Mohammad Najafi

PhD
Clinical Biochemistry
Iran University of Medical Sciences, Biochemistry Department

nbsmmsbn@iums.ac.ir

Tel: 021-86703107 **Fax** : 021-88622742

30- Article: System study of MPO promoter high-frequent polymorphic variants on transcription factor network.

Mohammad Najafi, Parisa Mohammadi

ABSTRACT: The neutrophil myeloperoxidase (MPO) promotes the oxidative stress by the production of active chlorinated molecules. The aim of study was to investigate the association between MPO promoter polymorphic variants (rs2243827 and rs2333227) and, its serum level in patients with the stenosis of coronary arteries. Furthermore, a system approach was applied to create the MPO transcription factor network. A total of one hundred fifty six subjects (controls, stenosis<5%, n=71 and patients, stenosis >70%, n=85) undergoing coronary angiography were recruited. The polymorphic haplotypes and serum MPO level were identified using ARMS-PCR and ELISA techniques, respectively. The MPO transcription factor network was primarily created with PSICQUIC and ChIP data and, was improved with the predicted transcription factors. The regression analyses did not show an association between the serum MPO level and the extent of stenosis in coronary arteries. The network showed that the predicted transcription factors at the flanking regions of polymorphic variants are not directly interacted to MPO. In conclusion, the population and prediction studies showed no association between the serum MPO level, the promoter high-frequent polymorphic frequencies and the extent of stenosis in coronary arteries. A gene sub-cluster with MYB as central node was suggested to be involved with MPO on the transcription factor network. Copyright © 2015. Published by Elsevier B.V.

Gene 01/2015; 560(2). DOI:10.1016/j.gene.2015.01.055 · 2.08 Impact Factor

29- Article: Plasma nitric oxide and oxidized LDL levels in systemic lupus erythematosus (SLE)

Mohammad Najafi, Freshteh Parto, Parisa Mohammadi, Mohammad Shabani

ABSTRACT: Systemic lupus erythematosus (SLE) is an autoimmune disease with different clinical manifestations. The inflammatory and oxidative modification

reactions are the most important events associated with cardiovascular complications of SLE patients. The aim of this study was to investigate the nitric oxide (NO) and the oxidized low-density lipoprotein (Ox-LDL) levels in order to explain the role of oxidized particles in development of clinical manifestations. A total of 80 subjects, SLE patients (n=40) and healthy controls (n=40), were recruited and matched regarding to age, gender, and body mass index (BMI). The biochemical parameters were measured using routine laboratory methods. The plasma Ox-LDL and NO levels were assayed with ELISA and colorimetric techniques, respectively. The plasma NO level was significantly high in SLE patients (33.03±18.09 μmol/mL) in comparison to healthy controls (15.25±11.54 μmol/mL). In contrast, the total and normalized (Ox-LDL/LDL) plasma Ox-LDL values were low in SLE patients (p=0.2 and p

LaboratoriumsMedizin 10/2014; 38(6). DOI:10.1515/labmed-2014-0037 · 0.30 Impact Factor

28- Article: Lack of association between glutathione peroxidase1 (GPx1) activity, Pro198Leu polymorphism and stenosis of coronary arteries: A population-based prediction

Mohammad Najafi, Hassan Ghasemi, Abazar Roustazadeh, Mohammad Farajollahi

ABSTRACT: Background We studied the association between erythrocyte glutathione peroxidase1 (GPx1) activity and rs1050450 (Pro198Leu) site with the stenosis of coronary arteries and, evaluated the Pro/Leu position within the predicted tertiary structure. Methods Subjects were recruited from who underwent coronary angiography (controls; n = 55, Stenosis < 5% and Patients; n = 95, Stenosis ≥ 50%). The GPx1 activity and rs1050450 C/T variants were determined using enzyme assay and RFLP-PCR techniques, respectively. The conserved regions and GPx1 tertiary structure were predicted using bioinformatics tools. Results We did not find significant association between GPx1 activity (P = 0.96), rs1050450 genotype distribution and coronary artery disease (adjusted OR = 0.79; 95%CI 0.28–2.2, P = 0.6). The polymorphic variants were not located at the predicted structural and functional domains so that it had not the significant role on the GPx1stability and function. Conclusions In agreement with the results predicted from bioinformatics tools, we suggested that the GPx1 activity and rs1050450 (Pro198Leu) site are not involved in the development of stenosis of coronary arteries in the study population.

