis is necessary and also some disease mimic its clinical manifestation and rate of negative appendectomy was high (%15-30), so surgeons were trying to increase the accuracy of diagnosis of appendicitis by using laboratory facilities. The main aims of this study were to investigation value of diagnostic findings in acute appendicitis. The review through searching in Google scholar search engine and database magiran, Sid, PubMed and iranmedex with keyword appendicitis, sensitivity, specificity and appendectomy between 1990 and 2015 was performed. The results of various studies show that the sensitivity and of WBC was from %88.6 to %98.1 and its specificity was %26.4 to %61.5. CRP sensitivity from %76 to %84.8 and its specificity from 50 to %73.4 have been reported. The sensitivity of shift to left was %90.5, and sensitivity and specificity of neutrophil and ESR was observed %93.3 and %19.2, %73.4 and %40.6 respectively. Some studies have shown that the combination of WBC and CRP tests can be helpful. The Alvarado criteria performance in grades 8 and below was lower than clinical judgment alone based on tenderness. A study showed that the revised criteria Alvarado in the diagnosis of acute appendicitis is not effective. Some other studies recommended using ultrasound method in the diagnosis of acute appendicitis due to %66 sensitivity and 94% specificity. Due to the high percentage of negative appendectomy in most studies seem to still diagnostic tests have not been defined as a standard scoring system. More researches that consider all diagnostic tests can improve diagnosis, avoid the imposition of unnecessary appendectomy and thereby result reducing in health care costs.

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Keywords: Appendicitis, Diagnosis, Appendectomy, Sensitivity, Specificity.

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The value of diagnostic findings in acute pancreatitis

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Abstract

Acute pancreatitis is a common cause of abdominal pain, without any characteristic signs, symptoms or a gold standard diagnostic modality. This study aimed to review the value of diagnostic findings in acute pancreatitis. This review article by searching on Google scholar search engines and databases magiran, Sid, PubMed and iranmedex by keyword pancreatitis, pancreas, diagnosis and laboratory findings between 1990 and 2015 was done. The results showed that urine trypsinogen with a sensitivity of 80% and specificity of 90 percent, Amylase with sensitivity and specificity of 82.6% and 75% and lipase with 76 and 85.7 percent are used in the diagnosis of pancreatitis. The low level of bicarbonate, and IL-17 were valuable in the diagnosis of pancreatitis. Serum levels C-reactive protein and interleukin-15 valuable had shown in pancreatitis and the sensitivity and specificity of 92.3 and 78.8 respectively 40 and 48 percent, respectively. But in foreign studies results regarding the use of enzymes, Interleukin 6 and 8 there was no consensus. They also identified CRP and urinary markers as a valuable indicator. According to the results of different studies using markers such as C-reactive protein and urine trypsinogen pancreatitis would be useful.

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Keywords: Pancreatitis, Pancreas, Diagnosis, Laboratory findings.

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The relationship between spiritual well-being and family cohesion in patients with Thalassemia Major

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Abstract

Introduction: Thalassemia Major is a chronic disease caused by the absence or deficiency of one or more polypeptide chains of hemoglobin, which is transmitted from generation to generation. As a humanistic dimension of people, spirituality has an effective role in improving and meeting the spiritual needs of patients and their families. Thus, it has gained increasing attention as an essential element of clinical care. Materials and methods: This cross-sectional study was conducted on 101 patients with thalassemia major who were selected using purposive sampling from thalassemia major wards of Dezful Large Hospital in 2015. Data were collected by three questionnaires: Demographic data, Standard spiritual well-being scale by Daaleman and Frey and Moos Family Cohesion Scale. The data were analyzed using SPSS version 18 statistical test, Pearson correlation and linear regression with a significance level of P<0.05. Results: The sample included 101 patients with beta thalassemia major with an average age of 5.4 ± 23.22. Among these, 60.4% were male and the rest were female; and 82.2% were single, and the rest were married. The average score of spiritual well-being and self-efficacy subscales were 9.66 ± 34.58 and 14.68, respectively; which indicates the average level of these variables. Linear regression test results also showed that there was a statistically significant (P<0.05) relationship between spiritual well-being and family cohesion (B=0.25) and between self-efficacy and family cohesion (B=0.24); but there was no significant relationship between life scheme and family cohesion (B=0.16) (P=0.10). Conclusion: In this study it was observed that a significant direct correlation exists between spiritual well-being and family cohesion. The role of the family as the main supportive institution against the challenges of the life is undeniable. Hence, by increasing the level of spiritual well-being of the patients some steps can be taken to promote the cohesion of patients’ families in order to decrease their spiritual and physical problems.

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Keywords: Spiritual well-being, Spirituality, Family cohesion, Thalassemia Major.

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Investigate the prevalence asthma and related symptoms in school-aged children admitted to hospital

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Abstract

Asthma is one of the most common chronic lung diseases in children that makes frequent reference to the hospital and absence from school. Despite recurrent symptoms of asthma, cough, shortness of breath and chest snoring determined. Also, in recent decades, its prevalence has increased sharply. Therefore, this study aimed to Investigate the prevalence asthma and related symptoms in school-aged children admitted to the hospital. This scientific review sites with searching Google scholar, magiran, Mbais, Sid, PubMed and iranmedex with keywords asthma, prevalence, risk factors, primary school children was conducted during 1996 and 2016. Studies show that a history of asthma doctors to 3%, an asthma attack during the life of up to 14.7%, asthma in the last 12 months between 5 and 7 percent, coughing and shortness of breath at night to 13 percent and cough during exercise between 14 percent 18 among the students was reported. Between personal and family history of allergy and asthma attacks showed no significant recurrence as well as a history of sinusitis and asthma attacks in case of disease in first degree relatives and in patients with poor treatment adherence has been more than. Among risk factors, prevalence of active asthma in the family with a similar disease, history of respiratory infections in early childhood and paternal smoking had a direct relationship. Most doctors instead of beta agonists inhaled or injection of aminophylline have used in first-line therapy. Only 14% of patients used in the first step of salbutamol inhaler. It seems that lack of access to inhaled drugs and assistive devices needed to prescribe these drugs, lack of awareness of physicians about new programs of treatment, the lack of parental awareness and concern inhaler forms of consumption, the problem is asthmatic children fundamental is. Therefore, it is necessary to be done to solve the problem.

