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Combined Treatment of Rutin and Vitamin C Improves the Antioxidant Status in Streptozotocin-Induced Diabetic Rats

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The aim of the present study is to determine if a combination of rutin (vitamin-P) and vitamin C has any advantage on antioxidant status in streptozotocin (STZ)-induced diabetes in rats. Oral administration on rutin (100 mg kg^{-1}), vitamin C (200 mg day^{-1}) and their combination (50 and 100 mg kg^{-1}) for 5 weeks on the levels of serum aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), tumor necrosis factor alpha (TNF- α), interleukin-6 (IL-6), glucose, insulin, Total Cholesterol (TC) and triglycerides (TG) in normal and STZ-induced diabetic rats were evaluated. Reduced glutathione (GSH), malondialdehyde (MDA) and superoxide dismutase (SOD) concentrations were estimated in liver. Histopathological changes were screened in liver. Body weight significantly ($p < 0.001$) drops although liver and kidney weights were increased in diabetic rats. Hepatic enzymes (AST, ALT and ALP), cytokines (TNF- α and IL-6) and lipids (TC and TG) were significantly elevated in diabetic rats. Treatments with rutin and vitamin C significantly lowered the elevated values in diabetic rats while it found higher in combined treated group. Liver MDA increased, GSH and SOD levels decreased significantly ($p < 0.001$) in diabetic rats. The treatment with rutin and vitamin C lowered MDA and increased the antioxidant levels to near control values. The results verify the presence of oxidative stress in diabetes and suggest beneficial effects of rutin and vitamin C combinations in combating the oxidative stress in this disease. (*Journal of Medical Sciences* 9 (1): 1-9, 2009; doi: 10.3923/jms.2009.1.9)

Bispectral Index Monitoring Tailors Clinical Anesthetic Delivery and Reduces Anesthetic Drug Consumption

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This study was designed to investigate whether BIS monitoring improves clinical anesthetic delivery and reduces anesthetic drug consumption in adult patients undergoing moderate surgical procedures under general anesthesia, when compared to standard clinical practice. Sixty patients were randomly assigned into two groups of 30 patients each: BIS-guided group (BIS-g) and BIS-blinded group (BIS-b). In BIS-g group sevoflurane and fentanyl were adjusted to maintain a BIS index of 50-60 during procedure and 55-70 towards end of procedure, while in

the BIS-b group, the monitor display was customized to make BIS values invisible to anesthesiologist and sevoflurane and fentanyl were adjusted according to standard clinical practice and such that provides early recovery. BIS-guided anesthesia reduced total sevoflurane usage by 32% than BIS-blinded anesthesia, which consequently reduced cost by 32%. Also times to orientation, to arrival at and to discharge from PACU were shorter in BIS-g group. Results imply that BIS-guided anesthesia might improve recovery profile as it tailors clinical anesthetic delivery and reduces sevoflurane consumption. (*Journal of Medical Sciences* 9 (1): 10-16, 2009; doi: 10.3923/jms.2009.10.16)

The Effect of Weight Reduction Diet on C-Reactive Protein Level in Adult-Obese Subjects

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C-reactive protein (CRP) is an acute-phase protein, which has been shown to be a strong independent predictor of cardiovascular diseases. Adipose tissue is one of the production sites of proinflammatory cytokines that have a role in regulating CRP levels. Obesity, particularly central obesity, has been associated with many health risks, including cardiovascular disease. There is limited data in the literature investigating the effect of weight-reduction diet (WRD) on CRP level in obese subjects. To study the effect WRD on plasma high sensitivity CRP (hs-CRP) level in obese subjects was examined in Riyadh Armed Forces Hospital, Riyadh, Kingdom of Saudi Arabia. Fifty three subjects with body mass index (BMI) $\geq 30 \text{ kg m}^{-2}$ were included in the study. They were placed on energy-restricted diet for 12 weeks. Diet history and food-frequency questionnaire were filled before starting the WRD. Anthropometric measurements [weight, height, BMI and waist circumference (WC)] were taken and blood samples were collected to analyze CRP, total cholesterol, triglyceride, high-density lipoprotein-cholesterol and low-density lipoprotein-cholesterol before and at the end of the WRD. There is a significant reduction in BMI and WC after applying the weight reduction-diet program. In addition, HS-CRP level, triglyceride and total cholesterol were significantly reduced after applying the WRD. A significant positive correlation was noted between plasma HS-CRP level and measures of adiposity, such as BMI and WC. HS-CRP level is influenced by WC and by BMI in healthy-obese adults and that the WRD decreases plasma level of HS-CRP. (*Journal of Medical Sciences* 9 (1): 17-23, 2009; doi: 10.3923/jms.2009.17.23)

Efficacy of Preoperative Oral Gabapentin in Attenuation of Neuro-Endocrine Response to Laryngoscopy and Endotracheal Intubation

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This study was designed to study the efficacy of oral gabapentin premedication in attenuating the cardiovascular responses and catecholamine release to laryngoscopy and endotracheal intubation. Fifty normotensive ASA I patients undergoing elective surgery under general anaesthesia were randomly allocated to one of two equal groups (n = 25 each). Patients were assigned to receive either oral 1200 mg gabapentin (GABA group) or placebo (control group) 2 h before surgery. Anaesthesia was induced with IV propofol 2 mg kg⁻¹ and vecuronium 0.08 mg kg⁻¹ to facilitate tracheal intubation and maintained with 2% sevofluran and 50% nitrous oxide in oxygen. Laryngoscopy lasting 15 sec was attempted 3 min after administration of propofol and vecuronium. Mean arterial pressure and heart rate were recorded before and after induction of anaesthesia as well as at 1, 2, 3, 4, 5 and 10 min following intubations. Plasma catecholamines were measured before and after induction and at 1 and 5 min after intubation. Patients receiving placebo exhibited significant increase in mean arterial pressure, heart rate and plasma concentrations of catecholamines associated with tracheal intubation compared to baseline. The increase of mean arterial pressure and heart rate was attenuated in patients treated with gabapentin. Gabapentin failed to suppress the increase in catecholamine concentrations in response to tracheal intubation. Preoperative oral gabapentin suppressed the hemodynamic response (MAP and HR) to endotracheal intubation and these effects were not caused by inhibition of the catecholamine response. (*Journal of Medical Sciences 9 (1): 24-29, 2009; doi: 10.3923/jms.2009.24.29*)

Vitrification of Small Volume of Normal Human Sperms: Use of Open Pulled Straw Carrier

G. Saki, F. Rahim and M.J. Zergani

The objective of this study was to evaluate whether cryopreservation of small volume of sample (sperm+cryoprotectant) was feasible using open pulled straw and also compared the outcomes of open pulled straw and conventional straw as carrier for normal human sperm cryopreservation . Semen samples were obtained from 10 men undergoing evaluation for infertility after 3-4 days of abstinence.

Washed normal sperm samples were divided into three aliquots as follows: (1) fresh; (2) cryopreserved in open pulled straw and (3) cryopreserved in conventional straw. In order to do cryopreservation of sperm in open pulled straw first washed normal sperm samples were mixed with equal volume of test yolk buffer and 12% v/v glycerol, later on 3-4 μ L from the prepared mixture was loaded in each straw by using syringe. The loaded straws were plunged into liquid nitrogen and after 3 months recovered and thawed. Each straw was emptied of their fluid content in drop of 10 μ L medium covered with mineral oil. Motility of vitrified-thawing sperm was assessed by using inverted microscope. The results show as percent progress motility \pm SD and the $p < 0.05$ were suggested as significant. The percent progress motility \pm SD of fresh sperm was evaluated as follow in study groups for fresh group was evaluated as 59.2 \pm 7.6; the value of 37.5 \pm 8.2 in cryopreserved sperm in open pulled straws group and value of 26.3 \pm 6.4 for conventional straw group, respectively. Statistical analysis shows that the difference between cryopreserved sperm in open pulled straws and conventional straw groups is significant ($p = 0.001$). Because of the significant difference between cryopreserved sperm in open pulled straws and conventional straw groups, we concluded that vitrification of human sperm is feasible using open pulled straw. The results of this study shows that open pulled straw could be a good carrier for cryopreservation of small volume of normal human sperm. (*Journal of Medical Sciences* 9 (1): 30-35, 2009; *doi*: 10.3923/jms.2009.30.35)

A Survey on Consumer Need and Opinion about the Community Pharmacists in Riyadh, Saudi Arabia

