Frequency of Bone Marrow Involvement in Lymphoma a Comparison between Aspirate and Biopsy Yeilds

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Degree: Master
Specialty: Hematology
Date of the debate: 10/12/2009
Supervisor: Dr. Mohammed S. Jaff

Abstract

Lymphomas are neoplastic diseases of immune system; they are among the commonest human malignancies. Over a period of six months (50) newly diagnosed cases were studied. Thirteen had Hodgkins lymphoma and (37) had Non-Hodgkins lymphoma. Hodgkins lymphoma patients had an average age of (27.8) years with a male to female ratio of 1.6:1. The usual presentation was cervical lymphadenopathy (84.6%). All patients showed some abnormalities of peripheral blood parameters; high ESR was reported in (92.3%), followed by anaemia (53.8%). Reactive marrow changes were seen in (38.4%) of cases, no case of marrow involvement was reported.

Non-Hodgkins lymphoma patients had a mean age of (31.9) years, the male to female ratio was (2.4:1). Extra-nodal lymphomas constituted (35.1%) of cases. The commonest hematological abnormalities were high ESR (81%), anaemia (51.3%), leukocytosis (16%) and leucopenia (10.8%), one case showed circulating lymphoma cells. Marrow involvement was reported in 12 cases. In 10 cases both aspirates & biopsy were positive; in 2 cases the aspirate alone was positive. Marrow examination changed the clinical staging to stage IV in (32.4%). Circulating lymphoma cells had a strong positive predictive value while leukocytosis had a strong negative predictive value for marrow involvement.

It was concluded that marrow involvement is rare in Hodgkins lymphoma but relatively common in Non-Hodgkins lymphoma. With exception of circulating lymphoma cells, peripheral blood parameters are unreliable indicators for marrow involvement. Marrow aspirates are more sensitive than biopsy in detecting marrow involvement in high grade lymphomas.

Evaluation of Testosterone Hormone and Zinc Levels among Infertile Males in Kirkuk Province

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Date of the debate: 21/12/2009
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Abstract

This study was carried out in the infertility clinic of Azadi General Hospital/ Kirkuk Province, from October (2008) to September (2009). One hundred four infertile male subjects, without any treatment, who had regular unprotected intercourse for at least one year without conception with their partners, aged (19-44) years, were enrolled in the present study. Microscopical examination of the seminal fluid showed isolated or combined abnormalities of the sperms in regard to their number, movement and their shape. (38) Patients were oligospermic, (39) patients were asthenospermic, (16) patients were azoospermic and (11) patients were oligoasthenoteratospermia (OTA)-Syndrome. Forty known fertile male were selected as normospermic control group (their wives had given birth to a child within one year).

Semen samples analyzed according to WHO criteria. Serum and seminal plasma zinc was estimated by atomic absorption technique. Serum testosterone was measured by ELFA technique (Enzyme Linked Fluorescent Assay), MiniVIDAS apparatus.

The study is aimed to demonstrate the relationships between concentrations of zinc in serum and seminal plasma and sperm quality among infertile men, and to find out relationship of serum and seminal plasma zinc levels and serum testosterone in infertile men.

The results showed that:-

1- The mean value of testosterone was significantly lower in infertile subjects (4.87±0.15 ng/ml) as compared to control group (6.41±0.16 ng/ml); ($P< 0.01$).

2-Significant correlations were observed between serum testosterone with seminal plasma zinc level in oligospermic subjects ($r=0.44$) and with serum zinc level in azoospermic subjects ($r=0.37$). ($P< 0.01$); ($P< 0.05$) respectively.

3-Serum and seminal plasma zinc levels was lower in infertile men (7.75±0.18 µmol/L); (0.83±0.02 mmol/L) when compared with normospermic control groups (14.09±0.27 µmol/L); (1.41±0.01 mmol/L) respectively ($p<0.01$).

4-Serum zinc concentration was significantly correlated with sperm density ($r=0.66$; $p<0.01$) and motility ($r=0.39$; $p<0.05$).

5-Seminal plasma zinc concentration was also significantly correlated with sperm density ($r=0.56$; $p<0.01$) and motility ($r=0.34$; $p<0.05$).

On the basis of the findings of this study:-

1- Poor zinc nutrition may be an important risk factor for low quality of sperm.

2-Zinc may contribute to fertility through its positive effect on spermatogenesis.

3- Also there was significant decrease in serum and seminal plasma zinc levels in oligospermic and azoospermic infertile males with significantly low androgen. It indicates zinc has a possible role for steroidogenesis. Therefore, zinc concentration in seminal plasma should be considered as one of the factors responsible for decreased testicular function in infertile male subjects.

A Clinico-Hematological Study of Pancytopenic Patients Attending Nanakali Hospital in Erbil City

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Date of the debate: 15/12/2009
Supervisor: Dr. Nawsherwan Sadiq Mohammed

Abstract

Pancytopenia is a triad of low hemoglobin, white blood cells and platelets. Although it is a common clinical problem with an extensive differential diagnosis, there is a relatively little discussion of this abnormality in major textbooks of internal medicine and hematology. This study aimed at determines the etiology and clinical profile of pancytopenic patients attending nanakali hospital. During a period of 6 months, 60 pancytopenic patients attended Nanakali hospital, their ages ranged between 1-81years were studied. A control group of 50 age-matched apparently healthy person were tested for complete blood picture and reticulocyte count. History, physical examination and hematological parameters at presentation were recorded. Hematological profile included hemoglobin, total and differential leukocyte count, platelet count, reticulocyte count, peripheral blood and marrow smears together with marrow biopsy were assessed. Pancytopenic cancer patients on chemotherapy were excluded. Pancytopenia was defined as hemoglobin less than 10g/dl, WBC less than 4 x109/L and platelet count less than 150 x 109/L. The mean Hb concentration, WBC count and platelet count in studied group were significantly lower than in control group. Hematological malignancies were the commonest cause of pancytopenia and accounted for (51.7%), they included: Acute leukemia (35%), myelodysplastic syndrome (11.7%), hairy cell leukemia (3.3%) and myelofibrosis (1.7%). Aplastic and megaloblastic anemia each of them accounted for (16.7%), hypersplenism was responsible for (10%).Other less common causes included enteric fever, kalaazar and secondary metastasis each of them accounted for (1.7%). Pallor was present in every case. Fever was present in (63.3%) and (25%) had bleeding manifestations at the time of presentation.

Evaluation of Vitamin C & Malondialdehyde Levels in Type 2 Diabetes Mellitus

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Degree: Master
Specialty: Clinical Biochemistry
Date of the debate: 12/12/2009
Supervisor: Lecturer Dr.Leweza B.Abbass

Abstract

Diabetes mellitus is a chronic metabolic disorder, which may be associated with the imbalance between protective effect of antioxidants and increased free radical production. Vit. C and MDA levels are two important parameters for the measurement of oxidative stress in biological systems. The present study was carried out from November 2008 to July 2009, in the Layla Qasm center for diabetic patients /Hawler city. Fasting blood samples were obtained from One hundred nine patients with type 2 diabetic (44 males and 65 females), the mean age was (53.2) years, and the range of age was (31 - 68) years, for the assessment of serum MDA, plasma Vit.C, serum glucose, and serum lipid profile (serum total cholesterol, high density lipoproteins, and triglyceride). The goals of this study were to determine and evaluate changes in the levels of serum MDA, as an index of lipid peroxidation, plasma Vit. C as an antioxidant, and fasting serum lipid profile, in patients of type 2 diabetes. The results obtained, were compared with fifty-four normal healthy subjects as a control group (22 males and 32 females), the mean of age was (50.5) years, and the range of age was (30 - 67) years.
The results obtained can be summarized as following:-
The mean value of S.MDA was significantly higher in type 2 diabetes (1.52 ± 0.4) μmol/L, as a compared to control group (0.73 ± 0.026) μmol/L, $P<0.01$.
The mean value of plasma Vit.C was significantly lower in type 2 diabetes (0.48 ± 0.027) mg/dl, as a compared to control group (1.18±0.057) mg/dl, $P<0.01$.
The data obtained indicate that there were a significant abnormal rise in serum total cholesterol, triglycerides and Low-density lipoprotein cholesterol in type 2 diabetic patients compared with control group $P<0.01$.and significant decreased in high-density lipoprotein cholesterol in type 2 diabetes than non-diabetes $P<0.01$.
From this study, it is very clear that there are abnormalities in the lipid peroxidation levels product MDA, antioxidant activates and lipid profile in the type 2 diabetic patients. The increased in lipid peroxidation in diabetes could be due to hyperglycemia, hyperlipidemia and decreased antioxidant activities.