09/2014; 2(2):722–729. DOI:10.1016/j.mgene.2014.09.007

27- Technical Report: Introductory For Bioinformatics

Mohammad Najafi

ABSTRACT: http://omicsgroup.org/editor-biography/Mohammad_Najafi/

26- Article: RNA Preservation and Stabilization

Mohammad Najafi

ABSTRACT: RNA quality and integrity is a prominent issue in gene expression analysis which emerged as a critical tool in life science researches, drug discovery and optimization of bioproduction. Handling and preservation methods including formalin

fixation, flash freezing and chemical preservatives (sulfate solution and TRIzol) and commercial compounds (RNAlater, Allprotect and PAXgene) are widely applied to keep high quality RNA within fresh tissue samples. In this article, we tried to give a general idea on basic aspects of the above methods

25- Article: Matrix Gla protein (MGP) promoter polymorphic variants and its serum level in stenosis of coronary artery

Mohammad Najafi, Abazar Roustazadeh, Abdollah Amirfarhangi, Bahram Kazemi

ABSTRACT: Although the role of matrix Gla protein (MGP) is not completely known but, its expression within subendothelial macrophages and vascular smooth muscle cells is suggested to be involved in vascular calcification. In this study, we investigated the associations between the serum MGP levels and the MGP promoter high minor allele frequency (MAF) variants with the development of stenosis in coronary arteries. Moreover, we evaluated the allele changes within predicted transcription factor elements with bioinformatics tools. 182 subjects were recruited from who underwent coronary angiography. The MGP promoter rs1800801, rs1800802 and rs1800799 genotypes and haplotypes were detected by ARMS-RFLP PCR techniques. The serum MGP concentration was measured using ELISA method. Jaspar profiles were used for scoring the polymorphic variations within the transcription factor elements. The genotype and two-allelic haplotype distributions were not significant between the patient and control groups ($P > 0.05$). The serum MGP levels had not significant differences between the genotypes ($P > 0.1$) and haplotypes ($P > 0.4$). Based on the prediction studies, we did not observe significant differences between the polymorphic scores in the predicted elements ($P > 0.05$). We concluded that the genotype and haplotype distributions of the MGP promoter high-MAF polymorphisms, as confirmed in the prediction studies and the serum MGP level are not significantly associated with the coronary artery disease. Based on the study results, the MGP protein did not play an important role in the development of stenosis of coronary arteries.

Molecular Biology Reports 01/2014; 41(3). DOI:10.1007/s11033-014-3027-7 · 1.96 Impact Factor

24- Article: Liver Aspartate Transaminase Isoenzymes as Biomarkers of Chronic Exposure to Chromium(VI) / JETRENI IZOENZIMI ASPARTAT TRANSAMINAZE KAO BIOPOKAZATELJI KRONIČNE IZLOŽENOSTI HEKSAVALENTNOM KROMU.

Mohammad Najafi, Abazar Roustazadeh, Ali Asghar Moshtaghie, Mohsen Ani

ABSTRACT: Abstract Exposure to hexavalent chromium compounds is associated with the risk of lung cancer, dermatitis, gastrointestinal ulcers, and other tissue damages. The aim of this study was to compare liver isoenzyme and total serum activities of aspartate aminotransferase (AST) as cytotoxic biomarkers of acute and chronic cytotoxicity of CrVI. We investigated the extent of cell damage caused by chromium(VI) in acute (2.5 mg kg-1) daily doses administered over five days and chronic (0.25 mg kg-1 and 0.5 mg kg-1) daily doses administered over 15 to 60 days by measuring total AST in serum and low molecular weight AST (LMW-AST) and high molecular weight AST (HMW-AST) activities in thirty liver fractions. We also evaluated the kinetic properties and electrophoretic mobility of the LMW- and HMW-

AST isoenzymes in liver subcellular fractions. Liver LMW-AST and total serum AST activities significantly decreased after 15 days of exposure (P<0.05). With continued treatment, AST activity increased by 15.67 % (P<0.05). Interestingly, changes in serum AST activity were similar to changes in the liver LMW-AST isoenzyme. Our results confirmed that total serum AST activity may serve as a reliable tissue biomarker for long-term exposures to Cr VI, but they also suggest that the LMW-AST isoenzyme could be even more sensitive.

Archives of Industrial Hygiene and Toxicology 12/2013; 64(4):547-52. DOI:10.2478/10004-1254-64-2013-2358 · 0.73 Impact Factor

23- Article: Association between markers of systemic inflammation, oxidative stress, lipid profiles, and insulin resistance in pregnant women

Zatollah Asemi, Shima Jazayeri, Mohammad Najafi, Mansooreh Samimi, Farzad Shidfar, Zohreh Tabassi, Mohamadesmaeil Shahaboddin, Ahmad Esmaillzadeh