M.I. Al-Hassan

This is a questionnaire based survey designed to determine the current status of customers' views on community pharmacies in Riyadh and focus strategies to expand and promote community pharmacy services in Saudi Arabia. Personal interview survey of 187 consumers, in Riyadh city, was obtained over a period of six weeks (23rd December 2007 to 8th February 2008). The interview questionnaire was designed to ask choice of pharmacy to seek advice, the frequency and the range of health areas for which they seek advice, attitude and views of clients to six items towards pharmacists and their assistants. The results obtained revealed the following: (i) to visit a particular pharmacy, respondents claimed it was convenient due to a short distance, convenient working hours, knowledge of staff and excellent services, (ii) majority of the respondents asked for advice about Over-The-Counter (OTC) medications and prescription advice,

while others visited for minor health problems. Willingness to provide advice, quicker services, competence and knowledge about medicines, were revealed to be desired qualities of pharmacists. On attitudes of the customers to a list of six items, majority showed that pharmacists are qualified as health professionals. Some strongly agree that pharmacists are not qualified to discuss with customers their health complaints. It is difficult to conclude the reasons that inhibit clients from seeking the advice of pharmacist. Possibly the lack of privacy and the supermarket style of marketing might influence in deterring the advice seekers. Thus the problem of environment for privacy must be addressed. (*Journal of Medical Sciences* 9 (1): 36-40, 2009; doi: 10.3923/jms.2009.36.40)

Expression of E-Cadherin in Squamous Cell Carcinoma of the Larynx and its Correlation with Clinicopathological Features

M. Hasan Larizadeh, M. Ali Damghani, H. Tabrizchi and T. Reza Mirshekari

The purpose of this study was to define the frequency of E-cadherin underexpression and its correlation with clinicopathological behaviors of the tumor in Iranian patients with laryngeal carcinoma. In 95 paraffin-embedded specimens of patients with squamous cell carcinoma of larynx at our hospital from 2002 to 2007, the expression of E-cadherin was examined by immunohistochemical staining. To evaluate the correlation between E-cadherin expression and clinicopathological behavior, Chi-squared or Fisher exact test was used. Analysis of these samples showed reduced E-cadherin expression (Staining of less than 50% of the cells) in 79 (83.2%) patients. Reduced E-cadherin expression had correlation with tumor differentiation ($p = 0.03$). Also it had significant association with node involvement ($p = 0.02$) and tumor recurrence ($p = 0.01$). Determination of E-Cadherin expression might be useful in prognostic assessment. Whoever, to use it in clinical practice more studies are necessary. (*Journal of Medical Sciences* 9 (1): 41-45, 2009; doi: 10.3923/jms.2009.41.45)

Tuberculin Skin Test Size after Prolong Time of Bacille Calmette Guérin Vaccination

Ghorbani Gholamali and Aslani Jafar

The aim of this study was to evaluate the effect of Bacille Calmette Guérin vaccination after long time on tuberculin skin test in adults, because the long-term effect of BCG vaccination is not known in Iran. We carried out a cross-sectional

study on 464 on-duty soldiers in a systematic random selection in 2008. Purified protein derivative was injected intradermally with quantity 0.1 mL into the forearm and induration size of skin test was measured after 48-72 h. Induration more than 10 mm was taken as positive reaction. In here all soldiers were man with mean age of 23.28 ± 1 years. All of them had Bacille Calmette Guérin scar in their arms and about 31 (6.7%) had positive tuberculin skin test and 8 (1.7%) of them had positive test size 20-30 mm. One subject had sub-clinical pulmonary tuberculosis. We conclude, that adult with the history of Bacille Calmette Guérin vaccination in their neonatal age that had positive tuberculin skin test should be considered as new tuberculosis infection. (*Journal of Medical Sciences 9 (1): 46-50, 2009; doi: 10.3923/jms.2009.46.50*)

Meningococcal Meningitis Control in Iran: Five Year Comparative Study 2000-2004

A. Mehrabi Tavana and R.A. Ataei

The aim of this study was to compare the incidence and death rate of meningococcal meningitis among military and non military population in Iran from 2000 to 2004. All patients with clinical sign and symptoms of meningitis and para clinical findings were entered to the study from 21st March 2000 to 21st March 2004. Meningococcal meningitis was diagnosed on the basis isolation of the *Neisseria meningitidis* in culture. CSF samples were provided at admission before commencing antibiotic therapy. Based on laboratory standard procedure all isolates were identified and final analysis revealed total number of approved meningococcal meningitides. In this comparative study meningococcal meningitides were 65 and 1370 cases in military and non-military patients, respectively. However, the total recorded cases of death were 7 in military group and 173 in non-military population. The incidence rate were 1.22 and 0.6 in 100000 in non-military and military population, respectively. The incidence of meningococcal meningitis among military personnel shows a sharp decline due to compulsory vaccination at least 2 weeks before arriving to military training camps; nonetheless, sporadic cases of the disease do occur perhaps as a result of complement deficiency in patients themselves or very late vaccination (around 2-3 days before arriving to military training camps). The findings of this study, consistent time of vaccination could be effective factor in order to prevent the infection. (*Journal of Medical Sciences 9 (1): 51-54, 2009; doi: 10.3923/jms.2009.51.54*)

The Effect of Premedication Oral Naproxen on Post Operative Pain in Diagnostic Laparoscopy

A.D. Shahraki, J.H. Akhtar, R. Talakob and E. Moazam

The goal of this study is to investigate the effect of preoperative Naproxen on prevention of postoperative pain and analgesic consumption in females undergoing diagnostic laparoscopy. This is a randomized, double-blinded clinical trial. One hundred females (ASA I and II, aged 16-45 years old) scheduled for elective diagnostic laparoscopy under general anesthesia were selected by using a computer generated random list patients and were allocated into two equal groups. The patients received either 1 g Naproxen orally or a placebo tablet 90 min prior to anesthesia. Pain scores were significantly lower in Naproxen group compared with the placebo group, during the first 6 h postoperatively. There was also a significant difference between two groups in the analgesic consumption during 24 h after operation ($p = 0.004$). Preoperative oral Naproxen in diagnostic laparoscopy is effective for post operative pain relief and reduction of analgesic consumption. (*Journal of Medical Sciences 9 (1): 55-58, 2009; doi: 10.3923/jms.2009.55.58*)

Abdominal and Total Body Adiposity Markers in Asthmatic Patients

Mohamed Galal Morsi

This study aimed to evaluate the total and abdominal adiposity markers in asthmatic patients and their relation to asthma severity and PFTs. Seventy non-smoking adult asthmatics, aged 38.6 ± 11.8 , (42.9% male), were subjected to history, clinical and radiological examination, measurement of weight, BMI, waist circumference, waist/hip ratio, abdominal height and PFTs. Patients were classified by asthma severity into: 11 intermittent, 15 mild, 26 moderate and 18 severe asthmatics and categorized by BMI into: 25 normal weights, 16 overweight, 22 obese and 7 morbidly obese patients. There was significant increase in total and abdominal adiposity markers with direct linear correlations with increasing asthma severity. Obesity category showed significant inverse correlations with FVC%, FEV1%, TLC% and FRC% and direct linear correlations with DLCO% and DLCO/AV. The interactions between the adiposity markers and PFTs were analyzed using general linear model with MANOVA and revealed more significant associations for the abdominal than total adiposity markers with most PFTs. The results of the study suggest that adiposity markers increase with increasing asthma severity. The abdominal adiposity markers are more effective predictors

of obesity on PFTs than total adiposity markers. (*Journal of Medical Sciences* 9 (2): 59-69, 2009; doi: 10.3923/jms.2009.59.69)

Possible Involvement of Dehydroepiandrosterone and Cyproterone Acetate Central Role in Young and Aged Male Rats Fed on High Fat Diet

Nadia M.S. Arafa, Afaf M.A. Abo-Nour, Ahmed R. Ezzat and Elham H.A. Ali

The present study aims to investigate the effects of dehydroepiandrosterone (DHEA) and Cyproterone Acetate (CA) on the levels of monoamine neurotransmitters in the brain as well as on the levels of serum DHEA, testosterone and corticosterone in young and aged rats fed on high fat diet. These neurotransmitters and hormones were chosen because of their association with obesity, mood and cognitive functions. Young and aged male rats were divided into two normal basal diet and high fat diet fed groups. Each group was further divided into control, DHEA, CA and DHEA+CA. Treatments were given for either 2 or 8 consecutive weeks. DHEA treatment induced a significant reduction in the cortical contents of norepinephrine, epinephrine, dopamine and serotonin in aged rats, whereas young rats fed on a normal diet exhibited a significant elevation in serotonin level. Young rats fed on high fat diet exhibited a significant elevation of both norepinephrine and epinephrine. CA treatment induced an increase in cortical monoamine levels of young and aged rats fed on both types of diet. All treatments increased hypothalamic serotonin contents. DHEA treatment increased serum DHEA, corticosterone and testosterone levels, while CA treatment decreased corticosterone and testosterone levels without significance on the DHEA level in all treated groups. Treatment with DHEA+CA restored testosterone to its normal value. In general, there is a positive correlation between serum DHEA level and hypothalamic neurotransmitters and the levels of studied serum hormones. On the other hand, there was a negative correlation between serum DHEA level and cortical neurotransmitters. It is possible that DHEA induces its hypolipidemic action through stimulating the hypothalamic pituitary adrenal axis resulting in elevating corticosterone level with its known lipolytic action. The young rats fed on high fat diet were the most affected group as the diet caused inverse results in correlation between serum DHEA level and hypothalamic monoamine neurotransmitters and these results might have led to discourage the obesity, mood and cognitive functions. Also, treatment with the two drugs together would maintain normal levels of DHEA, corticosterone and testosterone. (*Journal of Medical Sciences* 9 (2): 70-80, 2009; doi: 10.3923/jms.2009.70.80)