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Keywords: Asthma, Prevalence, Risk factors, Primary school children.

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Evaluation of prevalence of, symptoms and causes poisoning scorpion sting in hospital

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Abstract

Scorpion bites are a public health problem in different parts of the world. Iran according to the type of climate and climate are very rich in terms of species of arthropods, especially scorpions, and many species of scorpions are among the countries that it is particularly dangerous types. Generally 15-10 percent of bites and scorpion stings in recent decades are allocated. Therefore, this study aimed to evaluation of prevalence of, symptoms and causes scorpion poisoning were admitted to hospital. This scientific review sites with searching Google scholar, magiran, Sid, Mbais, PubMed and iranmedex with keywords scorpion sting, symptoms, treatment, poisoning from 1998 to 2016 was conducted. Studies show that the majority of scorpion stings in your arms and legs to 50.8 percent from 30 to 33.3 percent. Most bites are in the spring and summer. The most common symptoms of pain are up to 89% and then neurological symptoms and anxiety by 69 percent. Other symptoms include cardiovascular problems and heart rate between 44 to 47% and respiratory symptoms and asthma up to 59 percent. Among the symptoms of abnormal laboratory findings was the most hematuria to 67 percent. In most studies, most bites in those who slept outside on the ground and held around brushwood and firewood. Most people in the local close, motionless, local cutting and cleaning the bite was done as routine medical treatment and drugs used, including painkillers, antihistamines and specific drugs to solve problems NIFEDIPIN or atropine. The main causes of mortality as well as encephalopathy and myocarditis in children scorpion stings were reported. According to the results of the studies can be said to preventive factors such as keeping firewood and brushwood of living area, no sleeping out in the open seams of buildings, repair of buildings can greatly reduce the number of scorpion sting. Also seems to reduce health care information and knowledge are associated with scorpion sting treatment. And it is better that several studies done in this area to assess better various types of scorpion stings and related marks identified it.

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Keywords: Scorpion bite, Symptoms, Treatment, Poisoning.

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The prevalence of congenital heart disease in newborns hospitalized in neonatal department

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Abstract

Patients with congenital heart disease postnatal growth failure and severe growth retardation in these patients may be FTT continuity even after surgery. Due to the fact that congenital heart disease is the most common congenital malformations in infants. Therefore, this study aimed to assess the prevalence of congenital heart disease in newborns hospitalized in neonatal ward of the hospital. This scientific review sites by searching Google scholar, magiran, Sid, PubMed, Mbais and iranmedex by keyword newborns, congenital heart disease, the prevalence was conducted during 1996 and 2016. Studies show that between 40 to 44 percent of ventricular sepals defect and atrial sepals defect and 21 percent were the most common congenital malformations of the heart. History of congenital heart disease in parents up 10.3 percent to 9.3 percent of diabetes in mothers and babies between 4 and 6.5 percent of anomalies, including cleft lip and palate had other members. In terms of birth weight, up to 73% by weight in the normal range, and 19 percent were large and small for gestational age between 4 and 5.2 percent; respectively. Newborns with congenital heart disease weight loss are common in all patients. Non-cyanotic heart disease with the highest prevalence of disease and non-cyanotic shunt without shunt had the lowest prevalence of heart. The incidence of congenital heart disease in newborns of diabetic mothers before pregnancy and gestational diabetes was higher. In most studies, the Chi-square test showed that the relationship between selected variables and there is no significant congenital heart disease. According to studies showing that infants of diabetic mothers are at increased risk of congenital heart disease and echocardiography to screen for the disease in infants of diabetic mothers is recommended. As well as early intervention to prevent and treat malnutrition, heart at an early age provide the basis for corrective surgery and thus be more successful at an early age.

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Keywords: Newborns, Congenital heart disease, Prevalence.

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Evaluation of maternal and fetal complications arising from pregnancy trauma

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Abstract

Trauma is one of the complications of pregnancy and prenatal mortality is one of the factors considered. What is trauma caused by accidents of vehicles and can lead to death from suicide and fights fetal and maternal life-threatening events. Therefore, this study aimed to assess fetal and maternal complications of pregnancy trauma. This scientific review sites by searching Google scholar, magiran, Sid, PubMed and iranmedex by keyword maternal, fetal complications, trauma during pregnancy was conducted from 1996 to 2016. Studies show that up to 66.6%. In terms of gestational age women ranging in age from 20 to 36 weeks old. No statistically significant association was found between maternal and fetal complications, gestational age. The most common type of blunt trauma cases were between 92 to 96.7 percent and the cause of trauma in 61.7% of cases was accidents. Up to 15.5% of maternal complications such as preterm delivery, placental abruption need for cesarean and 10 to 13.3 percent fetal complications including miscarriage, heart rate fall, premature birth and intrauterine death. No statistically significant association was found between the trauma and maternal and fetal complications. No statistically significant association was found between maternal and fetal complications, gestational age. The most common complication is preterm labor. The most common symptom is abdominal pain and abdominal tenderness. Between clinical symptoms and report the presence of free fluid abdominal CT scan showed no significant difference. Due to the importance of trauma during pregnancy and the trauma this period is an important challenge in the emergency departments of hospitals, and one of the most common causes of maternal mortality and infant during pregnancy creates, measures to increase the safety level is recommended for pregnant women.

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Keywords: Mother complications, Fetus complications, Pregnancy.