The effect of Lidocaine with Fentanyl, or Midazolam on cardiovascular responses during Endotracheal intubation in hypertensive patients on Beta-blocker

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Degree: Master
Specialty: Pharmacology
Date of the debate: 26/7/2009
Supervisor: Asst prof. Kawa Dizaye
Dr. Allaa M. Yousif

Abstract

Endotracheal intubation (ETT) always associated with marked increases in heart rate, and systemic blood pressure. These hemodynamic changes are well tolerated in normotensive individuals, but are of greater significance in patients with cardiovascular disorders, and have been recognized as a potential source of a number of complications.
This randomized single blind study was done to evaluate and compare the efficacy of Lidocaine alone, Lidocaine with Fentanyl, or Lidocaine with midazolam in attenuating the hemodynamic responses to ETT in 61 patients, of ASA II (hypertensive patient on cardio-selective β-blocker), scheduled for elective surgery under general anesthesia.
Mean mean blood pressure (Mean MBP), Mean systolic blood pressure (Mean SBP), and Mean diastolic blood pressure (Mean DBP) in group L; were non-significantly decreased after giving Lidocaine, then at 2.5 minute after ETT, Mean MBP, Mean SBP, and Mean DBP were non-significantly increased, and at 5 minute after ETT, Mean MBP, Mean SBP, and Mean DBP were significantly decreased if it compared with basal value.
Mean MBP, Mean SBP, and Mean DBP in group L+F; were significantly decreased after giving Lidocaine+Fentanyl, then at 2.5 minute after ETT, Mean MBP, Mean SBP, and Mean DBP were non-significantly increased, and then at 5 minute after ETT, Mean MBP, Mean SBP, and Mean DBP were significantly decreased if it compared with basal value.
Mean MBP, Mean SBP, and Mean DBP in group L+M; were non-significantly decreased after giving Lidocaine+Midazolam, then at 2.5 minute after ETT, Mean MBP was non-significantly decreased, Mean SBP was significantly decreased and Mean DBP was non-significantly increased, and at 5 minute after ETT, Mean MBP, Mean SBP were significantly decreased, meanwhile Mean DBP was non-significantly decreased if it compared with basal value.
Mean pulse rate (Mean PR) in Lidocaine group; was non-significantly increased after giving Lidocaine, at 2.5 minute after ETT, Mean PR was non-significantly increased, and then at 5 minute after ETT, Mean PR was non-significantly decreased if it compared with basal value.
Mean PR in Lidocaine+Fentanyl group; was non-significantly decreased after giving Lidocaine+Fentanyl, at 2.5 minute after ETT, Mean PR was non-significantly increased, and then at 5 minute after ETT, Mean PR was non-significantly decreased if it compared with basal value. Mean PR in Lidocaine+midazolam group; was non-significantly increased after giving Lidocaine+Midazolam, then at 2.5 minute after ETT, Mean PR was non-significantly decreased, and then at 5 minute after ETT, Mean PR was non-significantly decreased if it compared with basal value.
In conclusion, Midazolam+Lidocaine combination was more effective in controlling and stabilizing blood pressure, than Lidocaine alone and Fentanyl+Lidocaine combination after applying ETT. And Midazolam+Lidocaine combination approximately have better effect in controlling pulse rate than Lidocaine alone, and Fentanyl+Lidocaine combination after applying ETT.

Some Hematolgical Causes of Neonatal Jaundice in Duhok and Erbil Provinces

Name: Bizav N. Rasheed
Degree: Master
Specialty: Hematology
Date of the debate: 23/11/2009
Supervisor: Dr .Abdulkadir A. Alnakshabandi

Abstract

Background:

Neonatal jaundice is the most common cause of neonatal readmission to pediatric hospital in Duhok and Erbil (North of Iraq) even though, in the majority of cases, risk factors can be identified before discharge. Severe neonatal hyperbilirubinemia and kernicterus continue to be reported worldwide in otherwise healthy term infants. We conducted this study to estimate the incidence of hematological causes of neonatal jaundice in Duhok and Erbil and to determine underlying causes, improved knowledge of which would be valuable to help identify strategies for risk reduction.

Objective of the study:

To investigate the relative frequency of some hematological causes of neonatal jaundice in Duhok and Erbil provinces.

Patients and methods:

Data on 100 neonates (mature and premature) 30 days of age and younger with unconjugated hyperbilirubinemia were collected prospectively through Duhok and Erbil pediatric hospitals (North of Iraq) from October 2008 to April 2009. Neonates were included if they had a peak serum total bilirubin level of more than 15mg/dl, or increase serum total bilirubin 0.5mg/hr, or jaundice occur at first day of life ,or jaundice remain more than one week, serum bilirubin(total, direct and indirect) levels, a complete blood count with reticulocyte count, major blood grouping for mother and baby, direct Coomb's test and G6PD estimation for baby, indirect Coomb's test for mother were done as a part of jaundice work up for all babies.

Results:

Of 100 cases reported, causes were identified included ABO blood group incompatibility (n = 58), Rh incompatibility (n=39) glucose-6-phosphate dehydrogenase deficiency (n = 3). The mean peak bilirubin level reported was 19.373 mg/dl (standard deviation [SD] 4.4810 mg/dl, range 15–37.4 mg/dl). Thirty-seven neonates (37%) underwent an exchange transfusion.

Conclusions:

The most common causes of neonatal pathological jaundice in Duhok & Erbil provinces were ABO incompatibility 58%, Rh incompatibility 39%, and G6PD deficiency 3%.

While the most common causes need exchange transfusion were ABO incompatibility 51%, Rh incompatibility 45.94%, and G6PD deficiency 2.71%.

A study of P53 Expression in Transitional Cell Carcinoma of Urinary Bladder in Erbil Governorate

Name: Bakir Siddiq Bakir
Degree: Master
Specialty: Pathology
Date of the debate: 5/11/2009
Supervisor: Asst Prof. Salah Abubakir Ali

Abstract

Mutations of the p53 tumor suppressor gene is an event that occurs frequently in human cancer, including urothelial cancer, and they are frequently associated with an over expression of p53 protein. This study aimed to evaluate p53 protein expression in both normal bladder epithelium and in cases of transitional cell carcinoma (TCC) of urinary bladder by immunohistochemical study and to correlate p53 expression in urothelial cancer with other clinico-pathological parameters. This a retrospective and prospective study for sample collection during the period from January 2006-May 2009. The samples studied included 105 formalin fixed, paraffin embedded urinary bladder tissue specimens; they consisted of the following diagnostic categories: chronic non specific cystitis (n=5) and urothelial cancer (n=100). In this study the nuclear p53 protein expression was detected in tissue samples by Dako Cytomation. LSAB + System-HRP staining protocol using monoclonal mouse anti human protein DO-7. None of the chronic non specific cystitis cases showed p53 nuclear immunostaining, while 93% of urothelial cancer specimens examined showed immunopositivity for p53 protein. In this study, a statistically significant correlation was observed between p53 overexpression rate with the tumor grade ($p = <0.001$) and histological architecture ($p = 0.023$), but not with other clinico-pathological parameters like age and gender. In conclusion, results of the present study showed the validity and simplicity of application of immunohistochemistry in determining the status of p53 protein expression. The results suggest that p53 overexpression is strongly associated with the aggressiveness of urothelial cancer.

Normal Reference Values of Hematological Parameters for Adult Kurds in Hawler City

Name: Sazan Kazm Saber
Degree: Master
Specialty: Hematology
Date of the debate: 24/2/2010
Supervisor: Asst Prof. Muhammad Salih Jaff

Abstract

Hematological parameters are affected by different factors, such as age, sex, smoking, ethnicity and environmental factors like altitude, therefore it has been justified that each population must establish its own normal reference intervals to be used in clinical assessments and interpretations.

Hematological reference intervals for adults from Hawler city—Iraq have never been addressed therefore, this study was designed and aimed at the establishment of normal reference intervals of haematological parameters for healthy adults at Hawler city. This study involved 1530 apparently healthy individuals (809 males and 721 females) who were referred to the Matrimoneal Health Centre Laboratory during the period from December 2008 until October 2009.Complete blood counts were performed using coulter counter, subjects were categorized into subgroups according to gender and smoking habit. For each subgroup, descriptive and comparative statistical analysis was performed for hematological parameters.

The results showed substantial differences between males and females, mean values (±2SD) for male Hb (g/dl) was 15.35(±1.4), WBC ($\times 10^9$ /l) 7.38 (±2.2), PLT ($\times 10^9$ /l) 253.55(±72.18), female Hb (g/dl) was 13.26(±1.24), WBC ($\times 10^9$ /l) 7.80(±2.47), PLT ($\times 10^9$ /l) 278.72(±80.37) and between smokers and nonsmokers, smoker male values Hb(g/dl) 15.66(±1.4), non smoker 15.25(±1.4), WBC($\times 10^9$ /l) smoker 7.82 (±2.26) , non smoker 7.25 (±2.17) PLT ($\times 10^9$ /l) smoker 248.79(±63.72) , non smoker 255.01(±74.58) . Moreover, reference intervals derived from our population were markedly shifted downward as compared with Western European populations. It was concluded that separate and region specific reference intervals based on gender, smoking, and age for the Kurds population in Hawler City should be generalized for clinical laboratories and clinical practitioners, which would help in interpreting laboratory hematological tests more specifically and potentially, develop the quality of medical care provided to patients.

Prevalence of Cryptosporidium Species and Some Intestinal Protozoa in children Suffering from Diarrhea in Erbil Governorate

Name: Hussein Mahmud Abdullah
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 8/12/2010
Supervisor: Asst Prof. Wisam Mahdi Al-Saeed

Abstract

Background:
Renal transplantation has become the treatment of choice for end stage renal failure in most age groups with perhaps the exception of the very young and the very old patients. Most patients receiving dialysis are candidates for kidney transplantation.
Objectives:
The aim of our study is to compare between two volatile anesthetic agents in their effects on haemodynamic status in patients during renal transplantation before, during and after clamping of renal artery and find out which drug has less effect on cardiovascular system.
Patients and methods:
In this study the data were collected from 50 renal transplantation candidate patients in Rizgary teaching hospital and Zheen private hospital during the period from November 2009 to June 2010. In this study 25 patients received isoflurane (group A) and the other 25 patients received halothane (group B) as anesthetic agent. The haemodynamic effects of these two volatile anesthetic agents were compared on the patients.
Results & conclusions:
In this study we found that the heart rate H.R. in group A. was higher than group B. while mean arterial pressure M.A.P.&central venous pressure C.V.P. in group B. was higher than group A. From these results we can conclude that Isoflurane was less affecting the haemodynamic parameters than Halothane, so Isoflurane is more preferable than Halothane in renal transplant patients.