ABSTRACT: Increased levels of pro-inflammatory factors, markers of oxidative stress and lipid profiles are known to be associated with several complications. The aim of this study was to determine the association of markers of systemic inflammation, oxidative stress and lipid profiles with insulin resistance in pregnant women in Kashan, Iran. In a cross-sectional study, serum high sensitivity C-reactive protein (hs-CRP), tumor necrosis factor-alpha (TNF-α), fasting plasma glucose (FPG), serum insulin, 8-oxo-7, 8-dihydroguanine (8-oxo-G), total cholesterol, triglyceride, High density lipoprotein-cholesterol (HDL-cholesterol), and plasma total antioxidant capacity (TAC) were measured among 89 primigravida singleton pregnant women aged 18-30 years at 24-28 weeks of gestation. Pearson's correlation and multiple linear regressions were used to assess their relationships with homeostatic model assessment of insulin resistance (HOMA-IR). We found that among biochemical indicators of pregnant women, serum hs-CRP and total cholesterol levels were positively correlated with HOMA-IR (β = 0.05, P = 0.006 for hs-CRP and β = 0.006, P = 0.006 for total cholesterol). These associations remained significant even after mutual effect of other biochemical indicators were controlled (β = 0.04, P = 0.01 for hs-CRP and β = 0.007, P = 0.02 for total cholesterol). Further adjustment for body mass index made the association of hs-CRP and HOMA-IR disappeared; however, the relationship for total cholesterol remained statistically significant. Our findings showed that serum total cholesterol is independently correlated with HOMA-IR score. Further studies are needed to confirm our findings.

05/2013; 9(3):172-8.

22- Article: How to Analyze Real Time qPCR Data?

Mohammad Najafi

03/2013; DOI:10.4172/2168-9652.1000e114

21- Article: No association between MGP rs1800802 polymorphism and stenosis of the coronary artery

Abazar Roustazadeh, Mohammad Najafi, Abdollah Amirfarhangi, Issa Nourmohammadi

ABSTRACT: Matrix Gla protein (MGP) was originally isolated from bone but it is known to be expressed in several tissues including kidney, lung, heart, cartilage and vascular smooth muscle cells (VSMC) of the blood vessel wall. Since it inhibits calcification in subendothelial space of vessels thus, we evaluated the association of rs1800802(T > C) polymorphism and stenosis of the coronary artery. Cross-sectional case-control. One hundred eighty two subjects recruited on the basis of study protocol from who underwent coronary angiography. The controls (n=70) had normal coronary arteries (up to 5% stenosis). The patients (n=112) subdivided into three subgroups; single-vessel disease (SVD), two-vessel disease (2VD) and three-vessel disease (3VD) based on the number of stenosed coronary vessels (at least 50% stenosis). rs1800802 (T > C) polymorphism was determined by PCR-RFLP technique. Genotype distribution was not significant between control and patient groups. In addition, there were no significant differences between rs1800802 (T > C) frequency and gender (P=.092), and also patient subgroups (one-, two- and three vessel disease) (P=.840). We concluded that rs1800802 (T > C) polymorphism within the MGP promoter is not related to stenosis of the coronary artery.

Annals of Saudi medicine 03/2013; 33(2):149-54. DOI:10.5144/0256-4947.2013.149 · 0.71 Impact Factor

20- Article: Phenotype Variations of Polymorphic Sites: Genotyping against Haplotyping

Mohammad Najafi

01/2013; 01(01). DOI:10.4172/2168-9652.1000e102

19- Article: Serum ox-LDL Level is Reduced with the Extent of Stenosis in Coronary Arteries.

Mohammad Najafi, Behnam Alipoor

ABSTRACT: Oxidized LDL (ox-LDL) lipoproteins are proposed as important modified particles triggering pro-inflammatory events through receptor-mediated pathways. We evaluated the circulating ox-LDL level on the concept that the chronic immune events may affect ox-LDL clearance as the vessel stenosis develops in coronary arteries. One hundred sixty five subjects underwent coronary angiography and then, subdivided into four subgroups controls (n=85); SVD, 2VD and 3VD (n=80). The serum ox-LDL level and other biochemical parameters were measured using ELISA method and routine laboratory techniques, respectively. The serum ox-LDL level in the control group (4.81±1.41 mU/mg) was significantly higher than patients (4.28±1.73 mU/mg, P<0.05). The ox-LDL/LDL ratio was conversely reduced with the extent of stenosis as compared with the controls (P<0.05). Furthermore, no difference was observed in the ox-LDL/LDL ratio between the 2VD and 3VD patients. We suggested the atherosclerosis process increases the total clearing capacities of the circulating ox-LDL particles.

Acta medica Iranica 01/2013; 51(5):314-9.