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Investigating the status patients with chest injuries referred to trauma centers

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Abstract

Trauma is the most common cause of death for people aged 1 to 44 years. Trauma and its mortality worldwide, which is caused the loss of life years due to disability. With extreme care and emergency implementation of deaths and complications can be caused by trauma to the chest trauma prevented. Therefore, this study aimed to investigate the status patients with chest injuries was referred to trauma centers. This scientific review sites by searching Google scholar, magiran, Sid, PubMed and iranmedex by keyword chest trauma, injury, of traffic accidents, trauma during 1996 to 2016 was conducted. Studies have indicated that chest trauma is very common in trauma patients and majority of patients who were hospitalized due to chest trauma in male adults aged 12 to 69 years old, which in most cases are traumatic car accident had occurred. To 83 percent had blunt trauma and 10 to 22 were penetrating. Up to 55% of chest trauma was no damage and the treatment to conservative treatment was only 36%. The most common chest wall surface damage in patients with thoracic trauma. Most traumas from car accidents and the least frequent cause were stabbing. The most common symptom is pain and tenderness, chest injuries and the most common cause of death was reported hypovolemia shock. Considering that accidents in different parts of the body trauma factor contributing their injured, better fundamental measures to reform social, cultural and carried on driving and improve transportation. The most common cause of death in traumatic injuries when he was hypovolemic, better than a quick blood transfusion was unaware of them when you visit emergency centers up to prevent people from dying too.

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Keywords: Chest trauma, Injury, Of traffic accidents, Trauma.

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Investigate the causes of prevalence respiratory distress syndrome in premature infants in the NICU babies

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Abstract

Neonatal respiratory distress syndrome, a major cause of morbidity and mortality in premature neonates with respiratory disease and its complications. Also one of the most common causes of mortality and morbidity in the neonatal period considered. This study aimed to investigate the causes of prevalence respiratory distress syndrome in premature newborns in the NICU neonates. This scientific review sites by searching Google scholar, magiran, Sid, PubMed and iranmedex with keywords respiratory distress syndrome, surfactant, premature infants in the NICU was conducted from 1996 to 2016. Studies show that up to 75% of respiratory distress syndrome of respiratory distress in infants between 12 to 13.5 percent had meconium aspiration and up to 5/11% had pneumonia. Up to 50 percent of babies were connected to the ventilator that had a worse prognosis and between 20 and 23% of them died. Hyaline membrane between 42 to 45 percent, transient tachypnea of newborn between 9 to 14 percent to 20.2 percent and pneumonia are the most common causes of respiratory distress in infants were reported. Pulmonary involvement was higher in the treatment group and at the same time of the collapse, as well as bilateral lung involvement is a significant difference between the two groups. The results of aspiration, diaphragmatic hernia, fistula between the lungs and trachea, lung hypoplasia, choanal atresia pneumothorax and other reasons leading to respiratory distress in infants. The data also indicate a significant relationship between the morbidity and preterm of them. Since preterm infants and neonatal infections, an important factor in increasing the number of infant distress and increasing incidence of infant mortality are looking for. Mother prevent preterm labor with rest, medication can Tocolysis including useful strategies to control the disorder.

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Keywords: Respiratory distress syndrome, Surfactant, Premature infants, Part NICU.

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Comparative study of quality of life in patients with chronic obstructive pulmonary disease with healthy people

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Abstract

Chronic obstructive pulmonary disease the fourth leading cause of death and a leading cause of chronic disability in the world. Due to the nature of the disease and effective treatment for patients with chronic and progressive disease is not available and their quality of life can be affected in different aspects of it. Therefore, this study aimed to compare the quality of life in patients with chronic obstructive pulmonary disease with healthy people. This scientific review sites by searching Google scholar, magiran, Sid, PubMed and iranmedex with chronic obstructive pulmonary disease keywords, quality of life, mental health from 1998 to 2016 was conducted. The results showed that 5.23% of patients suffer from varying degrees of depression, so 9/12% of these patients had severe depression or depression too. Between age and duration of diabetes correlated with quality of life there. The mean quality of life score and mean scores of the five aspects of the patient’s quality of life, independent living, social relations, physical sensations and well-being in patients with COPD were significantly lower than healthy people. The relationship between depression and level of education were inconsistent. The activities of daily living also showed a significant increase. First and air pressure per second forced expiratory vital capacity were not significantly changed drastically. One common problem in patients with COPD, depression, reducing their quality of life, and timely action should be taken by physicians. In addition to the patients’ disease COPD, other aspects of one’s life and thus affect the quality of life that should be a serious intervention.

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Keywords: Chronic obstructive pulmonary disease, Quality of life, Mental health.

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Scenedesmus microalgae improves immune system and growth performance parameters in broiler chicks: In comparison with virginiamycin antibiotic

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Abstract

Introduction: Antibiotics usually use for improving the growth performance in broiler chicks and on the other hand they create antibiotic resistance. It is well known that microalgae can help to growth performance in broiler chicks. This study was conducted to compare the effects of Scenedesmus microalgae (SM) and virginiamycin on growth performance and immune response of broilers. Materials and methods: Birds were randomly assigned to each of 5 dietary treatments. Treatments consisted of: T1 (basal diet (BD) + tap water), T2 (BD + (50% tap water+50% SM), T3 (BD + (25% tap water+75% SM), T4 (BD + (0% tap water+100% SM) and T5 (BD + 25mg Virginamycin/kg diet) with 4 replicate cages of 10 birds each. The performance was recorded at 10, 24 and 42 days. Humoral immunity was measured through i.v. injection of sheep red blood cells followed by assay of serum for antibody titers in primary and secondary responses (days 28 and 42). Results: The birds receiving T3 and T4 had a higher feed intake compared with control and antibiotic groups at 1-10 d. Water replacement by 100% SM increased body weight and reduced feed conversion ratio in broilers. Inclusion of 100% SM increased antibody titer in primary and secondary responses compared to that of control group (P<0.05). Conclusion: It was concluded that water replacement at high levels (75 and 100%) by SM can improve growth performance, immune responses of broiler chickens.

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Keywords: Body weight, Broiler, Scenedesmus microalgae, SRBC, Virginiamycin.