Evaluation of tumor necrosis factor alpha and inerleukin10 and some maternal hormones in patients with rheumatoid arthritis in Erbil

Name: Ronia Shawkat Kawther
Degree: Master
Specialty: Medical Microbiology/Immunity
Date of the debate: 9/12/2010
Supervisor: Lecturer Dr. Rukia M. Al-Barzinji

Abstract

Rheumatoidarthritis(RA) the pathology of the disease is characterized by release of T-cell, macrophage and stromal cell-related cytokines. The local signalling as a consequence to these inflammatory molecules results in the expression of an vast array of protease and consequent degradation of extracellular matrix (ECM) of the articular cartilage and the adjacent bone. one cytokine, which has been given special focus is tumour necrosis factor alpha (TNFα).The rationale fordeveloping anti-TNFα treatments inRAisbasedon multiple in vitroand invivo studies,showing the excessive stimulatoryeffect ofTNF-α on awiderange of biological processes leading toincreased inflammation and tissue destruction.

This case-control study comprised 60 Iraqi patients(12) males and (48) females were diagnosed on the basis of clinical and laboratory ground to be with rheumatoid arthritis (RA) and satisfying at least 4 of 7 of the revised criteria for RA diagnosis which were defined by the American Collage of Rheumatology 1987 (Arnett et al, 1988). They were attending or admitted to Rizgari Teaching Hospital between November 2009 and November 2010 and subjected for a questionnaire on the disease manifestations (Appendix I). Patients were subjected for a questionnaire on the disease manifestation, and their medical histories reviewed for clinical features and previous serological findings. The mean age of total 60 patients was ( ) their ages ranged from 19-72 years.the durationof RA was (4 months – more than 10 years). The majority of patients were under regular treatment of either one or more drugs including), corticosteroids, disease modifying anti-rheumatoid drug biologic treatment, with non steroidal anti-inflammatory.Parameters were duration of early morning stiffness in minutes, ,erythrocyte sedimentation rate (ESR) byWestergren method and C-reactive protein (CRP) ,hemoglobin.

Thirty healthy individuals comprised of (6 males)_ and (24 females) (mean age of total 30 healthy control was) had been chosen from patients relative and hospital medical staff, who have no history or clinical evidence of RA or any chronic disease, they were age and sex matched their ages ranged from 27 to 55 years.

There was no significantly difference in the frequencies of the patients with level of TNF-α in (CRP+ve) patients compared with its frequencies of level of TNF-α respectively in (CRP-ve) RA patients Correlation between RF with TNF-α direct positive correlation and Highly significant ($P<0.01$). Correlation between ESR with TNF-α,was direct positive correlation and significant($P<0.05$) Correlation between HB with TNF-α,was direct positive correlation and Highly significant ($P<0.01$). Correlation between ESR with TNF-α,was wich is direct positive correlation and significant ($P<0.05$) While correlation between CRP with TNF-α,was negative correlation and non significant .

Correlation between Auto Antibodies and Some Serum Cytokines and Hormones in Patients with Recurrent Spontaneous Abortion

Name: Nabaz Faisal Shaker
Degree: Master
Specialty: Clinical Immunity
Date of the debate: 8/12/2010
Supervisor: Dr. Nabeel Elia Waheda

Abstract

Anti phospholipid syndrome (APS) is an autoimmune disease associated with the presence of antibodies reactive with negatively charged phospholipids and the association between the presences of anti phospholipid antibodies (APL), anti cardiolipin (ACL) with recurrent pregnancy loss has been documented.

A total of eighty subjects were enrolled in this study with unexplained recurrent spontaneous abortion (RSA) attended Hawler Maternity Teaching Hospital from the period of (1st of August 2009 to 3rd of April 2010),in addition to ten healthy individual as a control group.

In this study many immunological and hematological parameters were evaluated .The results of this study showed obvious relation between risk factors and development of (RSA). Among these factors is the age, it revealed that the most frequent age for abortion was that age group (25-34) year when compared with other age groups.

The highest frequency of abortion was found in patients who married at age (14-20) year. A positive significant correlation was found between patients having first pregnancy at age range (15-20) year. Concerning the relation with numbers of pregnancy, the numbers of patients with (1-5) previous pregnancies were higher. The number of patients with (≥3) previous abortion was higher, than the number of aborted patients with (4-10).

The highest frequency of abortion was found in patients having abortion at first trimester when compared with the numbers of patients having abortion at second trimester. A positive significant relation was found between patients aborted normal fetus when compared with the number of patients aborted abnormal fetus.

The result showed that the number of patients with body mass index (25-29.9 Kg/m2 and ≥ 30 Kg/m2) were higher when compared with the number of patients having other body mass indese. The most frequent blood group in aborted patients with A and O were high- er when compared with the number of patients with blood group B and AB.

A significant increase in the mean concentration of serum auto antibodies anti cardiolipin antibody (ACL), anti phospholipids antibody (APL) and mixed (ACL and APL) antibodies were detected when compared with their mean concentration in sera of control group ($p< 0.01$). A highly significant increase in mean total platelet count in peripheral blood of patients having ACL and APL and mixed (ACL and APL) auto antibodies in comparison with their mean total platelet count in peripheral blood of control group ($p< 0.01$) .

No significant difference in mean concentration of (TSH and HCG) in sera of patients having either ACL or APL antibody when compared with their mean concentration in sera of control group ($p> 0.05$). A highly significant increase in mean concentration of (IFN-γ and TNF-α) in sera of patients having ACL and APL and mixed (ACL and APL) auto antibodies, in comparison with their mean concentration in sera of control group ($p< 0.01$). No statistical significant differences were found in means concentration of ACL and APL and mixed (ACL and APL) antibodies in relation to different numbers and trimester of abortion ($P> 0 .05$).

A laboratory study of anemia in children aged 6 months to 6 years in Erbil City

Name: Kadhm Hassan Kamil
Degree: Master
Specialty: Laboratory Hematology
Date of the debate: 22/11/2010
Supervisor: Lecturer Dr. Nawsherwan S. Mohammad

Abstract

Background: Anemia is frequent in infants and preschool children all over the world and poses a significant health problem particularly in developing countries.
Objectives: The aim of our study was to investigate causes of anemia in children aged 6 months to 6 years and to define its main morphologic types through the laboratory evaluation.
Materials and Methods: The study group included 325 patient children with Hb levels less than 11.0 g/dl and 164 control children of the same age group (6 months to 6 years old) in Erbil city. Investigation included Complete blood count, blood film, ESR, reticulocyte count, iron profile, Hb electrophoresis, G6PD screening by methemoglobin reduction test, Coombs' test and bone marrow study.
Results: Anemia was more frequent in children up to 2 years age (54%) than in children of (2–6 years) age group. Anemia was more frequent in male children (62.1%) than female children (37.9%). According to MCV; types of anemia were microcytic (60.7%), normocytic (26.7%) and macrocytic (12.6%). Anemia was mild (Hb: 9-10.9 g/dl), moderate (Hb: 7-8.9 g/dl) and severe (Hb: <7 g/dl) in 55.4%, 26.7% and 17.9% of cases respectively. Underlying causes of anemia were; iron deficiency anemia (42.6%), hemolytic anemia (18.6%), thalassemia syndromes (16.6%), anemia of chronic disease (particularly respiratory and gastrointestinal infections) (15.5%), acute leukemia (2.7%), liver diseases (1%), megaloblastic anemia (0.6%), acute blood loss (0.6%), aplastic anemia (0.3%) and anemia of undetermined cause (1.5%).
Conclusions: The commonest type of anemia in children (6 months to 6 years) was microcytic anemia followed by normocytic and then macrocytic anemia. Iron deficiency was the commonest cause of anemia followed by hemolytic anemia, anemia of inflammation, thalassemia syndromes and then other causes.

Seroprevalence of Toxoplasma gondii in some Meat Producing Animals in Erbil City

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Degree: Master
Specialty: Medical Microbiology
Date of the debate: 19/12/2010
Supervisor: Lecturer Dr. Zakarea Abdullah Yassen