18- Article: Towards Performing Internal Quality-Control (IQC) Parameters in Clinical Laboratory

Mohammad Najafi

ABSTRACT: The clinical and analytical specificity and sensitivity are dependent on the advancement of laboratory tools. Hereupon, one of the main aims of new laboratory equipments is to develop the Limitations of Detection (LOD) of trace markers. Although the routine use of low LOD markers may be critical in clinical diagnoses but, the qualitycontrol parameters should be managed during their measurements. It is obvious that the data assurances are associated to tools, methods and materials, but a simple concept must be followed for data quality analysis in clinical laboratories. Here, some IQC parameters are mentioned to be applied and evaluated by staffs in clinical laboratories

17- Article: SELENIUM AND SELENOPROTEIN P1 LEVELS ARE RELATED TO PRIMARY OPEN-ANGLE GLAUCOMA / NIVOI SELENA I SELENOPROTEINA P1 POVEZANI SU SA PRIMARNIM GLAUKOMOM OTVORENOG UGLA

Mohammad Najafi, Morteza Nouruzi Yeganeh, Arezoo Miraftabi, Reza Zarei, Isa Noormohammadi

Journal of Medical Biochemistry 01/2013; 33(2). DOI:10.2478/jomb-2013-0024 · 1.08 Impact Factor

16- Article: Phenotype and genotype relationship of glutathione peroxidase1 (GPx1) and rs 1800668 variant: The homozygote effect on kinetic parameters

Mohammad Najafi, Hassan Ghasemi, Abazar Roustazadeh, Behnam Alipoor

ABSTRACT: GPx1 is one of the most important enzymes involved in oxidative balance so that, we studied the phenotype and genotype relationship of GPx1 activity and rs 1800668 (C/T) site and also evaluated the changes of GPx1 kinetic parameters in the rs 1800668 homozygotes. One hundred fifty eight subjects were recruited after clinical exams. The rs 1800668 (C/T) genotype distribution was identified using RFLP-PCR method. The hemolysate GPx1 activity was spectrophotometrically measured in a reaction coupled with glutathione reductase (GR). The GPx1 enzyme was purified using gel filtration chromatography with Sephacryl S-300 column and, Km(app) was studied in the rs 1800668 TT and CC homozygotes. The results showed that the GPx1 activity is significantly associated to the rs 1800668 (C/T) genotype distribution ($P<0.05$) so that, the GPx1 activity was high among the CC homozygotes ($P<0.03$). In addition, Km(app) for TBHP substrate in the TT homozygote (8.48 μM) was higher than the CC homozygote (5.74 μM). We concluded that the C allele within rs 1800668 position is related to the GPx1 activity and may be a potential factor involved in development of inflammatory events.

Gene 06/2012; 505(1):19-22. DOI:10.1016/j.gene.2012.05.057 · 2.08 Impact Factor

15- Article: The effect of Lactobacillus reuteri on bone morphogenetic protein-7 and beta transforming growth factor gene expressions in streptozotocin-induced diabetic rat's kidneys.

S M Nourazarian, G Irajian, M Najafi, M Nourbakhsh, J Maleki, M Shabani

ABSTRACT: Diabetes mellitus is a serious health problem in the world and about 20 to 40% of the patients are being affected with diabetic nephropathy. The anti diabetic property of Lactobacillus reuteri (L. reuteri) has been reported. The study designed to investigate the effect of L. reuteri on the expression of BMP-7 and TGF-beta genes, the two basic factors involved in diabetic nephropathy. This experimental study was carried out in two months. For this goal thirty male Wistar rats with 12 weeks old and 200 +/- 50 g weight was divided into 5 groups, each consisting six rats. (1) Non diabetic, (2) Untreated diabetic, (3) Diabetic rats fed with L. reuteri, (4) Diabetic rats treated with insulin (4-5 U/kg/day), (5) Non diabetic rat fed with L. reuteri. Diabetes in the was induced single intraperitoneal (i.p.) injection of streptozotocin (50 mg kg(-1) b. wt). The L. reuteri 1 x 10(8) Colony Forming Units (CFU) were administered via oral gavages. After two months rats were anesthetized and blood samples collected. Serum nitric oxide (NO) levels were determined by a chemiluminescence method using NO analyzer and serum glucose by glucose oxidize method. The expression of BMP-7 and TGF-beta genes in the rat's kidneys were determined by real time PCR. Results showed that BMP-7 gene expression was increased in diabetic rats that fed with L. reuteri, while TGF-beta gene expressions were decreased. Histopathological study showed that administration of L. reuteri (1 x 10(8) CFU/rat/day) significantly reduced kidney fibrosis and increased meaningfully NO levels in diabetic rats fed with L. reuteri. It was concluded that L. reuteri increase BMP-7 gene expression and may prevents from renal damage by oxidative stress by increasing antioxidant capacity.