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Effects of *Scenedesmus* microalgae and virginiamycin antibiotic on blood parameters of broiler chicks

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**Abstract**

**Introduction:** It is well shown that microalgae have positive effects on blood parameters. They can reduce the serum concentration of lipids and glucose. This study was done to investigate the effects of *Scenedesmus* microalgae on some blood parameters of broilers. **Materials and methods:** Birds were randomly assigned to each of 5 dietary treatments. Treatments consisted of: T1 (basal diet (BD)+ tap water), T2 (BD+ (50% tap water+ 50% SM), T3 (BD + (25% tap water +75% SM), T4 (BD + (0% tap water + 100% SM) and T5 (BD + 25mg Virginamycin/kg diet) with 4 replicate cages of 10 birds each. Birds were bled to determine some blood biochemical parameters at the end of the experiment (day 42). **Results:** The birds receiving T4 diet had higher white blood cell concentrations, and lower serum content of triglycerides and cholesterol compared with the control group (P<0.05). **Conclusion:** It was concluded that *Scenedesmus* microalgae, at high levels, can affect white blood cells, triglycerides and cholesterol.

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**Keywords:** Scenedesmus microalgae, Triglycerides content, White blood cell.

**How to cite this article:** Beheshti, S., Ziaei, N., Ghoreishi, S.M., Ganjian Khenari, A., 2016. Effects of *Scenedesmus* microalgae and virginiamycin antibiotic on blood parameters of broiler chicks. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Role of hydrogen sulfide in health and disorder

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Abstract

In the past years biomedical researchers have recognized, H₂S with Co and No are the main elements of gas transmitters. Despite the fact that, H₂S has an environmental toxic effect, many useful effects of that on human being’s health is well documented. This gas dose dependently has different effects, so has got the double faced nature, which means that, in low concentrations it might be useful for the body and it has antioxidant and cardioprotective effects, whereas in high qualities causes cytotoxic effects and stimulate OS. H₂S improves cardiac function and cardiac complications in different pathogenic conditions, such as myocardial I/R injury, myocardial infarction, cardiac arrhythmia, cardiac hypertrophy, myocardial fibrosis, and heart failure, whereas this gas is directly linked to the initiation and development of periodontal diseases. The Current research is focusing on a different biologic aspect of H₂S as a gas transmitter, including its chemical structure, its effect on health and disease treatment, and disorders caused by H₂S. This review is trying to highlight the last findings on physiological and patophysiological roles of this gas and accumulating if it has a comprehensible resource.

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Keywords: Hydrogen sulfide, Cardioprotective effects, Gas transmitter.

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Production and evaluation of physical and chemical characteristics of low-calorie cake containing stevia as a sugar substitute

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Abstract

Introduction: Cake flour products, among different age groups contain its own fans. But their use due to the high sugar and calorie content is restricted to the obese and diabetes people. So by replacing sucrose with carbohydrates with low digestibility and natural sweeteners, while calorie can be reduced, tooth decay can be prevented. Materials and methods: In this study, the effect of replacing sugar with stevia sweetener was used in the formulation of the cake. In addition to sugar’s sweeteners, suger has a role in creating a structure of cake's sponge, so to evaluate the texture, the filling of isomalt and maltodextrins are also used. Results: The results showed that, with increasing replacement of sugar with stevia, pH and cake's moisture increased, but acidity, peroxide, reducing sugars, and pore volume decreased. There were no differences in Protein, cakes ash levels by 95 percent. By increasing stevia to the cake's formulation, cake's shell became clearer (p<0/05). By increasing shelf life of the darker skin and tissue tightening was more significant. ISO fillers malt flavor and texture, porosity and better than filling maltodextrins disastrous appearance. Statistical analysis of the results of the investigation, the 95% confidence level showed that ten percent of the filler isomalt sugar with stevia and replaced, no significant difference can be found close to the characteristics of the control cake. Conclusion: By replacing 25% of isomalt sugar cake with stevia and features can be found close to the characteristics of the control cake.

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Keywords: Stevia, Isomalt, Texture analysis, Sponge cake, Maltodextrin.

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Measuring toxin zearalenone from wheat the city superior in wheat production in Iran

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Abstract

Introduction: Zearalenone is a mycotoxin compound produced mainly by the Fusarium species of fungi which is present in several types of foods. Zearalenone (ZEA), a widely distributed oestrogenic fusariotoxin, constitutes a potential risk for human and animal health. Mycotoxins have adverse effects including infertility, abortion and cancer. Zearalenone (ZEA) is estrogenic mycotoxin of fusarium spp that grows on cereals (wheat). Fusarium species are commonly associated with cereals can produce several secondary toxic metabolites. Materilas and methods: In the samples collected from city superior manufacturer and the collection and preparation of the cell extracts by ELISA Kits and Ryda Screen Zearalenone analysis of the samples produced Zearalenone analyzed. Results: Thus Germy of the city of Ardabil with a amount of 19.84 ppb and Kordkuy of the city of Golestan with the least amount of zearalenone by 11.14 ppb have been defined respectively. Conclusion: The aim of this study was to determine the contamination of wheat grain in one of the risk factors (toxin zearalenone) in Superior city in Iran.

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Keywords: Zearalenone, Wheat, City of Iran.

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Isolation, identification and serotyping uropathogenic escherchia coli siderophore manufacturer of hospital patients and health care centers in Bandare Anzali