Abstract

The study aimed at an investigation on the prevalence of antibodies of T. gondii in total of 564 animals (slaughtered and aborted).It was carried out in the slaughter house and the central veterinary laboratory in Erbil city from November 2009 to April 2010. Sera samples of sheep (302) , goat (152) ,cow (110) were involved in this study. According to the age and, sex they were : > 1 year age: 190 , 105 , 104 ; ≤ 1 year age: 112 , 47 , 6 ; male : 211 , 70 ,93 ;female : 91 ,82 , 17respectively. Serum from all these animals were tested by LAT., then the positive serums was tested by MAT (Modified Agglutination Test) and Enzyme linked immunosorbent assay (ELISA) IgM antibodies. Using Latex agglutination test (LAT), positive serum was distributed in three species of slaughtered animals (sheep, goat, cow) were 75(25.42%), 25(28.41%), 31(28.97%).There was no significant difference between these species. Positive serum was distributed in total animals regarding to the age and sex as follows: male 95(25.4 %), female 105(55.26%); age >1 156(39.1%), ≤1 44(26.7%); respectively. Significant differences was noted between (female vs. male), age (≤1 vs. >1) by Latex test. Seropositivity for antitoxoplasma in total sheep according to age, and sex was distributed as follows >1yr 53(27.89%), ≤1yr 29 (25.89%); male 49 (23.56%), female 33 (35.11%) in Erbil.There was no significant difference was noted between (Age >1vs.≤1) while significant difference was obtained regarding to sheep sex. Seropositivity for antitoxoplasma antibodies in goats according to age, sex, was as follows : >1 14(34.14%), ≤1 11(23.4%); female 12(46.15%), male 13(20.97%). There were no significant differences regarding to age but the difference was significant regarding to sex. Positive seroprevalence of antitoxoplasma in cow according to age, sex was as follows >1 27(26, 73), ≤1 4(66, 7); female 8(57, 14), male 23(24, 73). Statistical results show significant difference between age (≤1 vs. >1); sex (♀ vs. ♂). Testing 74 serum of aborted animals by LAT showed that the distribution of positive results according to the species was as follows: sheep 7(100%) , goat 59(92.19%) , cow 3(100%). There was significant difference between (sheep vs. goat) ,(goat vs. cow), while there was no significant difference between(sheep vs. cow) at p≤ 0.05. The distribution of antitoxoplasma dilutions of 1:2, 1:4, 1:8, 1:16,1:32 was in different slaughtered animals (sheep , goat , cow) was as follows : (9, 10,18 , 22 , 16) ; (1 , 2 , 6 , 10 , 6) ; (0, 1 , 8 , 13 , 9) respectively .The distribution of antitoxoplasma dilutions of 1:2 ,1:4 , 1:8 ,1:16 ,1:32 was in the different aborted animals (sheep , goat , cow) was as follows : (1 , 1 , 1 , 2 , 2) ; (6 , 8 , 11 , 19 , 15) ; (0 ,1 , 0 , 0 , 2). It was noted from study, by testing 295 sheep serum by latex test, 75 (25.42%) were seropositive .By examining this 75 seropositive serum by MAT, it noted that 63(84%) were 2ME positive (IgG) and 12(16%) were 2ME negative (IgM) . While by using ELISA (IgM) in testing the 75 seropositive latex serum yield that 11(14.7%) were positive , and 64(85.3%) were negative . There was a significant differences was noted between the results of LAT vs. ELISA, LAT vs. 2ME .There was no significant difference between the results of ELISA vs. 2ME. The result from out of 88 serum of the slaughtered goats tested by LAT, 25(28.41%) were positive, and by examining these 25 seropositive by 2ME result in 21 (84%) 2ME positive (IgG) , 4(16%) 2ME negative (IgM). While using ELISA for detecting IgM , 3 (12%) were positive and 22(88%)were negative. There was a significant difference between the results of LAT vs. ELISA; LAT vs. 2ME .There was no significant difference between the results of ELISA vs.2ME. It was shown that out of 74 serum of aborted animals examined by LAT, 69 (93.24%) were positive. By re-

examine the positive group by 2ME, 57(82.61%) were positive, and 12(17.39%) were negative .While by using ELISA to test these 69 latex positive yield that 11 (15.94%) were positive for IgM, and 58(84.06%) were negative. There was a significant differences was noted between the results of LAT vs. ELISA, LAT vs. 2ME. There was no significant difference between the results of ELISA vs.2ME.

Sero-Prevalence and Sensitivity Patterns of Anti-Toxoplasma IgM and IgG Antibodies in Apparently Healthy Groups in Erbil City

Name: Karim Jwan Saleh Khoshnaw
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 8/12/2010
Supervisor: Lecturer Dr. Ahmed Akil Khudhair Al-Daoody

Abstract

This study was performed to investigate the sero-prevalence of anti- Toxoplasma antibodies in apparently healthy groups in Erbil city from 10 October 2009 to 20 April 2010. Three serological tests were used for the diagnosis of toxoplasmosis, included latex agglutination test, modified latex agglutination test and enzyme linked immunosorbent assay, and study of the effect of some factors on the prevalence of Toxoplasma infection such as residency, age, educational level, socioeconomic status, contact with animals, gestational age, occupation and gender. For full information for each individual used special questionnaire sheet. Out of 657 samples examined, 270(41.1%) were positive for specific anti-Toxoplasma antibodies by LAT, 187(28.5%) were positive for IgG by MLAT and 76(11.6%) were positive for IgM by ELISA. The sero-prevalence rate of toxoplasmosis among non-pregnant women was (50.4%), which was insignificantly higher than that seen among pregnant women (45.2%) and single women (38.3%). While, seroprevalence of anti-Toxoplasma antibodies among slaughterhouse workers and butchers were (39.0%) and (39.5%) respectively, which were highly significantly higher than that observed in students (16.4%) by LAT. The most prevalent titer of LAT was concentrated at the titer 1:80 for pregnant women and slaughterhouse workers, while titer 1:160 for single women and butchers. Almost in all the used tests higher rates_were recorded among rural inhabitants in comparison with those living in urban areas, but statistically no significant difference was observed. Signifecant difference was observed between age groups and frequency of Toxoplasma seropositivity, the higher prevalence rates was found among older age groups than the yonger age groups by LAT. No sigificant difference observed between educated and non-educated women by LAT.

The women (pregnant and non-pregnant) with low socioeconomic status were showed significantly higher sero-prevalence rate than women with medium/high socioeconomic level by LAT. The women (non-pregnant and single) who were in contact with animals showed the high rate of seropositivity than those not contact with animals by LAT. Pregnant women in first timester showed the highest seropositivity (49.2%) by LAT, (38.1%) by MLAT and (15.9%) by ELISA-IgM. No significant difference was observed between toxoplasmosis and occupation, but the rate of Toxoplasma infection in housewives was higher than the other groups by LAT. Females reported significant higher prevalence rate (45.3%) than the males (34.3%) by LAT.

Microbiological Study of Burn Wound Infection, Antibiotics Susceptibility Pattern and Beta lactamase Prevalence in Erbil city

Name: Shler Qasim Hussen
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 22/11/2010
Supervisor: Dr. Isam Y. Mansoor
Dr. Kamal E. Baker

Abstract

A prospective study was carried out on burn patients admitted to the burns unit at Emergency Management Center (EMC) in Erbil city during the period September 2009 until May 2010.

Swabs were collected from 130 infected burn patients (85) female and 45male the ratio of female to male was 1.8:1. The age of patients range from (<1 − ≥ 90 years).The mean of female age was (20.2) while the mean of male age was (16.02). The mean of hospital stay for female patient was (9.74) day and for male patients were(8.36)day. The mean of total body surface area burned (TBSA %) of female was (37.17%) and for male was (20.1%). The high incidence of burn was □□□ at age group (1−9) years of both genders.

The most common cause was flame (67.6%) and accident burn wound was most prevalent in female at the age group (20-29) years old, and mortality rate among females (21.1%) was higher than males (8.8%).

According to the type of growth culture 113 (86.9%) produced positive culture, whereas 17 (13%) produced negative cultures, and the total number of isolates obtained from patient with burned wound was one hundred and ninety six isolates.These isolates were distributed between aerobic, facultative anaerobic representing 165 (75.6%) and anaerobic 31 (15.81%) respectively, while fungi isolates were 22 (16.9%).Solitary isolates found in 48 cases (42.4%) followed by twin(mixed) 34 (30%).While triple (mixed and anaerobic) represent 30 (26.5%) isolate.

The microorganisms were identified according to morphological, microscobical and biochemical characteristics. In this study different types of API system were used for identification of microorganism and the result obtained by entering the profile number into a new designed internet system to get more reable, detail, and faster results than those obtained manually traditional time consuming and less accurate methods. This technique is used for the first time in Iraq and Kurdistan region.

The most frequent etiological agents isolated (aerobically and an aerobically) bacteria from burn patients was S. aureus in (pure and mixed cultures) followed by Klebsiella spp. and Pseudomonas spp. The most common anaerobic pathogen bacteria species were Bacteriodes spp. 12 (6.1%) while among fungi Candida albicans was the most common etiological agent representing 8 (36.6%) isolate.

Statistically analysis showed that there are significant differences between rates of infection caused by aerobic and anaerobic bacteria with several parameters such as age, cause of burn, degree of burn, duration of hospital stay, and (TBSA %) burned. On the other hand, there is no significant difference between rates of infection and gender.

The studied bacterial isolates were screened for their resistance to (26) antibiotic. The results revealed that these isolates showed variation in their response for antibiotics. The highest resistance among gram positive bacteria was to Tetracycline and Ceftraxone58 (96.6%) while the highest resistances among gram negative bacteria were to Ceftraxone, Ampicilin, and Cloxacilin 103 (100%). The highest resistance among gram positive (anaerobic) bacteria was Ceftraxone, Ampicillin, Cloxacilin, Gentamicin, and Streptomycin. on the other hand the highest resistance among gram negative (anaerobic) bacteria was to Ampicilin, and Cloxacilin, Gentamycin, Piperacilin, and Streptomycin12 (100%).

Imipenem was the most effective antibiotic against Gram-negative bacteria, while Vancomycin was the most effective antibiotic against Gram-positive bacteria and Metronedazol was the most effective antibiotic against anaerobic bacteria.

All gram negative bacteria were screened for their ability to produced extended spectrum beta lactamase enzyme, out of 103 gram negative bacteria, 44 (42.7%) were to be found ESBL producers. The highest percentage of ESBL production occurred in E.coli and Sphingomonas spp. (66.6%), while the lowest ESBLproduction were detected by Aeromonas sppand Burkholderia spp. (0%).