Pakistan Journal of Biological Sciences 04/2012; 15(8):374-9. DOI:10.3923/pjbs.2012.374.379

14- Article: Association between rs4673 (C/T) and rs13306294 (A/G) haplotypes of NAD(P)H oxidase p22phox gene and severity of stenosis in coronary arteries

Mohammad Najafi, Behnam Alipoor, Mohammad Shabani, Abdollah Amirfarhangi, Hassan Ghasemi

ABSTRACT: Phagocytic NADH/NADPH oxidase is an important enzyme producing reactive oxygen species within subendothelial space of vessels. Findings have shown that p22phox subunit is an essential element related to the enzyme activity. Since some p22phox polymorphisms are thought to have functional roles in the enzyme thus, we studied the association between rs4673 (C242T) and rs13306294 (A/G) haplotypes and the severity of stenosis in coronary arteries. One hundred eighty-two subjects undergoing coronary angiography were recruited on the base of study design. Patients (n=114) had at least a stenosed coronary artery (>50% stenosis) and subdivided into three subgroups; SVD (n=28), 2VD (n=31) and 3VD (n=55) while controls (n=68) had the normal coronary arteries (<5% stenosis). The direct haplotyping technique of SNPs was performed using ARMS-RFLP-PCR method. Furthermore, alphabet-based tools predicted the changes of secondary structure at the rs4673 position. All haplotypes being proposed theoretically were found in the study population. The distribution of two-allele haplotypes had no significant difference between patients and controls (P=0.1). Although the rs4673 allele frequency was not significant between the groups (P>0.5), chi square test and multinomial regression

analysis showed an observed high risk for rs13306294 A allele among patients. The bioinformatics tools predicted that the p22phox secondary structure is not changed due to the substitution of Tyr→His at the rs4673 position. We concluded that the polymorphisms have no allele linkage on the chromosome. In addition, the rs13306294 A allele is a potential factor of stenosis of coronary arteries that increases susceptibility for the extent of disease.

Gene 03/2012; 499(1):213-7. DOI:10.1016/j.gene.2012.02.032 · 2.08 Impact Factor

13- Article: Effect of Daily Consumption of Probiotic Yogurt on Oxidative Stress in Pregnant Women: A Randomized Controlled Clinical Trial

Zatollah Asemi, Shima Jazayeri, Mohammad Najafi, Mansoreh Samimi, Vahid Mofid, Farzad Shidfar, Hossein Shakeri, Ahmad Esmaillzadeh

ABSTRACT: Due to the enhanced oxygen requirement of the mitochondria-rich placenta primarily during the third trimester, pregnancy is associated with elevated levels of oxidative stress. This study was designed to determine the effects of daily consumption of probiotic yogurt on oxidative stress among Iranian pregnant women. This randomized single-blind controlled clinical trial was performed among 70 pregnant women, singleton primigravida, aged 18-30 in their third trimester. Subjects were randomly assigned to two groups to consume 200 g/day of either conventional yogurt (n = 33) or probiotic yogurt (n = 37) for 9 weeks. Fasting blood samples were taken at baseline and after a 9-week intervention to measure oxidative stress parameters. Consumption of probiotic yogurt resulted in increased erythrocyte glutathione reductase (GR) levels as compared to the conventional yogurt (p = 0.01). Despite the significant effect of probiotic yogurt consumption on plasma glutathione (67.9 μmol/l, p = 0.01), erythrocyte glutathione peroxidase (163 mmol/min/ml, p = 0.04) and serum 8-oxo-7,8-dihydroguanine levels (-74.3 ng/ml, p = 0.04), no significant differences were found between the two yogurts in terms of their effects on the mentioned parameters. Consumption of probiotic yogurt among pregnant women resulted in increased levels of erythrocyte GR as compared to the conventional yogurt, but could not affect other indices of oxidative stress.

Annals of Nutrition and Metabolism 03/2012; 60(1):62-8. DOI:10.1159/000335468 · 2.75 Impact Factor

12- Article: Detection of Dientamoeba fragilis in patients referred to Chaloos Medical Care Centers by nested – polymerase chain reaction (PCR) method

Ardavan Ghazanchaei, Shohreh Shargh, Mohammad Shabani, Mohammad Najafi, Seyed Manuchehr Nourazarian

ABSTRACT: Dientamoeba fragilis is a protozoan that inhabits the human colon and is responsible in degrees for clinical symptoms. These symptoms are: Local stomach pains, loss of weight and appetite and vomiting. Treatment with anti-parasite drugs will improve the symptoms. Due to misdiagnosis, prolonged undesired clinical signs can remain in patient. Diagnosis in stool specimens uses standard Iron-Haematoxylin staining and molecular polymerase chain reaction (PCR) and Nested-PCR methods that differ in sensitivity and specifity. The results presented here confirmed the sensitivity and specificity of 85 and 100% respectively. All negative results with

staining method were also negative by PCR but six positive reported results were detected by staining and one positive sample was not detected by molecular method. This maybe the result of delay in processing samples for diagnosis which may mean the DNA is destroyed and made undetectable.