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Abstract

Introduction: From the viewpoint of Microbiology, urinary tract infection, there is a time, Pathogenic microorganisms are in the urine, bladder and be found in the prostate, or kidney. In the most cases, growth of more than 105 Microorganisms per ml of the sample middle of the urine is indicative of infection. But in cases of marked, number of 104-102 bacteria in each ml of urine also indicative of infection. Symptoms of dysuria, emergency and urination with bacterial infection a sizeable not associated acute bladder syndrome called. The aim of this study was to determine the cases of urinary tract infection. Identification of strain UPEC, serotyping and antimicrobial resistance, reviews of the siderophore production and hemolysin and their relations with the ability to create an infection, in the strain Escherichia coli isolated from these was patients. Materials and methods: In order to separating and identification of the bacterial agent UPEC a urinary tract infection and determination of age release and gender people suffering in a prospective study number of 200 sample was taken from the middle of the urine random sampling method and simple was analysis, test of sensitivity to various antibiotics with the method of Kirby-Bayer namely put the disc on the agar containing 21 isolation UPEC isolated from these patients by age range 86-1 year and serotyping agglutination test method performed on the Lam and the hemolysin production on sheep blood agar with Balad 5% studied. Alsosiderophore production in isolation, are also examined. All results with the use of the SPSS software analytics. Results: Majority of isolated UPEC urinary tract pathogens belonging to 0157, O126, O1, O20, O25, O44, O15, O55, O64, O26, O114 was serotypes. Majority of the isolated antibiotics, ampicillin, cotrimoxazole and cefixime and cephalaxin most of the resistance and to the amikacin and gentamicin and ciprofloxacin, tetracycline, maximum sensitivity. Conclusion: This study showed serotype O25 maximum number of isolated cases will be included and so many other serotypes included O157, O26, O64, O15, O126, O114, O55, O1, O44, O20.

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Keywords: Urinary tract infection, UPEC Escherichia coli, Serotype, Antimicrobial susceptibility, Siderophore.

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Evaluation of anticancer activity of vanadium (v) Schiff base on MKN-45 (human gastric cancer) cell line

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Abstract

Introduction: Gastric cancer (GC) results from the accumulation of numerous genetic and epigenetic alterations in disrupt the cell cycle and the balance between cell proliferation and cell death. Vanadium, as a dietary micronutrient, is yet to be established as an essential part of the human diet. Multiple biochemical and molecular actions of vanadium have been implicated in its inhibitory effects on various tumor cells of human origin. The active nitrogen and oxygen species may induce some damage to the human body. Antioxidants agents such as complex of vanadium are vital substances, which possess the ability to protect the body from damage caused by free radical induced oxidative stress. The objectives of this study were to evaluate Prosopis farcta as a source of natural anticancer agent using hydroalcoholic extracting solvent to determine their anticancer capacities of fruit part on MKN-45 (human gastric cancer) cell line. Materials and methods: We have 5000 cells of MKN-45 cell line in 96 cell plate. Then the cells were treated with concentrations of 50, 10 and 1 micrograms of complex Schiff base ligand vanadium (v). After 24, 48 and 72 hours, the cells were separated by trypsin of the plate. The survival rate and viability of the cells were evaluated by trypan blue staining and MTT test. Results: In this experiment, we found that with increasing concentration and with time, the cell survival reduced, this could be due to activate the apoptosis pathways by Schiff base of vanadium, that can be used potentially as a readily accessible source of natural anticancer, but further work is necessary to determine more clarified. Conclusion: Anticancer activities of polyphenols and flavonoids have been suggested to exert beneficial pharmacological effects on some diseases and cancers as well.

How to cite this article: Dejamfekr, M., Khaleghian, A., 2016. Evaluation of anticancer activity of vanadium (v) Schiff base on MKN-45 (human gastric cancer) cell line. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Evaluation of the antibacterial effects of *Capsicum annuum* hydroalcoholic extract in vitro condition

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Abstract

**Introduction:** In the present study antibacterial effects of hydroalcoholic extract of *Capsicum annuum* (CA) determined in vitro condition. **Materials and methods:** Antimicrobial susceptibility testing was performed by disk diffusion and broth microdilution MIC methods. **Results:** The diameter of the growth inhibition in disk diffusion test of hydroalcoholic extract on *Staphylococcus aureus*, *Streptococcus pyogenes*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* were 16.33±0.57, 19.66±0.57, 10.33±0.57, 7.66±0.57, respectively. Also, the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of hydroalcoholic extract on *Staphylococcus aureus*, *Streptococcus pyogenes*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* were 1.04±0.36, 0.625±0.18, 5.0±0.0, 2.5±0.0, respectively. **Conclusion:** Hydroalcoholic extract of CA have considerable antibacterial activity, but among the tested bacteria the greatest effect was on *Streptococcus Pyogenes*.

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**Keywords:** Hydroalcoholic extract, Mentha annuum, Disk diffusion, Antimicrobial effects, The minimum inhibitory concentration (MIC).

**How to cite this article:** Matinnia, E., Abbasi Maleki, S., Moradi Kor, N., 2016. Evaluation of the antibacterial effects of *Capsicum annuum* hydroalcoholic extract in vitro condition. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.

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Evaluation of the antidepressant effects of *Sesamum indicum* oil in forced swim test and tail suspension test in mice

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Abstract

**Introduction:** The aim of this study was to investigate the effect of *Sesamum indicum* L (SI) oil in forced swimming test (FST) and tail suspension test (TST) in male mice. **Materials and methods:** In this experimental study male NMRI mice (weighting between 20-30 g) with forced swim test (FST) and tail suspension test (TST) were used. The total duration of immobility was recorded during 6-min. Experimental groups involved control groups (Normal saline alone or plus tween 80-12 %), different doses of SI (62.5, 125, 250, 500 mg/kg, i.p) and imipramine (30mg/kg) and fluoxetine (20 mg/kg). All injections were interaperitoneally (i.p.) at constant volume of 10ml/kg. **Results:** The results of present study showed that SI oil compared to control groups significantly and dose dependently reduced immobility time in both FST and TST. Also, this oil significantly increased swimming time and climbing time. Based on present study findings, it seems that poly unsaturated fatty acids (PUFAs) that present in SI oil with serotonergic and noradrenergic mechanisms induced their antidepressant like-activity. **Conclusion:** Further studies need to be carried out for a better understanding of this mechanism.

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**Keywords:** Sesamum indicum L, Oil, Monoaminergic system, FST, TST, Mice.