Assessment of Reference Values for Selected Plasma Nutrients of Healthy University Students in Oman

Saud Iqbal, Majeed R. Al-Ani, Jamilah A. Al-Zadjali, Zahra Z. Al-Abri and Buthaina S. Al-Belushi

The objective of this study was to assess the reference intervals of specific nutrients in blood of Omani university students. Blood samples were collected from 302 randomly selected apparently healthy students (144 males and 158 females) aged 19-24 years. Plasma concentrations of total protein, albumin, calcium, phosphate, uric acid, glucose, triglycerides, total cholesterol and HDL-cholesterol were measured by Beckman Synchron diagnostic analyzer. Plasma globulin, A/G ratio and LDL and VLDL-cholesterol were calculated by standard methods. Reference intervals were estimated by determining the 5th-95th percentile of the population by truncating values for bottom and top 5% of the data. While there were no differences between mean plasma levels of male and female students for glucose, phosphate and total cholesterol, significant differences ($p < 0.001$) were found between male and female subjects for total protein, albumin, calcium, uric acid, triacylglycerol, HDL, LDL and VLDL-cholesterol. However, the reference values were within the published reference ranges for both sexes. The present results revealed a good agreement with the published data from other laboratories for all the parameters analyzed. The data presented here may serve as Gulf population-based reference intervals for the selected analytes in the GCC region. (*Journal of Medical Sciences* 9 (2): 81-86, 2009; doi: 10.3923/jms.2009.81.86)

Attenuation of Experimental Gastric Ulceration by Sulfadoxine-pyrimethamine in Albino Rats

S.B. Olaleye and K.O. Ajeigbe

The aim of the present study was to investigate the effect of the therapeutic dose of sulfadoxine-pyrimethamine on experimentally induced gastric ulceration in albino rats. Rats were given sulfadoxine-pyrimethamine (22.5 mg kg^{-1}) intramuscularly for 24 h after formation of ulcers induced by indomethacin or by acidified ethanol. Upon sacrifice, colorimetric assays were applied to determine the concentration of protein and mucus, activities of catalase and superoxide dismutase and lipid peroxidation in homogenized gastric mucosal samples. Sulfadoxine-pyrimethamine was observed to alleviate gastric lesions produced either by indomethacin or acidified ethanol. Also, the drug seemed to attenuate the indomethacin or acidified

ethanol induced effects on gastric juice volume, pH and acid output. On the other hand, thiobarbituric acid reactants (TBAR) was decreased and superoxide dismutase (SOD) and catalase (CAT) activities increased in the gastric mucosal samples, though, however, protein and mucus concentrations remained statistically unchanged. The use of sulfadoxine-pyrimethamine may be safe on the integrity of the stomach, especially in existing gastric ulcers. It ameliorates oxidative stress in the gastric mucosa caused by indomethacin and acidified ethanol. (*Journal of Medical Sciences* 9 (2): 87-92, 2009; *doi*: 10.3923/jms.2009.87.92)

Omega-3 Induced Change in Clinical Parameters of Rheumatoid Arthritis

S.A. Hosseini, F. Rahim and K. Mola

The aim of this study was showing the suppressive effect of fish oil supplementation on clinical symptom in rheumatoid arthritis. Forty two patients with Rheumatoid Arthritis (RA) entered a trial to determine the clinical and biochemical effects of dietary supplementation with fractionated fish oil fatty acids. A randomized study design with 4 and 8 week treatment periods were used. Treatment with non-steroidal anti-inflammatory drugs and with disease modifying drugs was continued throughout the study. There were significant improvement of RF ($p = 0.009$), ESR ($p = 0.003$) and serum CRP ($p = 0.002$) after 8 weeks fish oil supplement, but after 4 weeks the RF ($p = 0.004$) only showed significant improvement. This study shows that dietary fish oil supplementation is effective in suppressing clinical symptoms of rheumatoid arthritis. (*Journal of Medical Sciences* 9 (2): 93-97, 2009; *doi*: 10.3923/jms.2009.93.97)

Juvenile Idiopathic Arthritis, the Egyptian Experience

S. Salah, A. Hamshary, H. Lotfy and H. Abdel Rahman

To study the characteristics of Juvenile Rheumatoid Arthritis (JRA) in the Egyptian population, comparing it to other populations. We retrospectively studied the charts of 196 Egyptian children with Juvenile Rheumatoid Arthritis (JRA), who fulfilled the ILAR (International League Association for Rheumatology) classification of JIA and were followed up between 1990 and 2006 in the Children's Hospital, Cairo University. Their clinical features and laboratory data were collected and statistically analyzed. The male to female ratio was 1:1.09 and the mean age of disease onset was 6.257 ± 3.41 years. The mode of onset was oligoarticular in 41.3%, polyarticular in 34.7% and systemic in 24%. Chronic

uveitis was found in 5.6% of the children. Antinuclear antibody (ANA) status was determined in all patients and was positive in 21.7%. Amyloidosis was present in 1.76% of patients. The spectrum of clinical presentation of the disease in Egyptian children shows both some similarities and some differences from other populations, with oligo and polyarticular onset subtypes being commonest. The cause of these differences may be due, in part, to ethnic and environmental factors. Referral bias may be another cause. (*Journal of Medical Sciences 9 (2): 98-102, 2009; doi: 10.3923/jms.2009.98.102*)

Evaluation of ESBL Positivity Rates for *Escherichia coli* and *Klebsiella pneumoniae* Strains with the Sensititre ESBL Antimicrobial Susceptibility Plates in a Public Hospital, Turkey

F. Arabaci, M. Oldacay and D. Berber

Present study has been performed to evaluate Extended Spectrum Beta-Lactamase (ESBL) positivity rates and antimicrobial susceptibility patterns for *Escherichia coli* and *Klebsiella pneumoniae* strains in order to make some regulations on antimicrobial policy in our medical institute. We retrospectively evaluated 297 strains (204 *E. coli* strains and 93 *Klebsiella pneumoniae*) isolated from inpatient clinics and internal care units of Canakkale State Hospital between November 2007-October 2008 performed by Clinical Microbiology Laboratory Unit. ESBL positivity was found 31.86% (65/204) of *E. coli* strains and 33.33% (31/93) of *Klebsiella pneumoniae* strains. Resistance of *E. coli* strains to amoxicillin clavulanate (AMC), ciprofloxacin (CIP) and trimethoprim-sulfamethoxazole (SXT) was found common (33.8, 33.8 and 36.8%, respectively) on the other hand *K. pneumoniae* strains more resistant to AMC (43%) but less resistant to CIP and SXT (22.6 and 31.2%). It is also found that hospitalization in intensive care units is a risk factor for elevated ESBL production rates. (*Journal of Medical Sciences 9 (2): 103-107, 2009; doi: 10.3923/jms.2009.103.107*)

Anatomical Variation of Branchial Clefts: A Retrospective Study

N. Saki, F. Rahim, S. Nickakhlagh, H. Dehdashti and G. Saki

This retrospective study was conducted to define the relationship of between existences of the bronchial cysts and fistulas with gender of patients as well as

review of literature. Data were collected from the records of total 149 patient files (63 male and 86 female) with including history of having branchial cleft anomalies (cysts and fistulas), that admitted in ENT Department of Imam Khomeini and Apadana Private Hospitals between 1998 and 2008. The analyzed characteristics include gender of patient, anatomical location and type the anomaly. The most frequent type of branchial cleft anomalies in cyst and fistula disorders was second branchial with the values of 85.71% in 21 male patients, 37.5% in total 48 patients; 76.19% in 42 male patients, 31.68% in total 101 patients and values of 62.97% in 27 patients, 35.41% in total 48 cases; 76.27% in 59 female patients, 44.55% in total 101 cases, respectively. There was no significant difference in frequency ($p>0.05$) between male and female patients as well as the locations of anomalies in neck. The overall frequency of the second branchial cleft in different types of disorders such as cysts and fistulas in Southwest region of Iran is the highest, which was similar to international findings. In summary, anatomical location and type of congenital neck masses help narrow the differential diagnosis. (*Journal of Medical Sciences* 9 (2): 108-112, 2009; doi: 10.3923/jms.2009.108.112)