For rapid detection of β-lactamase production among Staphylococcus spp.a nitrocefin-based sticks were used and the results showed that out of 57 Staphylococcus spp. isolate 33 (54.8%) were β-lactamase producers.

All Staphylococcus isolates were screened for their resistance to methicillin, and results showed that out of 35 S.aureus30(85.7%) were MRCNS and 17(77.2%)other type of staph were resistant to methicillin.

Assessment of Some Immunological Parameters in Patients with Hepatitis B Virus

Name: Kharman Saeed Ibrahim
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 12/6/2010
Supervisor: Lecturer Dr. Rukia Muhammad Garib Tahir Al-Barzinji

Abstract

Hepatitis B virus (HBV) infection and its complications are serious public health problems worldwide. This study was carried out from November 2008 till November 2009 to evaluate some virological and immunological parameters, in addition to assessing of the presence of circulating immune complexes (CICs) in HBV patients and healthy subjects. Serum samples were collected from 55 HBV infected patients, 30 of them had clinical symptoms of infection who attended Nanakaly Hospital for Blood Diseases, Erbil and Rizgary Teaching Hospitals. While, the remaining (25) were volunteer blood donors, who apparently had no symptoms of hepatitis B infection and the study also included 21 healthy controls. The hepatitis B patients were divided into two groups based on HBsAg and HBc Ab (IgM). The first group included 12 patients with acute Hepatitis B virus infection, whose HBsAg and HBc Ab (IgM) were positive. The second group included 43 patients with chronic Hepatitis B virus infection whose HBsAg was positive, while their HBc Ab (IgM) was negative. There was a highly significant predominance of Hepatitis B virus infection in males than females ($P<0.01$). Serum complement components (C3&C4) and immunoglobulins (IgG & IgM) were estimated only in 43 HBV patients (12 acute and 31 chronic) and 16 healthy controls by single radial immunodiffusion assay. The mean serum concentration of C3 complement component showed highly significant reduction in acute HBV patients in compared to chronic HBV patients and healthy control ($P<0.01$). The C4 serum concentration also decreased significantly in acute HBV patients compared to chronic HBV patients and healthy controls group ($P<0.05$)($P<0.01$) respectively. The mean serum concentration of IgG revealed high significant elevation in chronic hepatitis patients compared with acute hepatitis patients and healthy control ($P<0.01$). On the contrary, IgM mean serum concentration was increased highly significant in acute hepatitis compared to chronic hepatitis group ($P<0.01$), and significantly increased comparing acute hepatitis with healthy controls ($P<0.05$). Regarding, the correlation between above parameters in acute and chronic hepatitis patients, there were no significant correlation between C3, C4, IgG and IgM in acute hepatitis patients ($P>0.05$) whereas in the chronic hepatitis group a positive significant correlation was observed only between C3 and C4 ($P<0.05$). Circulating immune complexes in sera of HBV patients and control group were measured by ELISA C1q-binding CIC (Ig (GM)) and platelet aggregation test (PAT). The specificity of both assays was high 95.23 % and 90.47 % respectively. However, their sensitivities were 45.45% and 49.45% respectively. Circulating immune complexes level was increased high significantly in HBV patients compared to healthy control by C1q-CIC (Ig(GM)) and platelet aggregation test ($P<0.01$). Regarding C1q-CIC (Ig (GM)), significant and high significant results were recorded comparing acute and chronic hepatitis with healthy control, ($P<0.05$) ($P<0.01$) respectively. Highly significant result was observed comparing chronic hepatitis and healthy control group concerning platelet aggregation test ($P<0.01$). There were no statistically significant differences by both assay with respect of CIC prevalence in HBeAg+ve (chronic active) and HBeAg -ve/anti-HBe+ve (chronic persistence) ($P>0.05$). There was no statistical significant difference between presence of C1q-CIC (Ig (GM)) and C3 in HBV patients ($P>0.05$).

Distribution of Doctors workforce in Erbil governorate

Name: Moayad Abdullah Wahab
Degree: Master
Specialty: Community Medicine
Date of the debate: 26/8/2010
Supervisor: Professor Tariq S. Al-Hadithi

Abstract

Imbalance in the distribution of health workforce eventually leading to inequities in health services delivery; and population health outcomes is an issue of social and political concern in many countries. Countries emerging from political distress carries with it major challenges to reforming a health system; one of such challenges is to ensure an adequate supply of competent workforce. Erbil governorate after 2003, encountered rapid socio-economical changes represented in lifestyle changes, industrialization and consequently concentration of investments in urban areas. This study lays out the facts on current distribution of the doctor workforce relevant to sociodemographic and other characteristics in health facilities of Erbil governorate; disclose the density of doctors to population at the governorate and district levels; identify possible causes of their uneven distribution and rapid turnover at primary health centers inside Erbil city. It is a descriptive cross-sectional study carried out during the period from September 2008 through May 2010, and included all the 962 doctors working in the health facilities of Erbil governorate. Overall, there were 5.1 doctors per 10,000 population. Most of them were deployed in urban areas (83.6%) in comparison to only 16.4% in rural areas. Approximately, three quarter of doctors were working at hospitals (74.2%) and 23.3% in primary health centers. Specialists constituted the largest categories of doctors (33.5%) and general practitioners the smallest (6.7%). Totally, 41.6% of specialists were specialized in four main specialties: general surgery (12.1%), internal medicine (11.8%), pediatrics (9%), and obstetrics and gynecology (8.7%). No specialist in family medicine was found. More than half of doctors had a private clinical work in addition to public work (52.7%). In conclusion, there was doctor's workforce imbalance in numerical, geographical, specialty, institutional and gender terms. Having a private clinical work and the opportunity to choose workplace were the most influential variables to determine the workplace. Working inside Erbil city was a strong predictor for satisfaction, conversely working outside Erbil city was a predictor for dissatisfaction.

Effects of Stabilizing Agents on the Amyloid Fibril Formation

Name: Abbas Ali Braim
Degree: Master
Specialty: Biophysics
Date of the debate: 2/7/2010
Supervisor: Assist. Prof. Hisham M. Ali

Abstract

Osmolytes provide a general method to protect proteins from the unfolding and aggregation induced under high temperatures. In this study, the effect of glycerol on protection of the human serum albumin (HSA) at different temperatures was investigated by a static light scattering method and spectrophotometric analysis.
At temperatures above 50º, the results showed that there is a change in the Radius of gyration (Rg) and abrupt change in the molecular weight (Mw). It is noted that they became double at high temperatures. The aggregation is produced. This aggregation might be due to the dimerization of HSA.
Glycerol seems to prevent HSA from thermal unfolding and aggregation in a concentration-dependent manner. Therefore, above 50ºC the dimerization or aggregation was totally inhibited when the concentration of glycerol reaches 15%, since the result of the protein solution with 15% glycerol is approximately similar to the result of protein solution at 35 ºC. Amyloid fibril formation of HSA was investigated by means of absorption spectrum of Congo red (CR). The maximum wavelength spectrum of bound CR with incubated protein solution at 65 ºC for 15 days shifted. This indicates that there is an amyloid fibril formation since the CR dye specifically interact with β-sheets. Disappearance of the red shift occurred totally in the presence of 15% glycerol with the protein solution. Therefore glycerol has ability to inhibit amyloid fibril formation.
One of the conclusions presented in our study is that the aggregation of protein plays an important role in the synthesizing or formation of the amyloid fibril. Apparently, inhibition of the amyloid formation resulted from prevention of aggregation of the protein. Therefore, fifteen percent or more addition of glycerol can prevent the amyloid fibril formation.

Tissue and Plasma concentrations of meropenem in patients with diabetic foot infections

Name: Mohammed Abdullah Ali
Degree: Master
Specialty: Pharmacology
Date of the debate: 30/1/2010
Supervisor: Assis. Prof. Nidhal Abdulqadir Al-saleem

Abstract

The present study was carried out on ten diabetic foot infected patient (six males and four females) with types II diabetes mellitus for more than 10 years & who were prepared for amputation in orthopedic department in Erbil teaching hospital. Wagner grading were used for the classification of their diabetic foot & patients with grades III, IV, and V were enrolled in our study in whom taking tissue biopsy were accessible. Their mean ages values were 59±6 years.

Bacterial isolation & identification were performed by the conventional diagnostic technique. 75 % of isolated bacteria were G (-ve) bacteria and predominant while 25% were gram (+ve). Among the isolated bacteria, 30% were *Klebsiella pneumonia* followed by *E.coli* and *pantoea agglomerans* (each constitutes 10%). 5% of each isolated bacteria were *Yersinia enterocolotica, Kocurea rosea, Pseudomonas aeroginosa, Morganella morgani, Enterrococcus faecalis, Staphylococcus aurues, Enterrococcus raffinosus, Leuconostoc lactis, Citrobacter freundi, and Proteus vulgaris.* The isolated microorganism exhibited different MIC values with the lowest value (0.06µg/ml) was obtained for *Klebsiella pneumoni, P.aeuroginosa, Citrobacter freundi* & *Yersinia enterocolitica* while the highest value (3.9µg/ml) was for *Enterrococcus faecalis.* Such values reveal an excellent efficacy of meropenem against those organisms.

All patients received the antibiotic meropenem as IV infusion therapy at 1gm for 30 minutes 8 hourly intervals. Blood samples were taken after 1, 2, 4, & 8 hrs of drug administration & plasma was obtained & analyzed by HPLC method for the determination of meropenem concentrations.