**How to cite this article:** Eslami Yoshanloei, J., Abbasi Maleki, S., Moradi Kor, N., 2016. Evaluation of the antidepressant effects of *Sesamum indicum* oil in forced swim test and tail suspension test in mice. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Evaluation of the effect of *Origanum majorana* L. essential oil on morphine withdrawal signs in male mice

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**Abstract**

**Introduction:** The aim of present study was to investigate the effect of *Origanum majorana* L. (OM) essential oil on morphine withdrawal signs in male mice. **Materials and methods:** In this experimental study forty male NMRI mice (20-30 g) were randomly divided into 5 groups of 8: Control groups received morphine and normal saline (10ml/kg) and other groups received Clonidine (3.5 mg/kg) and different doses of essential oil of OM (20, 40 and 60 mg/kg). Morphone dependency was induced using a four- day schedule method with 50, 50, 75 and 50 mg/kg dosing respectively. On the fourth day, 2 hours after single dose of morphine, naloxone was injected (5 mg/kg) and withdrawal signs were recorded with number of jumping and diarrhea, grooming, wet dog shake, teeth chattering, writing, climbing as scores of 0 to 3 during 30 min. **Results:** The present study findings showed that all doses of OM extract compared to control group, significantly and dose-dependently decrease the number of jumping in morphine dependent mice (P<0.01). Also, The behaviors of grooming (P<0.01), teeth chattering (P<0.05), climbing (P<0.01), rearing (P<0.01), wet dog shakes (P<0.01), writing (P<0.01), and diarrhea (P<0.05 and P<0.01, respectively) decreased with all doses of extract. Clonidine also significantly decreased all signs of withdrawal signs (except grooming) (P<0.015). **Conclusion:** Based on present study findings probably monotrepens that existing in essential of OM, responsible for attenuation of morphine withdrawal signs. However, further studies need to clarify their exact mechanism of action.

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**Keywords:** *Origanum majorana* L, Essential oil, Morphine withdrawal, Monotrepens, Mice.

**How to cite this article:** Sadighi, S., Abbasi Maleki, S., Moradi Kor, N., 2016. Evaluation of the effect of *Origanum majorana* L. essential oil on morphine withdrawal signs in male mice. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Evaluation of the antidepressant effect of *Laurus nubilis* essential oil in animal models of depression in male mice

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Abstract

Introduction: Previous studies showed sedative, antiepileptic and analgesic properties of *Laurus nubilis* (LN). The aim of present study was to evaluate the antidepressant effects of LN essential oil in forced swim test (FST), tail suspension test (TST) and open field test (OFT) in male mice. Materials and methods: In this experimental study, 126 male mice (20-30 g) were randomly divided into 21 groups of 6: Negative control groups received normal saline (10 ml/kg), positive control groups received fluoxetine (20 mg/kg) and imipramine (30 mg/kg) and treatment groups received LN essential oil (0.5, 1, 2 and 4 mg/kg). In both tests, immobility time recorded during 6-min. Also, two behaviors of swimming and climbing were recorded. Results: All doses of essential oil (except 0.5 mg /kg) and only 2 and 4 mg/kg of that, significantly reduced immobilization time compared to control group in FST (p<0.001) and TST (p<0.05 and p<0.001), respectively. Also, only high doses of essential oil (4mg /kg) significantly increased swimming time (p<0.001). All doses of essential oil couldn’t increase climbing time significantly (p>0.05). Conclusion: Based on present findings, probably monoterpens existing in essential oil with involving of serotonergic system caused antidepressant-like activity and their effect similar to fluoxetine. Therefore, further studies need for understanding their exact mechanism of action.

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Keywords: *Laurus nubilis*, Essential oil, Antidepressant effect, Animal models, Mice.

How to cite this article: Kalantary, F., Abbasi Maleki, S., 2016. Evaluation of the antidepressant effect of *Laurus nubilis* essential oil in animal models of depression in male mice. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Comparison of the anesthesia with concurrent use of Mentha piperita essential oil-ketamine with diazepam-ketamine in male rat

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Abstract

Introduction: Studies showed analgesic, antidepressant, sedative-hypnotic and anesthetic properties of Mentha piperita (MP). Hence, in present study combination of anesthesia with Mentha piperita essential oil-ketamine with Diazepam-ketamine was comprised. Materials and methods: In this study 24 male Wistar rats (200-250 g) randomly assigned in 3 groups, Mentha piperita alone (MP) (1000 mg/kg, i.p.), combination of MP-ketamine (MPK) (1000 mg/kg and 80 mg/kg, i.p., respectively), and diazepam-ketamine (DK) (2.5 and 80 mg/kg, i.p., respectively) (n=8). Heart and respiratory rate, induction and duration of surgical anesthesia (SA) walking times, withdrawal reflexes (pedal withdrawal, lip and tail pinches) were measured. Essential oil alone couldn’t induce surgical anesthesia. But, MPK group compared DK group immediately induced anesthesia. Results: Results showed that MP group compared to the other two groups increased heart rate. Also, MP and MPK groups compared to DK group increased respiratory rate. Body temperature of DK group is lower than the other two groups. Results relieved that MP group is weaker than MPK and DK groups inhibit lip, tail and pedal pinches. Conclusion: Based on present study findings induction, surgical anesthesia and recovery times of MPK group is similar to DK group. Although essential oil alone couldn’t induce SA, but their effects are similar to diazepam and it can be used as candidates for preanesthethtic agent whereas diazepam.

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Keywords: Mentha piperita, Essential oil, Ketamine, Diazepam, Anesthesia parameters, Rat.

How to cite this article: Tolabi, M., Abbasi Maleki, S., 2016. Comparison of the anesthesia with concurrent use of Mentha piperita essential oil-ketamine with diazepam-ketamine in male rat. 1st International Conference on Medicine, Public Health and Biological Sciences (MPHBS), Sep. 2016.
Evaluation of immune responses of *Pseudomonas aeruginosa* somatic antigens in mice

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Abstract

Introduction: *Pseudomonas aeruginosa* (*P. aeruginosa*) is an opportunistic pathogen that, its infection is a serious problem in patients hospitalized with cancer, cystic fibrosis, and burns. This bacterium has different chromosomal and plasmid-mediated resistance genes involved in the resistance of the bacterium to antimicrobial agents. Low permeability of outer membrane and different efflux pumps are also among common mechanisms of drug resistance in *P. aeruginosa*. In *P. aeruginosa*, different antigenic and virulence factors, such as outer membrane proteins, toxins, flagella, pilli and high molecular weight poly-saccharides have been evaluated as vaccine candidates. Antibiotic resistance and the needs for long-term treatments, especially in chronic infections necessitate the development of vaccine against *P. aeruginosa* infections. Materials and methods: In the present study, the mice were immunized subcutaneously with somatic cell antigens, and the humeral immune response was evaluated by ELISA method. The immunized and control group mice were challenged with a 2×LD₅₀ of *P. aeruginosa* for the protection assay. Results: In the present study, we demonstrated that immunization with somatic cell antigens (inactivated with formalin and heat, PBS as a control) elicits a robust antibody response that provides protection against challenge with 2×LD₅₀ of *P. aeruginosa*. Conclusion: These results demonstrate that immunization using a somatic cells antigen may be an effective approach for preventing infection by *P. aeruginosa*.