Study of Alleviating and Exacerbating Movement in Nurses with non Specific Chronic Low Back Pain: The Sahrman's Approach

S. Shabnam, S.Y.M. Jaafar and R. Fakher

This research was conducted to study of alleviating and exacerbating movement pattern and postures in nurses with non specific chronic low back pain. Study's population was 53 persons of woman nurses with non specific chronic low back pain. Assessment was done in 2 parts. The first part was consisting of questions about individual characteristics and another part was physical assessment based on Sahrman's approach. Results show that standing and walking were exacerbating symptoms more than another position and supine lying and sitting were alleviating symptoms more than another position. In non-specific chronic low back pain we don't observe special pathology or disease. But repetitive movements and sustained postures affect musculoskeletal and neural tissue and induced musculoskeletal pain. Human movements are done in movement patterns. So, if we can identify and correct the positions that changed movement patterns we can restore optimal musculoskeletal health. (*Journal of Medical Sciences* 9 (2): 113-117, 2009; doi: 10.3923/jms.2009.113.117)

Posterior Pillar Flap Palatoplasty: A New Surgical Technique for Treatment of Snoring: Initial Experience

Ahmed Mohamed Mohee Eldeen Al Bassiouny

In this study, a new surgical technique was designed, with preservation of the palatal dynamics, aiming to nearly abolish the postoperative pain and eliminate snoring recurrence. Patients were selected from Dar Al Shifa Hospital, Kuwait, complaining of snoring and fitting certain preoperative criteria. Thirty two patients were treated with this technique between April 2006 and March 2008, with minimum follow up period of six months. Snoring cured in 22 patients (69%), improved in 7 patients (22%) and failure in 3 (9%) cases. No recurrence of snoring was observed during the 6 months of follow up period. Postoperative pain reduced in both duration and severity. This new surgical technique may be an effective method in reducing postoperative pain and elimination of the possibility of palatal fibrosis and retraction, both medial and posterior and so reducing the incidence of postoperative recurrence of snoring owing to absence of raw surface at the free edge of the soft palate. (*Journal of Medical Sciences* 9 (3): 118-125, 2009; doi: 10.3923/jms.2009.118.125)

Arrhythmias as Early Post-operative Complications of Cardiac Surgery in Children at Cairo University

Yasser H. Kamel and M. Sewielam

Arrhythmias are a recognized complication of cardiac operations in pediatrics. The aim of the study was to assess the incidence and type of arrhythmias in early post pediatric cardiac surgery patients and to analyze possible risk factors. This is a retrospective study conducted on patients who were followed in post-operative clinic at Cairo University Children's Hospital during the period from September 2007 till January 2009. The following data were collected for each patient; demographic data, pre-operative arrhythmia present, surgical data and post-operative intensive care course. During the study period, 110 patients were enrolled; including 15/110 who had palliative surgery, while 95 out of 110 had corrective surgery. Thirty patients (27.2%) developed post-operative arrhythmias and most of them on day one (60%). Of them 20/30 (66.6%) were cyanotic, while 10/30 (33.3%) were acyanotic. Two (6.6%) had palliative surgery, while 28/30 (93.3%) had corrective surgery. The most common acute post-operative arrhythmias were junctional ectopic tachycardia and Supraventricular tachycardia (33.3%) for each. Out of 95 patients who had corrective surgery, 28 (29.4%) developed arrhythmias most of them (96.4%) within first 48 h post-operatively.

they were early after repair of tetralogy of Fallot (18.1%) and (12.1%), respectively. Risk factors for arrhythmias in corrective surgery; such as young age, lower body weight and cyanosis ($p < 0.05$), longer cardiopulmonary bypass time ($p < 0.05$), redooperation ($p < 0.01$), post-operative acidosis, high inotropic support, hypotension and mechanical ventilation ($p < 0.01$), patient with moderate operative risk, post-operative higher doses of inotropic support, longer ventilation time were statistically significance with $p < 0.001$. Younger age, lower body weight, cyanosis, longer cardiopulmonary bypass time, Re-do procedure, acidosis, mechanical ventilation and high inotropic support are the risk factors for post-operative arrhythmias. Junctional ectopic tachycardia and supraventricular tachycardia were the most common post-operative arrhythmias. (*Journal of Medical Sciences* 9 (3): 126-132, 2009; *doi*: 10.3923/jms.2009.126.132)

Urine Level of Interleukin-8 as a Non-Invasive Marker for Diagnosis of Vesicoureteral Reflux in Children

A. El Shenoufy, M. Issa, M. Abd Elfatah and N. Elabd

The objective of this study is to assess the urinary levels of IL-8 as a noninvasive marker of VUR in children after resolution of acute UTI. The study was conducted over a 6 month period on 45 children, aged 1-5 years. They were suffering from symptoms of UTI and attending the Pediatric Outpatient and Urology Clinic at Pediatric Specialized Hospital. These children underwent renal ultrasonography (RUS) and voiding cystourethrography (VCUG). The patients were subdivided into two groups: group A ($n = 13$), children with proven VUR and group B ($n = 32$), children with negative investigation for VUR. Thirty-nine healthy children with no history of UTI or a known underlying condition that might impair renal function were recruited as control group (group C). Urinary levels of IL-8 were evaluated in all cases using a sandwich enzyme-linked immunosorbant assay for the quantitative measurement of urinary IL-8. To avoid dilution effects, urinary levels of IL-8 were expressed as the ratio of cytokine-to-urinary creatinine. The mean urinary IL-8 levels standardized to the urinary creatinine levels were significantly higher in group A than in group B and C (p -value < 0.001). No significant differences were observed between Group B and C (p -value > 0.05). A positive correlation was noted between the urinary IL-8/creatinine concentrations and reflux grade ($r = 0.338$, p -value > 0.05). While, no statistical significant difference was observed between the level of urinary IL-8/creatinine and age and sex of the patients and RUS abnormalities. Optimum limit of urinary IL-8/creatinine to establish presumptive diagnosis of VUR obtained by ROC analysis was found to be $10 \text{ pg } \mu\text{mol}^{-1}$, with sensitivity and specificity of 84.6 and 64.8%, respectively. This study demonstrates that urinary IL-8 levels are higher in children with VUR

even in the absence of UTI and that it may be considered as an effective noninvasive marker for screening of VUR with high sensitivity and adequate specificity. (*Journal of Medical Sciences* 9 (3): 133-139, 2009; doi: 10.3923/jms.2009.133.139)

Fracture Strength in Teeth Restored with Three Dowel Core Systems Before and after Load Cycling: An *in vitro* Study

N. Asadzadeh, J. Ghanbarzadeh and A.R. Mohajeri

The aim of this *in vitro* study was to compare the fracture resistance and failure mode of endodontically treated teeth restored with three different post and core systems before and after load cycling. In this interventional study, forty-two maxillary incisors selected. After root treatment, they were randomly divided into six groups of 7. In group 1 and 2, casting post and core was used. In group 3 and 4, Dentatus-posts and composite cores were used and in group 5 and 6, FRC posts were used. Cyclic loading was performed in group 2, 4 and 6. There after compressive load was applied at a 45° angle to the long axis of the tooth at a crosshead speed of 1 mm min⁻¹ until the fracture occurred. One-way ANOVA and Tukey-Karmer test were used to determine the difference of the failure loads between the groups. The load cycling had no statistically significant effect on fracture strength among groups. Teeth restored with cast posts-and-cores exhibited significantly higher resistance to fracture than para post group (p<0.05). In cast post and core group and para post group, fracture mainly occurred in the root and it was unrestorable but in FRC post and composite group, it mainly occurred in the composite cores. Fracture resistance of teeth restored with cast post and core, dentatus post and FRC pose were not affected by load cycling. The created fractures in casting post and core and dentatus post were undesirable and in root, which made the restoration of the teeth impossible. (*Journal of Medical Sciences* 9 (3): 140-145, 2009; doi: 10.3923/jms.2009.140.145)

Frequency of Cytotoxin Associated Gene A(+) *Helicobacter pylori* in Peptic Ulcer Disease: Difference Between Gastric and Duodenal Ulcer Disease

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In this study, we evaluated the frequency of cytotoxin associated gene A (*cagA*) positive strains of *Helicobacter pylori* in patients with PUD-either Gastric Ulcer (GU) or Duodenal Ulcer (DU) in Iran. Seventy two patients (46 males and 26

females), who underwent endoscopy and diagnosed with PUD were considered for inclusion into present study. The presence of plasma IgG antibodies to *H. pylori* and *cagA* were determined by ELISA. Thirty nine patients diagnosed with DU were available for analysis of which 32 of them were positive for *H. pylori* antibodies (32/39: 82%). Twenty cases from infected DU samples were positive for *cagA* antibodies (20/32: 62.5%). Thirty three patients diagnosed with GU were available for analysis of which 19 were positive for *H. pylori* antibodies (19/33: 57.7%). Twelve cases from infected GU samples were positive for *cagA* antibodies (12/19: 63.2%). These results showed that duodenal ulcer has strong association with *H. pylori* infection than gastric ulcer (82 vs. 57.7%), but in the case of *cagA* positive strains of *H. pylori*, we found same association (62.5 vs. 63.2%, respectively). *H. pylori* and *cagA* (+) *H. pylori* prevalence in the GU and DU groups was found to be independent of age, sex and BMI ($p>0.05$). (*Journal of Medical Sciences* 9 (3): 146-150, 2009; doi: 10.3923/jms.2009.146.150)