After I hours from meropenem administration the mean meropenem concentration determined was 72.87 ±12.02 µg/ml then declined after 2 hours to 37.498 ±15.51 µg/ml and further declined to 11.19 ±3.19 and 0.42 ±0.31 µg/ml after 4 and 8 hours respectively corresponding to one-open compartmental first-order elimination kinetics.

The calculated mean plasma $t_{½}$, V_d & Cl of meropenem were 0.91±0.1h, 31.41±7.44 (L) and 23.8±6 (L/h) respectively. The mean AUC was 156.27±39 (mg/l. h) & the calculated T>MIC% for each isolated bacteria from each patient ranged from 29.7-98.1 % with a mean of 77.5±19.45 %.

The concentration of meropenem in wound tissues was calculated for each patient by microbiological method. In which a mean concentration of 14.98 ± 3.47 (µg/g) was obtained after 1 h, while 32 ± 11.02 (µg/g) found in patients after 2h and 44.54 ± 5.33 (µg/g) in patients after 4 h & 41.67(µg/g) after 8hr only from one patient and no drug was detected in another patient after 8 hours from the last dosage administration. Based on pharmacokinetic & pharmacodynamic parameters obtained, our data demonstrates good tissue penetration of meropenem in diabetic foot ulcers. This finding offers a realistic option for meropenem as monotherapy in the treatment of serious bacterial infections of diabetic foot patient.

Molecular Genetic Studies of Escherichia coli Species Isolated From Different Clinical Sources

Name: Samira Fattah Hamid
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 22/5/2010
Supervisor: Dr. Kamal Ismael Bakir Al-Otraqchi

Abstract

The present study was carried out between October 2008 to October 2009. Ninety five samples were collected from five different sources (urine, stool, wound swab, burn swab and water samples). Clinical samples were collected from patients (in all ages and both sex) attended five hospitals in Erbil city, while water samples were collected from Public HealthLaboratory-department of water bacteriology -Erbil. The results showed that the isolated bacteria belonged to different species. Out of ninety five samples collected from these sources, 64 samples (67.37%) were Escherichia coli, 5 samples (5.27%) were Pseudomonas spp., 7 samples (7.37%) were Klebsiella spp.: [6 (6.32%)K. pneumonia, 1 (1.05%) K. oxytoca], 2 samples (2.1%) were Serratia fonticola, while the Pantoea spp., Enterobacter cloaca, Proteus mirabilis were identified separately from only one sample representing (1.05%), the remaining 14 samples (14.74%) were gram positive bacteria. Urine isolates were the most frequent encountered 46 samples (71.8%) of E. coli and 12 samples (18.7%) for water, while for wound, burn and stool swabs were 2 samples (3.1%) respectively. The bacterial isolates were identified by unique feature of microscopic appearance, morphology, cultural and biochemical characteristics. All E. coli isolates were screened for their resistance to eleven antibiotics and three heavy metals: HgCl2, CdCl2 and ZnSO4. In addition their ability to utilize lactose sugar and the ability to produce hemolysins. The isolates showed variation in their response for these phenotypic traits. E. coli isolates showed high resistance (100%) to Amoxiclave, Chloramphenicol, Erythromycin, Penicillin and Tetracycline respectively. On the other hand, the lowest resistance was to Ciprofloxacin representing (46.8%). Also bacterial isolates showed the ability to resist heavy metals at different increased concentrations. Analysis of plasmid DNA profile by agarose gel electrophoresis revealed that most of the studied bacterial isolates contained plasmids of multiple numbers and size. Some characteristic features of plasmid DNA content of these tested isolates were studied, of these, the location of the antibiotics and heavy metals resistance genes were determined in the chosen bacterial isolates by the genetic transformation of the laboratory strain E. coli DH5α with plasmid DNA purified from these isolates. All genes responsible for conferring resistance to antibiotics used: Amikacin, Amoxiclave, Ampicillin, Erythromycin, and Tetracycline except those for (Ciprofloxacin and Trimethoprim), and also heavy metals resistance genes (HgCl2, CdCl2 and ZnSO4) are located on plasmid DNA, while those for lactose utilization and hemolysins production are located on chromosomal DNA of these isolates. Moreover, mobilization ability of plasmid DNA content in bacterial isolates understudy through mating assay (conjugation) has been examined and the results showed that only the plasmid DNA carried Ampicillin, Erythromycin and Tetracycline resistance genes and mercury resistance genes have the ability to mobilize in some isolates. These findings clearly revealed that the genes which confer resistance to antibiotics and those that encode resistance to mercury ions only located on the transferable plasmids. Also the correlation between the resistance to antibiotics and heavy metals was studied and the results indicated that the genes which confer resistance to both antibiotics and heavy metals located on plasmid DNA and there was a remarkable relationship between resistance to antibiotics understudy and resistance to heavy metals used in the studied bacterial isolates. Finally presence of thermosensitive plasmids among the bacterial isolates investigated and the results revealed that no such plasmids exist in our bacterial isolates.

Effect of Noise on Hearing Loss and Lipid Profile on Tile Factories Workers in Erbil City

Name: Nashwan Karkhi Abdulkareem
Degree: Master
Specialty: Medical Physics
Date of the debate: 9/3/2010
Supervisor: Asst Prof. Amir D. Al-Dabbagh

Abstract

Background and objective: Noise – induced loss is the second most common form of sensorineural hearing defect in the world health after presbycusis (age – related hearing loss). The present study was designed to know the effect of noise on workers and to assess the influence of some biochemical parameters on development of noise –induced hearing loss (NIHL) on auditory function. , The study was carried out on a hundred volunteers worker in tile factories(Eribil, Galala ,and Al-Rasheed) in Erbil city, during the period from November 2008 to June 2009,to know the effect of mechanical noise at level of (90±5)dB for 6h a day for a different noise exposure time periods ,ranging from (1to 30)years and ages ranging from(18 – ٥٢) years as a first group and the second groups include forty five subjects ages match years with the first groups as a control groups, who have no exposure to industrial noise. Pure tone audiometry was applied to determine the hearing threshold level at frequencies between (0.25 -8)kHz for both groups .Also fasting blood samples were obtained from both groups for biochemical analysis to determine , the biochemical parameters levels, this is include of Cholesterol, LDL, HDL ,and Triglycerides. Volunteer workers were classified due to the ages to six groups:
Classified experiment was given and statistical analysis was preformed to evaluated and determine the mean hearing threshold and standard deviation for all ages groups and exposure time at frequencies between (0.250 -8)kHz for both workers and normal(controls).As well as, fasting blood samples obtained for chemical analysis by manual method. As indicated from diagrams and tables results:
The sensitivity of hearing threshold for controls who have non exposure to noise are better than the workers who have been exposure to noise in the factories at frequencies (3,4,6)kHz . The analysis data (t-test) of hearing threshold at different frequencies especially around (3 to 6) kHz for left and right ear, shows that there is significant difference ($p<0.01$) between workers and control groups. And the chi-square test shows there is relation between increasing of age and increasing of hearing loss at 4kHz ($p<0.01$). The present results indicate greatly increased risk of acquiring a high-frequency sensorinural hearing loss for people who work in noisy environments and audiograms showing the greatest amount of impairment in this area that a"4000Hz dip" which is(17.37) dB for normal subjects compare to (33.44)dB for workers. This is taken to be an indication of damage through exposure to noise (NIHL) although the point of greatest impairment may be localized at around the 4000-Hz level, loss due to noise exposure will extend below and above this point. Also we can clarify that the mean hearing threshold for low frequencies ≤ 2 kHz are slightly affected. The average pure – tone(APT) threshold indicates clearly that the high frequencies (3,4,6)kHz is affected more than low frequencies(0.5,1,2)kHz, especially with aging .This is indicated in the average pure-tone(APT)threshold for age from (18-52)year, which will increase from(21.13 to40.82)dB respectively and for low frequencies it will increase from (17.1to 40.82)dB respectively. Since there is an overwhelming evidence that high blood lipids have deleterious effect on hearing function, the statistical analysis(t-test) in the study for some biochemical parameters indicated ,that there is significant difference for mean level of triglyceride ,high density lipoprotein ,low density lipoprotein ($p=0.027$), ($p=0.027$), and ($p=0.01$) respectively ,while there is no significant difference for cholesterol levels ($p=0.07$)between workers and control persons .According to statistical analysis(chi-square) results of lipid profile levels ,indicated that there is non significant relation between ,alleviated of blood lipid levels and noise –induced hearing

loss, so it needs more studies to carried out to justified this relation. The present study indicates that there is a prevalence of the NIHL phenomenon among the tile factory workers in Erbil city due to the noise which necessitates controlling it in order to protect the workers.

Study of Some Immunodiagnostic Parameters in Patients with Rheumatoid Arthritis

Name: Veyan Mardan Abdullah
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 26/4/2010
Supervisor: Dr. Rukia M. Al-Barzinji
Dr. Dashty A. Al- Bustany

Abstract

Besides the rheumatoid factor (RF), another group of auto-antibodies has been detected in serum of patients with rheumatoid arthritis called anti-cyclic citrullinated peptide antibodies (anti-CCP). This case-control study was conducted to assess the diagnostic value of anti-CCP, RF-latex, RF- isotypes (IgM-RF- IgG-RF and IgA-RF) in rheumatoid arthritis patients.