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Keywords: Pseudomonas aeruginosa, Whole cell antigens, Vaccine candidate, Infection.

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Evaluation of the effect of concurrent use of Estradiol with Fluoxetine on expression of morphine induced-conditioned place preference in male mice

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Abstract

Introduction: The aim of this study was to investigate the effect of estradiol on expression of morphine induced conditioned place preference (CPP) in male mice. Materials and methods: In this experimental study, Male NMRI mice (20-30g) were used. The study took place on six consecutive days, consisting of three phases: Preconditioning, conditioning, and postconditioning. In the first section of study, Estradiol (10, 20 and 40 µg/kg) alone were administered in conditioning and postconditioning phases to see if they induced conditioned place preference or aversion (CPA). In the second set, mice received Estradiol in postconditioning phase after conditioning with morphine. Control groups received normal saline whereas these drugs. Results: Intraperitoneal administration of different doses of morphine (5 and 10 mg/kg, p<0.001) induced CPP. Different doses of Estradiol alone or before morphine administration during acquisition phase did not induce any significant CPP or CPA. However, their co-administration with morphine all three doses (p<0.01 and p<0.001, respectively) induced morphine like-CPP. Also, 5 and 10mg/kg of fluoxetine induced morphine-like CPP (p<0.01 and p<0.001, respectively). Concurrent use of Estradiol (20µg/kg) with fluoxetine (5mg/kg) potentiated morphine induced -CPP. Conclusion: The present study findings showed that, Estradiol perhaps with serotonergic and noradrenergic mechanisms induced morphine like CPP. Therefore, further studies need to carry out to understand their exact mechanism of action.

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Keywords: Estradiol, Fluoxetine, Conditioned place preference, Morphine, Mice.

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Evaluation of immune responses of *Pseudomonas aeruginosa* secretion antigens in mice

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Abstract

**Introduction:** First pathogen *P. aeruginosa* in patients with suppressed immune system of justice that has risk factors for nosocomial infections prove fatal bacterium creates polar flagella that move chemotaxis and colonization in the acute phase of infection. With such a variety of virulence factors exotoxin variety of proteases and polysaccharide vaccine candidate has been Bbvnvan flagella, etc., but are not limited success. Resistance of high antibiotic need for long-time remedy especially in chronic infections shows the necessity of improvement of vaccine for *P. aeruginosa* infections. So, in this study the use of excretory antigens considered as candidate vaccine. **Materials and methods:** In this study, the supernatant after centrifuge and crossed the 0.2 micrometer filter and deactivate fixed with an Ajyant mixed and administered on days 0, 14, 28 and 42. One week after the last injection of sheep bulging, immune response was evaluated by ELISA method. Protect the safety group and the control group against with *P. aeruginosa* infection was examined by Tzryq 2×LD50. **Results:** This study shows that immunization with antigens induce strong antibody secreting cells of *P. aeruginosa* and protection against that was in 2×LD50 dose. **Conclusion:** These results indicate that the use of cell secretory antigens of *P. aeruginosa* is an effective way to keep track of Fynt.

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**Keywords:** Immune responses, *Pseudomonas aeruginosa*, Antigens, Mice.

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Hepatoprotective effect of hydro-alcoholic extract of *Salvia officinalis* against hepatotoxicity induced by carbon tetrachloride in adult male rat

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Abstract

**Introduction:** The aim of the study is to evaluate the protective effect of *Salvia officinalis* against carbon tetrachloride induced hepatotoxicity in rats. Liver injury was induced by CCl₄ intraperitoneal injection twice a week for 4 weeks. **Materials and methods:** Hydroethanolic extract of *Salvia officinalis* aerial parts in concentrations 50, 100, 200 and 300 mg/kg body weight was treated for 4 weeks, intraperitoneally. After 4 weeks, the animals were anesthetized with ether and sampling of blood and liver was done. Liver sections were stained with haematoxylin-eosin. **Results:** The results showed that, the treatment of CCl₄ increased serum enzymes, including alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase and liver histopathological damages, while decreased total protein level in contaminated rats in comparison to control normal rats (p<0.001). Also, intraperitoneal treatment of *Salvia officinalis* extract significantly decreased levels of the alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase and liver damages, while increased total protein level in experimental animals compared to the control group. **Conclusion:** The results showed that ethanol extracts of *Salvia officinalis* has hepato-protective effect against liver damage caused by carbon tetrachloride.

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**Keywords:** Salvia officinalis aerial parts, Hepatoprotective, Carbon tetrachloride, Rats, Hepatic enzymes.

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Anxiolytic effect of L-carnitine in adult male rats

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Abstract

Introduction: The beneficial effect of L-carnitine for treatment of neurological diseases has been investigated in various studies. The aim of the present study was to investigate the effect of L-carnitine supplement on anxiety behavior in adult male rats by elevated plus maze. Materials and methods: In this experimental study, the studied groups were divided into normal, saline, and experimental groups. L-carnitine was administered intraperitoneally at doses of 0.5, 1, 2, and 4 mg/kg, and saline control group received saline as a vehicle. The data were analyzed by using one-way ANOVA and Dunnett’s test. The significance level was considered as p<0.05. Results: In this study, the anxiolytic response of the drug was evaluated by elevated plus maze 30 minutes after treatment. L-carnitine treatment increase time spent in open arms, number of entries into open and dark arms or locomotor activity, %OAE, while decreased %OAT (p<0.01). Conclusion: The results of this study indicated that L-carnitine has anxiolytic effect on male rats.