Study of Possible Genetic Factors Determining the Clinical Picture of Thalassemia Intermedia

N. Kaddah, S. Rizk, A.M. Kaddah, K. Salama and H. Lotfy

The aim of this study was to evaluate some of the genetic factors involved in ameliorating the severity of β thalassemia among a group of Egyptian children with thalassemia intermedia. The study included 22 patients who were diagnosed on clinical basis as β thalassemia intermedia. Their age ranged between 3 and 21 years. They were screened for the most common seven genetic mutations of β -thalassemia evaluated in Egyptian studies: IVS1-6, IVS1-110, IVS2-1, IVS2-745, IVS1-1, -87 and codon 39, also screened for -158 Xmn polymorphism and co-inheritance of α -gene deletions. Present results showed that, the frequency of IVS1-6 was found to be 22.7% and of IVS1-110 was 18.2%, while IVS2-1, IVS2-745, IVS1-1, -87 and codon 39 were undetected. The -158 Xmn polymorphism was detected in 2 out of 22 cases (9%) and co-inheritance of α -thalassemia was 5 out of 22 cases (22.7%) mm. This study showed that, the ameliorating factors in β -thalassemia intermedia may include the inheritance of mild β thalassemia allele as IVS1-6, the presence of -158 Xmn polymorphisms or co-inheritance of α -gene deletions. Identification of genetic pattern in thalassemia intermedia is essential for genetic counseling and prenatal diagnosis and also for the proper management of those patients. (*Journal of Medical Sciences* 9 (3): 151-155, 2009; doi: 10.3923/jms.2009.151.155)

Evaluation of Fracture Resistance in Endodontically Treated Teeth Through Four Restorative Methods: An *in vitro* Study

N. Asadzadeh, M. Seify and R. Heidarian

The purpose of this study is to compare the fracture strength of anterior teeth through four different methods. In this experimental study 24 central maxillary teeth were used. The crown of them was cut. They were divided into four groups. After preparing a post space, in the first group the FRC post with composite core used and then celluloid crown was used. In the second group, as the first one with this difference the crown was metal. In the third group the dentatus pin with composite core used and the crown was formed by celluloid. In the fourth group the way was as the third one but a metal crown issued. The examples mounted in an acrylic blocks and were pressed in Instron machine, as well the press power was calculated. The results were analyzed with one-way variance and Duncan test. There was no significant relationship between the break points of the four groups ($p = 0.44$). The most amount of fracture load was for the first group and the lowest place was for the second group. Crown doesn't provide more strength for tooth in this condition. (*Journal of Medical Sciences* 9 (3): 156-160, 2009; *doi: 10.3923/jms.2009.156.160*)

Hepatoprotective Action of Zerumbone Against Paracetamol Induced Hepatotoxicity

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This study is conducted to investigate the possible effect of zerumbone towards hepatoprotective activity against paracetamol intoxication. Male Sprague-Dawley rats were randomly divided into six groups consisted of 3-5 animals. Group I was administered with 0.2% zerumbone for 14 days prior to 3 g kg⁻¹ paracetamol administration. Group II was given paracetamol only and group III was given 200 mg kg⁻¹ of silymarin and paracetamol. Group IV was administered with zerumbone only and finally group V was treated with corn oil and 40% sucrose buffer as vehicle treated group. Animals were sacrificed at 4 and 24 h post treatment following diethyl ether. There was no significant changes in liver enzyme activities as well as histological observations at 4 h after paracetamol administration. Meanwhile, 24 h after paracetamol administration, the level of alanine aminotransferase (ALT), aspartate aminotransferase (AST) and alkaline

phosphatase (ALP) were found to be reduced in rats that were pretreated with zerumbone compared to group that was treated with paracetamol only. Correspondingly, there was no hepatocellular necrosis observed in rats that were pretreated with zerumbone. The results obtained may have suggested that zerumbone exert hepatoprotective activities against paracetamol induced hepatotoxicity. (*Journal of Medical Sciences* 9 (3): 161-164, 2009; doi: 10.3923/jms.2009.161.164)

Inherent Resistance to Epidermal Growth Factor Receptor Antibodies in Refractory Metastatic Colorectal Cancer

Khaled M. Galal, Khaled Zaghloul and Abdel Monem M. Mourad

Frequency of Epidermal Growth Factor Receptors (EGFR) tyrosine kinase mutations is very low in metastatic colorectal cancer. Mutations in other genes in EGFR pathway, such as PI3K, K-ras and B-raf are more frequent in colorectal cancer but their relationship with response to EGFR-targeted antibodies is less well studied. Thirty-five patients with metastatic colorectal cancer were randomized to receive cetuximab with or without oral sorafenib. Patients were stratified according to tumor K-ras status. Patients received cetuximab IV weekly for 4 week and oral sorafenib twice daily on days 1-28, with recycling every 4 weeks. Primary end point was response rate (partial and complete), while secondary end points were adverse effects, time to progression and overall survival. Wild K-ras cases constituted 64.7 and 61.1% of cetuximab (E) and cetuximab-sorafenib (EN) groups, respectively. Partial response was higher in (EN) that constituted 33.3% compared to 17.6% in cetuximab group ($p = 0.44$). Multivariate analysis revealed that K-ras status had statistically significant effect on progression-free survival. Progression-free survival had higher statistically significant difference in wild K-ras compared to mutant K-ras cases ($p = 0.0001$). Median overall survival was 7 and 5 months in (EN) and (E) groups respectively ($p = 0.49$). The study reflects that mutation status of molecular markers such as K-ras and B-raf is a predictor of response, so genotyping of tumors is needed for defining the patient population that is likely to benefit from targeted therapy. Combination of therapy that simultaneously targets K-ras and B-raf could be a useful approach to increase number of patients who may benefit from anti-EGFR therapy, however, large scale prospective randomized trials are needed to properly determine which patients are best candidates for these targeted agents. (*Journal of Medical Sciences* 9 (4): 165-174, 2009; doi: 10.3923/jms.2009.165.174)

Reliability and Validity of Turkish Version of the Impact on Family Scale: Assessment of Depressive Symptoms and Quality of Life in Mothers with Cerebral Palsied Children

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The pragmatic aims of this study were to investigate the reliability and validity of the Turkish version of the Impact on Family Scale (IFS) and to evaluate the impact of having disabled children on mothers. Two hundred and forty seven mothers with cerebral palsied children completed the Turkish version, Beck Depression Inventory (BDI) and Nottingham Health Profile (NHP). Fifteen mothers also completed the Turkish version on two occasions, one apart, to evaluate the test-retest reliability. Cronbach's alpha and Interclass Correlation Coefficient (ICC) were calculated, respectively. Concurrent validity was examined by comparing with two instruments: BDI and NHP. Internal consistency was 0.74. When the coping items were excluded, the results showed that its Cronbach's alpha was excellent (0.81). ICC score for the test-retest reliability coefficient was 0.79. The findings indicate that the Turkish version is a reliable tool for assessing the impact of having a cerebral palsied child on Turkish speaking mothers living in Turkey. (*Journal of Medical Sciences* 9 (4): 175-184, 2009; doi: 10.3923/jms.2009.175.184)

Precision and Accuracy of Three Blood Glucose Meters: Accu-Chek Advantage, One Touch Horizon and Sensocard

W.K.B.A. Owiredu, G. Amegatcher and N. Amidu

This study evaluated the accuracy and precision associated with the use of three popular alternative-site blood glucose monitors, Accu-chek Advantage, Onetouch Horizon and Sensocard, using forearm venous blood samples and capillary blood samples. The study was conducted from January to March, 2009 at the Komfo Anokye Teaching Hospital, Kumasi. One hundred and ninety consenting subjects were included in the study. The blood glucose levels were analyzed on glucose meters; Accu-chek Advantage, Sensocard and Onetouch Horizon by finger stick, using amperometry Technology. At the same time venous blood glucose was analyzed using the WHO reference Glucose Oxidase Method (GOD). The mean value generated by the WHO reference method (7.91 ± 0.35) was not significantly different ($p = 0.2816$) from that produced by the Accu-chek Advantage (8.46 ± 0.36), Sensocard (7.72 ± 0.35 ; $p = 0.7028$) and Onetouch Horizon