AFRICAN JOURNAL OF BIOTECHNOLOGY 02/2012; 11(17):4079-4082. DOI:10.5897/AJB11.3850 · 0.57 Impact Factor

11- Article: Plasma total antioxidant capacity and its related factors in Iranian pregnant women.

Zatollah Asemi, Shima Jazayeri, Mohammad Najafi, Mansoreh Samimi, Zohreh Tabasi, Farzad Shidfar, Abbas Rahimi-Foroushani, Vahid Mofid

ABSTRACT: To determine the plasma total antioxidant capacity (TAC) and its related factors in pregnant Iranian women attending maternity clinics. In a cross-sectional study carried out in Naghavi Maternity Clinic, Shaheed Beheshti Specialty and Subspecialty Polyclinic and 10 antenatal centers, affiliated to Kashan University of Medical Sciences, Kashan, Iran, we determined the plasma TAC and its related factors including maternal age, weight, and body mass index (BMI) at the beginning, thirteenth, and twenty-first to twenty-fourth weeks of pregnancy, and gestational age at the twenty-first to twenty-fourth weeks of pregnancy in 137 primigravid pregnant women, 18-30 years old from October 2010 to March 2011. We used multiple linear regression to assess the relationship between TAC and its related factors. Plasma TAC in the twenty-first to twenty-fourth weeks of pregnancy was 0.75+/-0.11 mmol/l. The BMI at the beginning was 25.06+/-4, 25.72+/-4.13 at the thirteenth, and 26.95+/-4.19 kg/m2 at the twenty-first to twenty-fourth weeks of pregnancy. Multiple regression analysis showed that gestational age was inversely associated with the plasma TAC (beta: -0.234, p=0.007). Regression analysis also suggested a trend toward significant association between maternal age and plasma TAC (beta: 0.150, p=0.080), but there was no association between other variables and plasma TAC. Gestational age was inversely correlated with plasma TAC and maternal age had a trend toward significant association with TAC in 18-30 year-old Iranian pregnant women in their sixth month of pregnancy.

Saudi medical journal 12/2011; 32(12):1246-50. · 0.55 Impact Factor

10- Article: Ox-LDL Particles: Modified Components, Cellular Uptake, Biological roles and clinical assessments

M Najafi, A Roustazadeh, B Alipoor

ABSTRACT: Among concepts proposed to elucidate atherosclerosis process, the oxidative modification hypothesis is more considered to be investigated in studies. Based on the hypothesis, the LDL components are chemically modified due to oxidative stress within subendothelial space of vessels. The cells are able to recognize the oxidized LDL (ox-LDL) preparations so that inflammatory events spread through intracellular pathways and lead to the cellular dysfunction and the production of atherosclerotic plaques. The circulating ox-LDL level is suggested as biomarker of atherogenic lesions. However, it is not confirmed in other studies since the circulating ox-LDL clearance during the extent of atherosclerosis process is related to function of

scavenger receptors and the serum anti LDL levels. The report is focused on the biochemical characteristics of modified LDL components, the cellular internalization of ox-LDL particles through the scavenger receptors, prediction of consensus blocks in the receptor sequences and the circulating ox-LDL assessments in cardiovascular complications.

10/2011; 10(2). DOI:10.2174/187152911798346990

9- Article: Effects of daily consumption of probiotic yoghurt on inflammatory factors in pregnant women: A randomized controlled trial

Zatollah Asemi, Shima Jazayeri, Mohammad Najafi, Mansoreh Samimi, Vahid Mofid, Farzad Shidfar, Abbas Rahim Foroushani, Mohamad Esmaiel Shahaboddin

ABSTRACT: Previous studies have shown that inflammatory factors increases in pregnancy and is associated with several complications of pregnancy. The aim of this study was to assess effects of daily consumption of probiotic yoghurt on inflammatory factors in pregnant women. In a randomized clinical trial, seventy primigravid (the first pregnancy) and singleton pregnant women aged 18-30 years were assigned to two groups. Subjects consumed daily 200 g probiotic yoghurt containing Lactobacillus acidophilus La5 and Bifidobacterium animalis BB12 (10(7) CFU g(-1) for each) or 200 g conventional yoghurt for 9 weeks. Fasting blood samples were collected at baseline (28 weeks of gestation) and after intervention (37 weeks of gestation). Inflammatory factors, hs-CRP and TNF-alpha, were measured by Enzyme-linked Immunosorbent Assay (ELISA). Independent t-test was used to compare the two groups after intervention and paired-sample t-test compared variables before and after treatment. The results showed that the probiotic yogurt brought about a decrease in the serum hs-CRP level, from 10.44 +/- 1.56 to 7.44 +/- 1.03 microg mL(-1) (p = 0.041). There was no significant change in the conventional yogurt group in the serum hs-CRP level (12.55 +/- 1.57 to 14.51 +/- 1.62 microg mL(-1), p = 0.202). The probiotic yogurt had no effect on TNF-alpha (from 73.75 +/- 6.59 to 77.91 +/- 5.61 pg mL(-1), p = 0.633). Serum TNF-alpha did not change in the conventional yogurt group (p = 0.134). In conclusion probiotic yogurt significantly decreased hs-CRP in pregnant women but had no effect on TNF-alpha.