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Keywords: Carnitine, Anxiety, Elevated plus-maze, Rats.


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Antidiabetic effect of Rosa canina L. fruit in alloxan induced diabetic male rats

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Abstract

Introduction: Recently, Rosa canina L. fruit has been taken into consideration in the treatment of diseases due to not having any side-effects. In the present study, the antidiabetic effect of Rosa canina L. fruit was investigated in alloxan-induced diabetic rats. Materials and methods: In this experimental study, animals were divided into 6 groups (8 rats/group): Healthy group, diabetic group, in which diabetes was induced by intraperitoneal (i.p.) injection of alloxan (at dose of 120 mg/kg), and experimental groups, which were treated with i.p. administration of hydroethanolic extract (at doses of 50, 100, 200, and 300 mg/kg) for 14 days. Blood samples were collected from heart after 14 days. The diabetic control group was treated daily with saline. Serum levels of glucose, total cholesterol, triglyceride, LDL-c, HDL-c, urea, uric acid, creatinine, enzymes alanine aminotransferase (ALT), aspartate aminotransferase (AST), and alkaline phosphatase (AP), were measured using kit. Results: Alloxan treatment significantly increased serum levels of glucose, LDL-c, triglyceride, total cholesterol, urea, uric acid, creatinine, enzymes ALT, AST, and AP and significantly decreased serum HDL-c level in diabetic control (saline) animals compared to healthy group. Treatment with hydroethanolic extract of Rosa canina L. fruit for 14 days (in concentrations of 50, 100, 200, and 300 mg/kg), significantly decreased serum levels of glucose, LDL-c, triglyceride, total cholesterol urea, uric acid, creatinine and AP enzyme compared to the diabetic control animals, while increased serum HDL-c level compared to the diabetic control (saline) group. Hydroethanolic extract of Rosa canina fruit has antidiabetic effect on diabetic animals. Conclusion: This plant is a good candidate for the treatment of diabetes mellitus and should be given more attention in future researches.

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Keywords: Rosa canina, Diabetes mellitus, Rat, Alloxan.

The anti-inflammatory, immunomodulatory and antioxidant properties of Spirulina microalgae

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Abstract

The use of microalgae as a feed additive could be the best choice for solving problems associated with the use of antibiotics, organic acids and other chemical ingredients in feed. The purpose of this review is to investigate the anti-Inflammatory, immunomodulatory and antioxidant properties of Spirulina Microalgae. There have been many reports on the therapeutic implications of Spirulina, including for health problems like diabetes, arthritis, anemia, cardiovascular diseases and cancer. Spirulina is a cyanobacterium (blue-green algae) that can be consumed by humans and other animals. Spirulina is the only substance which contains high amounts of phycocyanins which seem to be a powerful immune stimulant and anticancer force. Spirulina is well-known to have antioxidant properties, which are attributed to molecules such as Phycocyanin, B-complex vitamins, minerals, good quality proteins, gamma-linolenic acid and the super anti-oxidants, beta-carotene, vitamin E and trace elements. In humans, mammals, chicken and fish, Spirulina produces an immunostimulating effect by enhancing the resistance to infections, the capacity of influencing hemopoieses, and stimulating the production of antibodies and cytokines. Spirulina has also been shown to activate macrophages, T and B cells. Spirulina extract had higher levels of natural killer cells interferon gamma and more potent production of interleukin-12p40. Spirulina may be involved in signaling responses through toll-like receptors in blood cells even when orally administered. Toll-like receptors are a class of proteins that play a key role in the innate immune system. This may indicate that in humans, Spirulina acts directly on myeloid lineages and either directly or indirectly on NK cells. Phycocyanin also has anti-inflammatory and neuro-protective properties that participate in detoxification process, enhance the immune system and hemapoiesis to produce more erythrocytes and lymphocytes and activating macrophages and NK cells. It can be concluded that Spirulina has a protective effect against apoptotic cell death due to free radicals. The potential application of incorporating Spirulina into food products and beverages to enhance their antioxidant capacity is worth exploring.

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Keywords: Anti-inflammatory, Antioxidant, Phycocyanin, Spirulina microalgae.

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Comparison of antibacterial activity of the hydroalcoholic and essential oil of Mentha pileglum in vitro condition

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Abstract

Introduction: In the present study antibacterial effects of hydroalcoholic extract and essential oil of Mentha pileglum (MP) were comprised in vitro. Materials and methods: Antimicrobial susceptibility testing was performed by disk diffusion method and the minimum inhibitory concentration (MIC). Results: The diameter of the growth inhibition in disk diffusion test of hydroalcoholic extract and essential oil on Staphylococcus aureus, Streptococcus pyogenes, Klebsiella pneumonia and Pseudomonas aeruginosa, were 14.66±0.57, 0.33±0.57, 10.00±0.16 and 2.33±4.0 mm, respectively. Also, the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of hydroalcoholic extract and essential oil on Staphylococcus aureus, Streptococcus pyogenes, Klebsiella pneumonia and Pseudomonas aeruginosa were 1.25±0.0, 0.52±0.18, 5.00±0.0 and 10.0±0.0 mm respectively and 0.83±0.36, 0.15±0.0, 2.88±0.0 and 6.66±0.0 mg/ml. Conclusion: Results showed that both hydroalcoholic and essential oil of MP have considerable antibacterial activity, but among the tested bacteria the greatest effect was on Pseudomonas aeruginosa and totally compared hydroalcoholic extract, the essential oil has a better antibacterial activity.

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Keywords: Hydroalcoholic extract, Essential oil, Mentha pileglum, Disk diffusion, Antimicrobial effects, The minimum inhibitory concentration (MIC).

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As we keep discovering our world science blends with spirituality and accepts we must believe in order to see.