(7.97±0.35; p = 0.9044). Bland-Altman analysis indicates that Onetouch Horizon and Accu-chek Advantage have the tendency of overestimating blood glucose with a bias of -0.1 and -0.5, respectively. Sensocard could under-estimate with a bias of 0.2. In terms of rating, while all the glucose meters gave precisions at about the same level (i.e., 1.0), Onetouch Horizon is generating the closest value to the reference method with a difference between mean of -0.06, followed by Sensocard of 0.19 and Accu-chek Advantage with a value of -0.55. The precision of the Accu-chek Advantage, Onetouch Horizon and Sensocard for blood glucose monitoring from about 3.1-33.3 mmol L⁻¹ is good. However, the Accu-chek Advantage has the tendency to overestimate at the hypoglycaemic levels. The Accu-chek Advantage is capable of estimating both capillary and venous blood glucose to the same level of accuracy. The Onetouch Horizon and Sensocard are however incapable of efficiently estimating venous blood glucose. (*Journal of Medical Sciences* 9 (4): 185-193, 2009; *doi*: 10.3923/jms.2009.185.193)

Antioxidant and Blood Brain Barrier Status in Cerebrospinal Fluid of Bacterial Meningitis Rat Model after Vancoplus Treatment

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The aim of this study was to compare the efficacy of ceftriaxone, vancomycin and its fixed dose combination of ceftriaxone plus vancomycin (Vancoplus) for the treatment of meningitis induced by methicillin-resistant *Staphylococcus aureus* (MRSA) in rat model. The MRSA strain ATCC 43300 was used to induce meningitis in rat model. The rats were fed standard pelleted diet and water *ad libitum*. Thirty rats were divided into five groups containing six rats in each group. The vancomycin group received 14.2 mg kg⁻¹ b.wt./day, the ceftriaxone group received 28.57 mg kg⁻¹ b.wt./day, the vancoplus group received 42.8 mg kg⁻¹ b.w./day, control and infected group received normal saline. Present findings showed that activities of antioxidant enzymes such as superoxide dismutase and catalase were significantly increased (p<0.001) along with decreased (p<0.001) in lipid peroxidation (malondialdehyde) level in vancoplus treated group as compared to ceftriaxone and vancomycin. The level of adenylate kinase and xanthine oxidase enzymes also become lowered in vancoplus treated group as compared to ceftriaxone and vancomycin. The levels of total protein, calcium and phosphorus were also increased significantly (p<0.001) along with decreased (p<0.001) in glucose level in cerebral spinal fluid of infected group as compared to control group. After treatment with vancoplus, levels of total protein, calcium

and phosphorous become reduced along with raised in glucose level as compared to ceftriaxone and vancomycin group. These findings indicate that vancoplus is more effective than ceftriaxone and vancomycin alone for improvement of oxidant and antioxidant levels, it also crosses the blood brain barrier more faster than ceftriaxone and vancomycin alone and cure bacterial meningitis. (*Journal of Medical Sciences* 9 (4): 194-201, 2009; **doi**: 10.3923/jms.2009.194.201)

Mosquito-Degradative-Potential of Cockroach and Mosquito Borne Bacteria

F.O. Omoya, B.E. Boboye and F.A. Akinyosoye

The type of bacteria present on two insects (cockroach and mosquito) were investigated. These microorganisms were screened for microbial control of mosquito employing their degradative ability at various microbial cell loads. The degradation of the mosquito was observed spectrophotometrically for an incubation period of 5 to 7 days. Six bacterial species (*Escherichia coli*, *Pseudomonas aeruginosa*, *Bacillus cereus*, *Serratia marcescens*, *Staphylococcus aureus* and *Aerobacter aerogenes*) were isolated from cockroach. Mosquito borne *E. coli*, *P. aeruginosa*, *B. cereus* and *Staph. aureus*. All the bacteria digested the mosquito with activity ranging from 0.02 to 1.27. Microorganisms associated with cockroach showed higher degradation activity (0.02-1.27) during the incubation than those obtained from mosquito (0.02-1.00). (*Journal of Medical Sciences* 9 (4): 202-207, 2009; **doi**: 10.3923/jms.2009.202.207)

Epidemiology of Strains in Greek Facilitation Classes

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The purpose of the present investigation was to record epidemiologically the strains that occurred in students of the Athletic Facilitation Classes (AFC). The study was carried out at National Level from September 2006 to May 2007 and during this period, we followed 7455 male and 4921 female student-athletes. The data that were recorded by the physical education teachers of the AFC, were registered in SPSS and they were analyzed with χ^2 non-parametric test. During the study a percentage of 19.6 % of total (n = 223) of injuries were strains. One hundred and sixty four (n = 164) strains (73.4%) occurred in the male and fifty

nine (n = 59, 26.5%) in female student-athletes ($p < 0.04$). Most strains were recorded in the male than in female student-athletes that attended in AFC, which functioned in the urban regions of prefectures (80.5 vs. 19.5, $\chi^2 = 12.04$, $df = 1$, $p < 0.001$). A significant number of strains occurred during the months of November (82.3 vs. 17.7, $\chi^2 = 4.69$, $df = 1$, $p < 0.03$), while the sports in which most strains occurred were soccer, track and field, basketball, bavalleyball and handball. The training surface on which most strains occurred was the synthetic floor, natural grass and the parquet. It is concluded that the epidemiology of the strains in the AFC, have the same patterns as in the current literature is described. (*Journal of Medical Sciences* 9 (4): 208-213, 2009; **doi**: 10.3923/jms.2009.208.213)

Leptin, Insulin and Glucose Levels in Menopause Women During Acute Myocardial Infarction

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The purpose of this study was to measure leptin, glucose and insulin concentration in the blood of patients during ST elevation acute myocardial infarction and to compare them with values obtained from normal subjects. Leptin concentration was measured in 31 menopause Jordanian women patients (50-72 years of age) with acute myocardial infarction and 19 normal menopause women (49-64 years of age). Leptin concentration were measured using two sites immunoradiometric assay (IRMA) principle. In normal (N = 19) leptin concentration was 15.5 ± 5.4 ng mL⁻¹ (Mean \pm SD). While, in patients with acute myocardial infarction was 22.9 ± 5.7 ng mL⁻¹ (Mean \pm SD). Data showed significant difference in both groups ($p = 0.000$). In addition insulin concentrations were significantly increased in patients with acute myocardial infarction (74.2 ± 10.8 vs. 38.8 ± 14.5 pmol L⁻¹, $p = 0.000$) compared to the control group. Glucose concentrations were lower in patients with acute myocardial infarction (107.5 ± 7.2 vs. 166.9 ± 11.7 mg dL⁻¹, $p = 0.000$) compared to the normal group. Also, both total cholesterol and triglyceride were significantly higher in patients with acute myocardial infarction compared to the control group. It was concluded that leptin, insulin, cholesterol and triglyceride concentrations were significantly higher and glucose level was significantly lower in patients with acute ST elevation myocardial infarction compared to normal group. (*Journal of Medical Sciences* 9 (4): 214-218, 2009; **doi**: 10.3923/jms.2009.214.218)

Circulating Concentrations of Leptin Hormone, Soluble Leptin Receptor and Free Leptin Index in Obese Egyptian Women Before and after Diet Therapy

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It has been proposed that obesity is associated with resistance to the biological effects of leptin hormone. The aim of this study was to demonstrate the effect of obesity on both serum leptin and its soluble receptor and to evaluate the effect of consumption of a special food formula combined with a restricted diet for obesity management. Thirty-two obese women volunteered to test a natural food formula in combination with a balanced hypo caloric-diet (both supply 900-1000 Kcal day⁻¹) shared in a short term study, which lasted for four weeks. The formula was composed of whole sweet potato and carrot which were reduced to a flour form in 2:1 ratio and consumed as a pudding (20 g flour +100 mL boiled skimmed milk) for daily breakfast. Sweet potatoes and carrots are considered as a good source of dietary fibers, complex carbohydrates, antioxidants and phytochemicals. Subjects were divided into twenty-two obese women (group 1) with mean age (41.8±2.91 years) and body mass index (34.87±1.21), who followed the diet plus the pudding mixture; while ten obese women as a control (group 2) had a mean age of (43.4±2.28) and a body mass index of (36.57±1.31); who only followed the same diet. Relevant anthropometric measurements together with some biochemical parameters were determined before, after two and four weeks from the start of the regimen. Results showed although both groups lost weight comparably, group 1 (p<0.01,-3.55%), group2 (p<0.01,-2.01%), yet there were differences between them regarding serum leptin where in group 1 it was significantly decreased (p<0.01, -29.77%), with a concurrent increase in the serum soluble leptin receptor (p<0.05, +15.99%); in contrast to decreased levels of both leptin (-3.33%) and soluble leptin receptor (p<0.001, -5.05%) in group 2. Triglycerides levels were decreased (P<0.05,-22.62%) in group 1 in contrast to an increase (p<0.05, +39.40%) in group 2. In conclusion, incorporating custom-tailored food supplement in a slimming diet aiming at a quality weight loss that provides a healthier stable and durable metabolic environment should be considered. (*Journal of Medical Sciences* 9 (5): 219-226; doi: 10.3923/jms.2009.219.226)