Pakistan Journal of Biological Sciences 04/2011; 14(8):476-82. DOI:10.3923/pjbs.2011.476.482

8- Article: Primary blood TSH/back up TSH measurements: an improved approach for neonatal thyroid screening

Mohammad Najafi, Mostafa Mazlom Farsi, Masoumeh Sabahi

ABSTRACT: Neonatal hypothyroidism is one of the most common endocrine disorders related to mental impairment and growth retardation in newborns. In many countries, the neonatal thyroid screening programs are performed for rapid diagnosis and treatment of hypothyroidism. The major aim of this investigation was to improve the thyroid screening program using primary blood TSH/back up TSH measurements as some patients are missed due to technical and human errors. A total of 9,118 neonates were evaluated on the protocol. On top of that, the quality control procedures were applied to improve the sampling technique and the laboratory results.

Three missed neonates by current programs using the cutoff point more than 20 mU/l for blood TSH were found by our approach. Results showed that the programs based on the primary blood TSH/back up TSH measurements improve the thyroid screening results.

Journal of Clinical Laboratory Analysis 01/2011; 25(1):61-3. DOI:10.1002/jcla.20431 · 1.14 Impact Factor

7- Article: Human PON promoters: From similarity to prediction of polymorphic positions within transcription factor elements

Mohammad Najafi, Z Jangravi

ABSTRACT: The human paraoxonases (PON) are a group of anti-oxidative enzymes that catalyze important reactions in body. Some polymorphic variations within the PON genes have been reported to relate with several diseases. In this article, the polymorphisms of the PON upstream regions were evaluated to predict their positions within elements of transcription factors by similarity tools. However, taxonomy studies suggested the PON2 duplication on the chromosome 7 but pairwise alignments did not show vast similarity among the fragments of PON promoters. Multiple sequence alignment (MSA) tool showed the PON1 T-107C and PON3 C-31T positions are conserved within several transcription elements. Based on these tools, the review assumes that the PON upstream regions have no similarity and only two polymorphisms are considered to interact with several transcription factors.

Mini Reviews in Medicinal Chemistry 05/2010; 10(10):938-45. DOI:10.1016/j.clinbiochem.2011.08.235 · 3.19 Impact Factor

6- Article: Paraoxonase 1 gene promoter polymorphisms are associated with the extent of stenosis in coronary arteries

Mohammad Najafi, Ladan Hosseani Gohari, Mohsen Firoozrai

ABSTRACT: HDL-associated paraoxonase1 (PON1) is believed to be an important anti-oxidative enzyme in the retardation of atherosclerosis. In this study, we determined haplotypes of three SNPs within the PON1 gene promoter to elucidate association of functional sites with coronary artery disease (CAD). We applied a direct haplotyping procedure through ARMS (Amplification Refractory Mutation System) and RFLP (Restriction Fragment Length Polymorphism) analysis techniques. The haplotypes of the G(-907)C, A(-162)G and C(-107)T polymorphisms within the 5' region of the PON1 gene were determined in 99 patients and 66 controls who were evaluated angiographically for the presence and extent of stenosis in coronary arteries. The genotype and haplotype distributions had significant differences between patient subgroups (One-, Two- and Three-vessel disease) but not between the patient and control groups. Multivariate analyses suggested decreased arylesterase activity is the most important independent factor in the CAD severity. The increase of high activity variants [G(-907) and C(-107)] within the two-allelic haplotypes was reversely associated with the extent of stenosis in coronary arteries. However, we could not determine the independent involvement each of the C(-107)T and G(-907)C polymorphisms on the extent of stenosis. We found no significant association between the A(-162)G polymorphism and the extent of stenosis in vessels. The study indicated

the association of polymorphic variations within the PON1 gene promoter haplotypes with the serum arlyesterase activity. The arlyesterase activity was also associated with the extent of stenosis in coronary arteries but not with primary development of atherosclerosis.