This study was carried out on 90 patients comprised 17(18.9%) males and 73(81.1%) females (mean age of total 90 patients was 44.29±1.24) with rheumatoid arthritis who admitted Rizgari Teaching Hospital and 30 healthy controls comprised 6(20%) males and 24(80%) females (mean age of total 30 healthy control was 42.23±1.64) in a period between November 2008 and November 2009. Parameters like RF-latex, erythrocyte sedimentation rate and C-reactive protein tests were performed on 90 patients with rheumatoid arthritis and 30 healthy controls. Only 61/90 patients and 27/30 healthy controls were tested for enzyme linked immuno-sorbent assay (ELISA) anti-CCP, RF-IgM, RF-IgG, RF-IgA and C1q binding circulating immune complexes (Ig(GM)).

Out of 90 rheumatoid arthritis patients assessed, 60(66.7%) were RF-latex test positive. Regarding rheumatoid arthritis serological markers, the best specificity recorded by anti-CCP antibodies was (96.2%) followed by RF-IgA (92.5%), RF-IgM (88.8%), RF-IgG (85.2%) and RF-latex (85.1%). While, the best sensitivity recorded by anti-CCP was (73.7%) followed by RF-IgG (70.5%), RF-IgM (65.5%),RF-latex (63.9%) and RF-IgA (42.6%).

The mean serum concentrations of all the above mentioned parameters were higher in patients with rheumatoid arthritis in comparison with healthy control ($P<0.01$). Concerning anti-CCP frequency, a highly significant difference was observed between RF-latex positive (RF+ve) and latex RF-negative (RF-ve) patients ($P<0.01$). Anti-CCP test showed significant ($P<0.05$) and highly significant ($P<0.01$) correlation with RF-latex and RF-isotypes respectively. Moreover, a significant difference ($P<0.05$) was observed in mean serum concentration between anti-CCP+ve and anti-CCP-ve patients concerning RF-(latex and IgA) and a highly significant difference ($P<0.01$) was observed regarding RF-(IgM and IgG). In both of RF+ve and RF-ve patients and healthy control there was a highly significant difference in mean serum concentrations of CRP and in value of ESR ($P<0.01$). CRP and C1q frequency differed significantly between anti-CCP+ve and anti-CCP-ve patients ($P<0.05$). However, $P<0.01$ was observed regarding morning stiffness. Comparing the results of RF+ve and RF-ve on one hand and IgM-RF+ve and IgM-RF-ve on the other hand, there was a highly significant difference concerning CRP, C1q and morning stiffness frequency ($P<0.01$). In contrast, there was no significant difference about ESR ($P>0.05$).

According to anti-CCP, RF-latex, IgM-RF correlations with inflammatory markers, CRP showed no significant correlation with anti-CCP only ($P>0.05$). While, ESR correlated significantly only with IgM-RF ($P<0.05$). Whereas, a highly significant correlation was observed regarding morning stiffness ($P<0.01$). Also, $P>0.05$ regarding mean serum levels of CRP and value of ESR test if compared between anti-CCP+ve and anti-CCP-ve patients.

Both age and family history showed no significant correlation with each of anti-CCP, RF-latex and IgM-RF ($p>0.05$), while smoking correlated with all of them significantly ($p<0.05$). Gender showed only significant correlation with both RF-latex and IgM-RF ($p<0.05$). Results of this study revealed that both anti-CCP and RF tests are

complementary to each other in RA since anti-CCP mostly considered as a diagnostic disease specific marker, while rheumatoid factor mostly related with disease activity.

Renal and vascular Studies on Aqueous extract of Urtica Dioica

Name: Begard Omer Mustafa
Degree: Master
Specialty: Pharmacology
Date of the debate: 15/1/2010
Supervisor: Asst. Prof. Kawa F. Dizaye

Abstract

The renal and vascular effects of the aqueous extract of the stinging nettle Urtica dioica was evaluated in this study. U. dioica extract produced a significant increase in urine volume and urinary Na+ excretion without significant changes in K+ excretion rates in experimental rabbit. No changes occur in GFR and %Na+ reabsorption of filtered load. Neither vasodilatation nor vasoconstriction of isolated pulmonary arteries of the rabbit was seen after applying the aqueous extract of U. dioica. Besides it could not reverse the vasoconstrictor effect of phenylephrine. U. dioica has no detectable effects on the isolated bladder and jejunal smooth muscle; moreover it could not reverse the contraction that was produced by pilocarpine. In experimental rats, the plant extract produced a profound drop in blood pressure associated with decreased heart rate. In conclusion, the aqueous extract of U. dioica produced diuretic and natriuretic effects with out significant effect on the K+ excretion rate; also it produced a profound drop in blood pressure and heart rate.

Assessment of Widal test in Diagnosis of Typhoid Fever and Comparison with Recently Introduced Typhidot-M® in Erbil City

Name: Ahmed Ibrahim Ahmed
Degree: Master
Specialty: Microbiology
Date of the debate: 30/3/2010
Supervisor: Lecturer Dr. Esam Yousif Mansoor
Lecturer Dr. Dashty Abass Al-Bustany

Abstract

Typhoid fever still continues to be a major public health problem, particularly in many developing countries. Clinical diagnosis of typhoid fever is unreliable. Blood culture remains gold standard, but facilities for cultures are limited and often not reliable due to a common use of antibiotics. In such circumstances, diagnosis is made by combination of clinical presentation consistent with typhoid plus a "significant" Widal titer. However, many limitations lead to difficulties in the interpretation of the Widal test result and lack of standardization.

The subjects studied were divided into three groups:

Group A: Included 475 apparently healthy individuals in Erbil city. Serum samples were obtained from above individuals and subjected to Widal test to determine the Anti- STO, STH base line titers.

Group B: Included 93 patients with signs and symptoms of Typhoid fever.

Blood samples were obtained from the above mentioned patients at the time of admission and subjected to Widal tube agglutination test and Typhidot-M test (As newly introduced test that detect IgM antibody). WBC counts and ESR levels were determined for the patients.

Second serum samples were obtained from 45 follow up patients (convalescent phase disease). These samples were subjected to widal tube agglutination test.

Group C: included twenty healthy individuals Blood samples were obtained and serum separated then subjected to widal test and Typhidot-M test (Control group).

This study was performed to determine baseline titer of anti STO, STH among apparently healthy individuals in Erbil city (group A), using Widal test. The result showed that the titer 160 is baseline.

Serum samples were obtained from a total of 93 patients with widal test titers of ≥160 for STO and ≥320 for STH. The patients were mostly treated with ceftraixone. Typhidot-M and Widal tube agglutination test results showed that 49 patients were Typhidot-M positive and 44 negative. The results also showed that among the 49 positive cases of Typhidot-M, 30 patients had significant anti-STO titer, and 41 patients had significant anti-STH titer.

Widal tube agglutination test was carried out on sera obtained from 45 follow up patients (30 Typhidot-M positive, and 15 negative). The results showed that among the 30 Typhidot-M positive patients, 93.33% of patients had a rising anti-STO antibody titer, and 100% had a rising anti-STH antibody titer from acute phase titers.

WBC count and ESR tests were carried out on blood samples obtained from patients at acute phase disease. The results showed that 32.65% of patients with Thyphidot-M positive sera, had leucopenia. The ESR rate was within normal range 10-35 mm/h for most patients examined.

* Baseline of anti- STO, STH agglutinin titers in healthy individuals in Erbil city seems to be equal to a titer 160.
* Widal tube agglutination test at convalescent phase serum appears to be sensitive, and efficient, compared with a new recently introduce Typhidot-M test.
* Typhidot-M test seems to be a very good diagnostic tool at acute phase as an alternative to Widal tube agglutination test.

Therapeutic Effects of Lisuride in Hyperprolactinemic Infertile Women

Name: Hemn Omer Ahmed
Degree: Master
Specialty: Pharmacology
Date of the debate: 10/1/2010
Supervisor: Asst. Prof. Kawa F. Dizaye
Dr. Emil N. Azzo

Abstract

The study has been conducted on 50 patients aged between 19 and 40 years & 30 controls aged between 21 and 35 years. All patients complained of infertility with or without galactorrhea, oligomenorrhoea & amenorrhea. The effects of lisuride on serum prolactin concentration, luteinizing hormone (LH) and follicle stimulating hormone (FSH) at day 2 of menstrual cycle, thyroid stimulating hormone (TSH), progesterone at day 21 of menstrual cycle and kidney function parameters before and after four months were studied. All the patients were clinically examined by a gynecologist and patient complaints including galactorrhea, amenorrhea or oligomenorrhea have been recorded before and after drug administration. This study was conducted from 15 November 2008 to 30 August 2009 in Azadi general hospital in Kirkuk city.

Data obtained from the study revealed significant drop of serum prolactin concentration after lisuride therapy. Normoprolactinemia has been achieved in 98% of women treated with lisuride and 46% of them become pregnant while galactorrhea disappeared in 93.71% and restoration of normal menstrual cycle was noted in 81.81%. No significant changes in kidney function parameters were noted. No correlation between serum prolactin concentration and LH, FSH, TSH have been reported before and after drug therapy, but a significant inverse correlation was noted between serum prolactin concentration and serum progesterone concentration.

The study concludes that lisuride significantly reduces prolactin levels to normal value and improves fertility and ameliorates symptoms of hyperprolactinemia and significantly increases serum progesterone level but within normal value. In addition it had no undesirable effects on kidney function parameter

Cardiovascular Studies of White Squill (*Urginea Maritima*) Extract.

Name: Badr-Aldin Kareem Hamad
Degree: Master
Specialty: Pharmacology
Date of the debate: 23/1/2010
Supervisor: Assis. Prof. Kawa F. Dizaye

Abstract

Squill (*urginea maritima*) has been used through centuries over the world, believed to have certain traditional action. Squill bulb was used by herbalists traditionally for cardiac failure, chronic bronchitis, rodenticides and asthma. Novel cardiac glycosides recently have been isolated from squill known as bufodienolides. Squill extracts has been reported to exhibit peripheral vasodilatation in anesthetized rabbits. In this study in vivo and in vitro pharmacological properties of extract of white squill (white *Urginea maritima*) were evaluated.