Immunological Effects of Honey Bee Venom in Mice with Intracerebral Candidiasis

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Bee Venom (BV) is a natural substance, reported to booster the immune system. This study aimed at evaluating the effects of bee venom in stimulation of the immune system in mice infected with intracerebral Candidiasis probing for its possible use in treatment of this ailment. *In vivo* study included three groups of mice; bee venom-treated *Candida* infected group, untreated *Candida*-infected group and control group. Mice in the first two groups received intracerebral (i.c.) inoculation of *C. albicans*, while the control mice were inoculated i.c. with sterile saline. Mice of first group, the BV-treated group; received thereafter SC injection of BV for 4 days. On 5th day, mice of all groups were sacrificed and *Candida* infection was evaluated by culture of homogenized brain tissue on Sabouraud dextrose agar. Stimulation of the immune system was assessed by determining TNF- α and IFN- γ mRNA expression in splenocytes by real-time PCR (RT-PCR). In the *in vitro* study, direct effect of BV as antifungal agent and its effect on phagocytic function of neutrophils were evaluated. The results revealed that BV-treated mice had significantly low fungal load in the brain, with significantly high TNF- α but insignificantly high IFN- γ mRNA expression in splenocytes. BV had no direct antifungal effect, but it enhanced phagocytic activity of neutrophils. It was concluded that treatment with BV could result in significant therapeutic effect in intracerebral Candidiasis and thereby could be effective in resistant life-threatening infections. (*Journal of Medical Sciences* 9 (5): 227-233, 2009; doi: 10.3923/jms.2009.227.233)

IS Balanced Diet Has Effect On Epileptics?

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This study the effect of balanced diet on the cognition, growth, biochemical and electroencephalogram changes among epileptic children and adolescents, this study was carried on 100 epileptic children and adolescents of both sexes, their ages ranged between 11 -14 years, food consumption for all cases was calculated. All cases were grouped into two groups, 50 cases were under special balanced diet program (group I) and 50 cases were left on their regular diet (group II). All cases were subjected to complete clinical and neurological examination, anthropometric assessment and behavior assessment. Biochemical assessment for serum calcium, zinc, copper and hemoglobin were assessed. Electroencephalogram was done for all cases at the start and by the end of the

study. Present results showed a significant changes in psychometric behavior between both groups. Patients of group II show highly significant decrease in levels of hemoglobin, copper, zinc and calcium, in comparison to patients of group I. A highly significant increase in anthropometric measurements among patients of group I, as compared to patients of group II. Regarding changes in electroencephalogram there was an improvement in 22% of cases of group I as compared with group II which showed an improvement in only 6% of cases. Then we concluded that children and adolescents with epilepsy are often more sensitive to the world around them than others, therefore it is important to ensure that their nutrition is as well balanced as possible, for better life, improvement and efficacy for antiepileptic drugs. (*Journal of Medical Sciences* 9 (5): 234-239, 2009; doi: 10.3923/jms.2009.234.239)

Bioactive Potential of Coral Associated Gastropod, *Trochus tentorium* of Gulf of Mannar, Southeastern India

S. Anbuselvi, C. Chellaram, S. Jonesh, L. Jayanthi and J.K.P. Edward

Whole body meats of mollusc, *Trochus tentorium* was extracted with four solvents such as acetone, ethyl acetate, dichloromethane and methanol. Maximum antibacterial inhibition zone was exhibited from acetone crude extract of *T. tentorium* against human pathogen (*Streptococcus pneumoniae* 8 mm). The 100% column purified acetone fraction of *T. tentorium* showed higher activity against human pathogens like *Klebsiella pneumoniae* (7 mm). The minimal inhibitory concentration of the 100% acetone fraction of *T. tentorium* was found to be lower for the pathogens, *E. coli* (0.08 mg), *Streptococcus pneumoniae* (0.08 mg), *Staphylococcus aureus* (0.09 mg) and *Vibrio cholerae* (0.09 mg), hence 100% acetone fraction of the extract of *T. tentorium* was deemed as potent bioactive compounds against those pathogens. (*Journal of Medical Sciences* 9 (5): 240-244, 2009; doi: 10.3923/jms.2009.240.244)

Comparative Studies on Susceptibility and Minimum Inhibitory Concentration of Potentox, a Fixed Dose Combination of Cefepime Amikacin in *Proteus vulgaris*, *Escherichia coli* and *Bacillus subtilis*

S.M. Shrivastava and M. Chaudhary

Present study was undertaken to evaluate antimicrobial response of potentox against *Proteus vulgaris*, *Escherichia coli*, *Bacillus subtilis*. Minimum Inhibitory Concentration (MIC) and Antibiotic Susceptibility Test (AST) of potentox was

performed on test organisms in comparison with cefepime and amikacin individually. In case of *P. vulgaris*, *E. coli*, *B. subtilis*, MIC were found to be 0.25, 0.5 and 1 mg L⁻¹, for potentox, respectively. In cefepime alone the MIC was found to be 1, 2 and 8 mg L⁻¹, respectively and in amikacin alone the MIC was found to be 2, 2 and 4 mg L⁻¹. The AST result shows that potentox is having more lytic zone than cefepime and amikacin alone. In organisms under study, antimicrobial response of Potentox was found to be better than any of its components. (*Journal of Medical Sciences* 9 (5): 245-248, 2009; doi: 10.3923/jms.2009.245.248)

Study of Mucoadhesive Microspheres Based on Pregelatinized Cassava Starch Succinate as a New Carrier for Drug Delivery

S. Surini, V. Anggriani and E. Anwar

The objective of this research is to study the application of Pregelatinized Cassava Starch Succinate (PCSS), a physically and chemically modified starch and the combinations with Carbopol 974P and hydroxypropylmethyl cellulose (HPMC) for preparing mucoadhesive microspheres by the spray-drying technique. The obtained-microspheres were characterized, including: morphology, particle size distribution, entrapment efficiency and mucoadhesive strength on the stomach and intestinal of rats. In addition, the *in vitro* drug release from the microspheres was performed in pH 1.2 and 7.2. The results showed that the produced microspheres of PCSS and its combination with HPMC and Carbopol 974P were irregular shape with a rough surface morphology and have particles sizes range of 2.5-28 µm. Propanolol hydrochloride (PH) was incorporated into the microspheres with an efficiency of range between 84-100%. On gastric mucosa, the microspheres of PCSS, HPMC and PCSS-HPMC were more mucoadhesive than the microspheres of Carbopol 974P and PCSS-Carbopol 974P. On the other hand, all kinds of the microspheres show good mucoadhesive properties on intestinal mucosa. Furthermore, the drug release from the microspheres produced pH-dependent extended-release in pH 1.2 HCl and pH 7.2 phosphate medium. During 8 h *in vitro* release study, the release of propanolol hydrochloride from the microspheres of PCSS-HPMC and PCSS-Carbopol 974P in pH 7.2 was slower than that in pH 1.2. The findings obtained revealed that PCSS microspheres have good mucoadhesive property on both of gastric and intestinal mucosa. Moreover, the addition of HPMC and Carbopol 974P to PCSS hydrophilic matrix significantly extended the drug release. (*Journal of Medical Sciences*, 9 (6): 249-256, 2009; doi: 10.3923/jms.2009.249.256)

Relationship between Pain Intensity, Depressive Symptoms, Disability Level and Physical Functioning in Chronic Low Back Pain Turkish Patients: Gender Differences

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This study was conducted to examine the relationship between pain intensity, disability, emotional status and physical functioning and compare this relationship in men and women with Chronic Low Back Pain (CLBP). This study included 118 subjects (73 women and 45 men), with a mean age of 43.16 ± 8.74 years. A Visual Analog Scale (VAS) was used to detect pain intensity. Depressive symptoms were evaluated using by the Beck Depression Inventory (BDI). The Oswestry Disability Index (ODI) was used to determine disability score of the subjects. Physical functioning was evaluated with the use of the Fifty-Foot Walk (FWS), the Sit to Stand (STS) and the Bend Forward Test (BFT). Significant differences were found between the females and males in all outcome measures ($p \leq 0.05$). The results showed that the women had higher pain intensity, depression and disability scores compared with men ($p = 0.0001$). On the other hand, the women had lower physical functioning test scores ($p = 0.0001$). The investigators detected the presence of a significant positive correlation between physical functioning measures and pain intensity, disability level and emotional status in both males and females. (*Journal of Medical Sciences, 9 (6): 257-263, 2009; doi: 10.3923/jms.2009.257.263*)