Thrombosis Research 05/2008; 123(3):503-10. DOI:10.1016/j.thromres.2008.03.004 · 2.43 Impact Factor

5-**Article: Neonatal thyroid screening in a mild iodine deficiency endemic area in Iran**

Mohammad Najafi, Gholam Hossein Khodaee, Mohammad Bahari, Masoumeh Sabahi, Mostafa Mazlom Farsi, Fatomeh Kiani

ABSTRACT: Evaluated serum thyroid-stimulating hormone (TSH), as an early index for diagnosis of neonatal hypothyroidism, indicates insufficient supply of thyroid hormones. The aim of the study was to estimate the incidence of neonatal hypothyroidism and assessment of iodine deficiency in the eastern part of Iran. A cross-sectional study was conducted in a pilot screening. The measurement of blood TSH spotted on filter paper was performed by ELISA method in 59,436 neonates. TSH value equal to 5 mU/L was considered cut off point. The diagnosis of hypothyroidism in neonates with the blood TSH higher than the cut off point was based on clinical examinations and laboratory tests (serum TSH and T4). The groups were compared using chi-square and ANOVA tests. In our study, the recall rate and incidence of hypothyroidism were 3.6% and 2 per 1000 neonates respectively. Based on the proposal made by WHO/UNICEF/ICCIDD, the results of our study showed a mild iodine deficiency in the area. A comprehensive policy should be developed for control of iodine deficiency and treatment of hypothyroidism in the studied population and neighboring countries.

Indian Journal of Medical Sciences 04/2008; 62(3):113-6. DOI:10.4103/0019-5359.39614 · 1.67 Impact Factor

4- **Article: Study of aspartate aminiotrasferase activity in intoxified rat by cadmium.**

Najafi M, Moshtaghie AA, Ani M, Shabani M

Journal of Pharmacology and Toxicology 02/2008; 3:163-167. DOI:10.3923/jpt.2008.163.167

3- Article: Direct haplotyping of bi-allelic SNPs using ARMS and RFLP analysis techniques.

M Najafi, M Firoozrai, H L Gohari, A Zavarehie, G Basiri

ABSTRACT: Haplotype analysis of single nucleotide polymorphisms (SNPs) is an important and rapidly growing approach for association studies. In recent years, statistical procedures to haplotype determination from genotypic information have employed in population studies. These procedures, even though some advantages for estimation of haplotype frequencies in large population samples, have limitations in the accuracy of the analysis. In this study, we have designed a reliable method for direct haplotyping of polymorphic sites using the amplification refractory mutation

system (ARMS) and restriction fragment length polymorphism (RFLP) analysis techniques. We applied the method to determination of haplotypes composed of three SNPs within the paraoxonase1 gene promoter and found the approach can be used in many studies in population and in a variety of clinical settings.

Biomolecular Engineering 01/2008; 24(6):609-12. DOI:10.1016/j.bioeng.2007.08.018 · 3.17 Impact Factor

2- Article: Association between Paraoxonase -1 Gene Promoter T (-107) C Polymorphism and Coronary Artery Disease

M Najafi, L Hosseini Gohari, M Firoozrai, A Zavarehee, HA Basiri

ABSTRACT: Background: Paraoxonase-1(PON1), a high-density lipoprotein (HDL) associated enzyme, is believed to contribute in the pathogenesis of coronary artery disease (CAD). The aim of this study was to evaluate the association of PON1 promoter C (-107)T polymorphism with the extent of coronary artery stenosis in Iranian patients. Methods: The RFLP analysis for determination of the C(-107)T genotype distribution and measurement of serum PON1 ac- tivities (Paraoxonase and Arylesterase) were performed in 99 patients. They were undergone coronary angiography to deter- mine the number of stenotic vessels and classified into three groups: single vessel disease (SVD), two vessels disease (2VD) and three vessels disease (3VD). Results: The C(-107)T polymorphism was significantly associated with serum arylesterase activity but not with paraoxonase activity. The CC and TT genotypes distributed inversely in SVD as compared with 3VD group. Moreover, the CC high activity genotype frequency decreased with increase of stenotic vessels in patients. Conclusion: The reduced arylesterase activity as a function from the weak promoter activity increases the stenosis severity, so that, we assume it is one of the progressive factors of atherosclerotic process in stenotic vessels.

Iranian Journal of Public Health 01/2008; 37(1):108-113.

1- Article: Activities of Anti-Oxidative Enzymes, Catalase and Glutathione Reductase in Red Blood Cells of Patients with Coronary Artery Disease.

M. Firoozrai, H. Mehrabi, A. Ehsani, M. Najafi, M. Ghaffari

Asian Journal of Biochemistry 06/2007; 2(6):437-440. DOI:10.3923/ajb.2007.437.440