Incidence of Diabetic Nephropathy in Southern Nigeria

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Diabetic nephropathy is a progressive kidney disease caused by angiopathy of capillaries in the kidney glomeruli. This study was designed to find out the frequency of occurrence of renal complications in diabetic patients. This was achieved by examining for the presence of microalbuminuria using Albumin Creatinine Ratio (ACR) in a spot urine. A total of 95 asymptomatic diabetic patients and 19 non-diabetic controls were used for the study. These patients were grouped into two: those with analbuminuria and others with microalbuminuria using the $ACR = 30 \text{ mg g}^{-1}$, which approximates 24 h urinary albumin excretion in mg. Results obtained showed mean significant increases in the ACR in the diabetic group ($48.58 \pm 4.14 \text{ mg g}^{-1}$) when compared to the control ($22.76 \pm 5.14 \text{ mg g}^{-1}$;

$p < 0.05$). There were also mean significant increases in ACR ($48.58 \pm 4.14 \text{ mg g}^{-1}$; $p < 0.05$) with increase in glycosylated haemoglobin ($5.90 \pm 0.26\%$; control: $3.72 \pm 0.13\%$) as well as with duration of diabetes (4.17 ± 0.63 years) amongst the diabetic patients. Our analysis thus, indicated that there was a significantly higher ACR ($54.09 \pm 8.87 \text{ mg g}^{-1}$; $p < 0.05$) in men than in women ($45.65 \pm 4.24 \text{ mg g}^{-1}$). The study also showed that the incidence of nephropathy amongst diabetics in Southern Nigeria is 72.63%. (*Journal of Medical Sciences*, 9 (6): 264-269, 2009; doi: 10.3923/jms.2009.264.269)

Asymptomatic Bacteriuria in Patients on Antiretroviral Drug Therapy in Calabar

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The prevalence of asymptomatic bacteriuria was carried out on 600 HIV Positive patients on antiretroviral drug therapy and 200 apparently healthy individuals (control subjects) in Calabar, Nigeria to determine the current status of asymptomatic bacteriuria among this category of patients. Urine samples were collected in sterile universal bottles and analyzed using standard laboratory diagnostic techniques and cultured using Lee and Williams technique. CD₄ cell counts were also measured. The modified Kirby-Bauer sensitivity testing technique was used for antimicrobial testing of the isolates. Patients on antiretroviral therapy had 25.3% asymptomatic bacteriuria while control subjects had 13%. There was a statistically significant difference between the prevalence of infection in patients on antiretroviral therapy and the control subjects ($p = 0.0013$). Males had a higher prevalence than female subjects but there was no statistically significant difference between the occurrence of infection by gender ($p = 0.66$). The commonest urinary pathogens isolated amongst the test subjects were *Staphylococcus aureus* (87.2%) followed by *Escherichia coli* (84%) and *Candida albicans* (80.8%) while *Candida albicans* (19.2%) was the commonest isolated organism in control subjects followed by *E. coli* (16%) and *S. aureus* (12.8%). Subjects with CD₄ count of less than $200 \times 10^9 \text{ L}^{-1}$ showed the highest rate of asymptomatic bacteriuria of 92.3% among the test subjects while CD₄ count $> 600 \times 10^9 \text{ L}^{-1}$ had the highest rate of asymptomatic bacteriuria (35%) among the control subjects. Most of the isolates from patients on antiretroviral therapy were observed to be moderately or highly resistant to the commonly used antibiotics such as Chloramphenicol, Cotrimoxazole and Streptomycin but sensitive to Ciprofloxacin, Oxfloracin, Sparfloxacin and Refloxacin. This study has shown that patients on antiretroviral therapy are more prone to asymptomatic bacteriuria than normal

healthy individuals and recommend the use of Ciprofloxacin or Refloxacin for the treatment of asymptomatic bacteriuria among this category of patients in our environment. (*Journal of Medical Sciences*, 9 (6): 270-275, 2009; doi: 10.3923/jms.2009.270.275)

Assessing Periodontal Status of Patients with Active Caries or Faulty Restorations

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The aim of this study was to compare clinical as well as radiographic status of periodontal tissue of carious or badly restored teeth in comparison to healthy adjacent ones. A group of 50 individuals aged 20-50 years were selected from those referred to periodontics department at Shahid Beheshti Medical University for their periodontal complications including bleeding and recession. Clinical and radiographic examinations were performed on cases including Bleeding on Probing (BOP) pocket depth, attachment and bone loss level. All posterior teeth were looked at for presence of caries or faulty restorations. Similar number of cases were also assessed from the adjacent sound teeth as control. Collected data were then analyzed using χ^2 -test. There was a significant association between the presences of defective restoration and periodontal disease. A similar finding was corresponded to the presence of active carious lesion. This change of the periodontal tissue status was not observed on the sound adjacent teeth. Comparing the different groups for their power of difference, the sound and either carious or faulty restored teeth showed no significant difference between periodontal status of carious and restored teeth ($p < 0.05$). Results of this investigation revealed that faulty restored and carious teeth could develop periodontal disease through out time and any delay in treating such cases would further complicate the case. (*Journal of Medical Sciences*, 9 (6): 276-279, 2009; doi: 10.3923/jms.2009.276.279)

Can Experiencing Stressful Life Events Be a Risk Factor of Stroke?

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Present study was aimed to check if stressful life events can play a role in developing stroke and to estimate its magnitude. In a hospital based case-control study in 2003-2004, a total of 150 stroke cases along with 150 controls were

enrolled. Study participants were selected from those patients hospitalized in Alavi, Bouali and Fatemi university hospitals located in Ardabil, North-west of Iran. Participants were interviewed and a questionnaire containing demographic information, known stroke risk factors and validated questions of stressful life events (Holmes Rahe scale) was filled out for them. Data were analyzed by SPSS version 13 statistical package. Logistic regression was the main method of data analysis. Demographic characteristics in case and control groups were not statistically different. Patients had a higher score of stressful life events than controls. Mean score of family problems was 11.2 for stroke patients compared to 8.2 among control group patients. The difference was statistically significant. Fifty one percent of patients in case group had life changes compared to 27.8% in control group. Odds of disease for those having stress through life changes was 2.7 (95% CI: 1.5-4.8). There was a graded association between degree of psychological stress and risk of stroke. The findings of this case control study showed that experiencing stressful life events can be a risk factor of stroke. (*Journal of Medical Sciences*, 9 (6): 280-283; doi: 10.3923/jms.2009.280.283)

Pulse Pressure and the Management of the Hypertensive Patients of Black Race

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Present study was carried out to analyze the impact of pulse pressure in the occurrence of cardiovascular events in black hypertensive patients. It is a prospective study including old as well as new hypertensive patients followed up during 6 months with clinical assessments at 1, 3 and 6 months; cardiovascular complications were assessed according to the pulse pressure. At 6 months, 37% of patients had normal blood pressure against 5.2% at the inclusion. The percentage of patients having a $PP \geq 7999.2$ Pa (60 mmHg) regressed from 70.7 to 30.2% at 6 months. Under combination antihypertensive drugs, the percentage of patients having a $PP \leq 7999.2$ Pa (60 mmHg) increased from 20.8 (at Mo) to 71.7% (at M6). Cardiovascular complications were found in 21.2% of hypertensive patients. Twenty percent of patients having a $PP \geq 7999.2$ Pa (60 mmHg) during the three follow up visits had cardiovascular complications at 6 months against 80% in $PP \leq 7999.2$ Pa (60 mmHg) group at the three follow up visits. The PP is a factor to be taken more and more into account in the management of hypertension. In fact, the better the PP is mastered the less cardiovascular complications are noticed. (*Research Journal of Cardiology*, 2 (1): 1-7, 2009; doi: 10.3923/rjc.2009.1.7)

Why Low Molecular Weight Heparin could not Gain the Confidence of Interventionists? An Overview

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Presently coronary artery disease is considered as one of the major causes of mortality. The development of interventional cardiovascular technique such as coronary stenting has revolutionized the practice of interventional cardiology by overcoming partly some of the limitations of coronary angioplasty. During this procedure it produces vessel injury and induces thrombin generation and platelet activation with intertwined pathways, therefore Percutaneous Coronary Intervention (PCI) without anticoagulation appears unrealistic. It is almost universally accomplished with unfractionated heparin but the narrow risk-benefit ratio has led to search for better alternatives. The superiority of Low Molecular Weight Heparin (LMWH) over Un-Fractionated Heparin (UFH) is clear for ACS. Generally, the registries have reported a trend towards increased bleeding complications with LMWH than with UFH during PCI. In spite of its limitations, UFH proved to be the standard heparin therapy during PCI. This review study highlighted that LMWH requires further studies to determine their pericatheterization monitoring, efficacy and safety profile. (*Research Journal of Cardiology*, 2 (1): 8-14, 2009; **doi**: 10.3923/rjc.2009.8.14)