The extract of white squill (*Urginea maritima*) produced vasoconstriction on isolated pulmonary artery of rabbit .Besides it could reverse the vasodilator effect of isosorbide dinitrate. The vasoconstrictor activity of the extract was not inhibited by doxazocin whereas it was blocked by amlodipine. The vasoactive response can be explained by blocking Na^+, K^+ ATPase by the glycoside (bufodienolides) which is found in the extract.

The extract has quite clear positive inotropic effect on isolated left atrium of the rabbit .This effect is not due to stimulation of Beta -1 adrenoreceptor hence the effect was not antagonized by timolol. This effect is not related to phosphodiesterase inhibition since the extract could cause negative chronotropic effect in rat. The cardiotonic effect was inhibited by verapamil. The positive inotropic effect could be resulted from inhibiting the enzyme Na+/K+ ATPase pump.

The extract of white squill (*Urginea maritima*) produced marked diuretic and natriuretic effects with significant reduction in urinary K^+ excretion rate in rabbits. This effect could be attributed to inhibition of Na^+ / K^+ATPase activity in late distal convulted tubules and collecting ducts.

In experimental rats the plant extract produced a profound drop in blood pressure associated with decreased heart rate. This hypotensive effect might be due to the diuretic property. While the decreased heart rate could be due to increased vagal tone, a reflex mechanism through baroreceptors and direct action on SA and AV nodes.

Antibacterial activity of pomegranate peel extract on some bacteria and comparison with vitamin C and gemifloxacin on inhibiting adhesion of Escherichia coli to uroepithelial cells & biofilm formation

Name: Zhian Ghazi Hussein
Nature of Research: Academy
Degree: M. Sc.
Specialty: Pharmacology
Date the debate: 19/12/2010
Supervisor: Dr.Nidhal AbdulKadir Al-saleem

Abstract

Punica granatum L. or pomegranates, has been reported to have antimicrobial activity against a range of gram positive and gram negative bacteria.
Different solvents (watery and hydroalcoholic) were used for extraction of pomegranate peel & screening of active ingredient showed presence of tannins & polyphenols in all of the extracts.
Pomegranate peel extract showed antimicrobial activity against Escherichia coli (ATCC 25922) Pseudomonas aeruginosa (ATCC 27853) & Staphylococcus aureus (ATCC 25923) by agar diffusion method and the minimum inhibitory concentration (MIC) determined by tube dilution method were 30,40&625µg/ml for Escherichia coli (ATCC 25922) Pseudomonas aeruginosa (ATCC 27853) & Staphylococcus aureus respectively while pomegranate juice extract showed higher MIC value of ≤60 µg/ml.
The MIC of vitamin C alone & in combination with PPE found was 10&5 mM /ml respectively while the MIC of gemifloxacin was 0.03µg/ml.
E.coli (ATCC 25922) showed high affinity to haemagglutinate red blood cells which was inhibited in the presence of D-mannose 2.5%,fresh pomegranate peel extract (FPPE), vitamin C & gemifloxacin.
In vitro and in vivo adhesion of E.coli (ATCC 25922) to uroepithelial cells were inhibited by FPPE, vitamin C, combination of FPPE with vitamin C, gemifloxacin and D-mannose.
In vitro biofilm formation of E.coli (ATCC 29522) was significantly inhibited by FPPE, combination of FPPE and vitamin C and gemifloxacin

Role of 99 m Technitium Labeled Methylene Diphonate Bone Scan in the management of Newlyd Diognosed Breast Cancer Patients

Name: Niaz Hasan Ismael
Nature of Research: Academy
Degree: M. Sc.
Specialty: Nuclear Medicine
Date the debate: 12/12/2010
Supervisor: Prof. Muhammed Abdul Karim

Abstract

Background: The 99m-Technetium Methylene diphosphonate (99mTc- methylene diphosphonate) bone scans historically have played a significant part in the evaluation of skeletal disease and continue to be the most clinically utilized investigation in the staging and follow-up of breast cancer patients, it is highly sensitive for detection of skeletal metastases and is the simplest method of surveying the entire skeleton quickly.
Objectives: This descriptive cross-sectional study was done to evaluate the role of bone scan in detecting skeletal metastases in breast cancer patients.
Methods: Bone scintigraphy was done for 56 breast cancer patients within 3 months of their histopathological result using 99mTc- methylene diphosphonate as a bone seeking agent. Abnormal bone scan were correlated with standard radiographs taken within days of the scan.
Results: In this study, the age range of the patients was 30-75 years (mean ±SD: 50.3±10.8 years) with only one male patient. Clinical staging by TNM system found 16% (9), 44.6% (25), 19.6% (11) and 19.6% (11) patients of 56 in stage I, II, III and IV disease, respectively. Skeletal metastases were detected in 41% (23) of patients. Incidence of skeletal metastases was found increasing in relation to clinical staging that was seen in 0% (0 of 9), 24% (6 of 25), 54.5% (6 of 11) and 100% (11 of 11) of patients with stage I to IV disease, respectively. Axillary lymph nodes were involved in 66% (37 of 56) of patients 56.75% (21 of 37) of them had skeletal metastases, patients with advanced local-regional disease form 39.28% (22 of 56) of patients, 77.2% (17 of 22) of them had bone metastases, and in 19.64% (11 of 56) of patients who had abnormal radiological findings, 81.81% (9 of 11) of them had multiple bone metastases, all showed a highly significant relationship with skeletal metastases ($P < 0.05$).
The most involved anatomical sites by metastatic foci were the ribs (82%), upper limbs, spines, sternum, pelvis and the skull, from the most to least common, with 5.3% (3 of 56) of patients presented with solitary metastatic lesion, mostly located in the spine.
Conclusion: Bone scan provides baseline information and allows early detection of bone metastases in patients with early disease. It also has an important role in the prediction of complications in patients having metastases by detecting sites at risk for pathological fracture or spinal cord compression. This is especially true for breast cancer patients with regional lymph nodes involvement and/or in advanced local-regional disease.
Bone scan is recommended to be used increasingly by physicians for detection of bone metastases newly diagnosed patients with breast cancer to determine the best form of treatment.

Examination of Some physiotherapy Methods for The Selection of the Best One in the Treatment of Each Type of Hip and Knee Joints Injuries

Name: Elham Khald Ibrahem
Degree: M. Sc.
Specialty: Medical Physics
Date the debate: 11/10/2010
Supervisor: Dr .Fatehiya F. Hasan

Abstract

Range of motion is a description of how much movement exists at a joint . Rotation is the typical movement that called angular movement; the unit degree is used when measuring range of motion. Range of motion can be measured either by active or passive form. Active range of motion created by patient, passive range of motion created with equipment. Passive range of motion is always greater than active range of motion.
In this study sixty (60) patients were participate who were having disorders in their hip and knee joints (fracture, arthritis, rheumatoid,…). These patients were divided into 3 groups , 20 patients each. the first group treated with microwave therapy, the second group treated with infrared therapy, and the third group treated with paraffin wax therapy.
They were 60 patients were participate, they were distributed in mixed group, there ages range between 20-75 years.
Goniometric measurements were used every two weeks for hip (flexion, extension, abduction, adduction, internal rotation, external rotation) joint,and some for knee(flexion, extension) joint. Before physiotherapy we registered 360 measurements for hip and 120 measurements for knee, 2160 measurements after12 weeks for hip and 720 measurements for knee at the end of treatment.
The final results showed that microwave was more effective than infrared and paraffin wax especially in knee joint which was more effective than hip joint. The patients who referred early and regular in physiotherapy have increased range of motion. From data females have decreased range of motion than males. The conclusion of research measurements should be taken by the same therapist on the same position to decrease error in measurements.

Assessment of Tumor Necrosis Factor-Alpha and Its Relationship with Human Chorionic Gonadotropin, Testosterone and Uric Acid in Preeclampsia

Name: Safia Sabr Ibrahim
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 2010
Supervisor: Assistant Professor. Saeed K. Hussain

Abstract

Preeclampsia (PE) is one of the common obstetric problems with unknown etiology. The main aim of recent study is to assess the relation of some immune, hormonal and biochemical parameters with the disease pathophysiology.

Preeclampsia is a multisystem disorder peculiar to human pregnancy and characterized by the onset of hypertension and proteinuria after 20th week of gestation. The pathophysiology of this disorder is still not clear. PE is not only associated with significant maternal, fetal morbidity and mortality during the index pregnancy, but also with a higher risk of cardiovascular disease later in life.

This prospective study was conducted from September 2009 to March 2010. We assessed some immune, hormonal, and biochemical parameters in preeclamptic and normotensive women. The enrolled women comprised of sixty preeclamptic and thirty normotensive women. The collected serum specimen of the tested groups were subjected to different tests like ELISA and other techniques for the assessment of parameters like evaluation of Tumor Necrosis Factor-α, Anti-dsDNA antibody, high sensitivity C-Reactive Protein, Total Testosterone, β-human Chorionic Gonadotropin, and Uric acid.

There were elevated level of TNF-α, hsCRP, T.T., Anti-dsDNA antibody and serum uric acid in preeclamptic women in comparison with normotensive ones, and the differences was statistically significant. The level of β-hCG was higher in normotensive women than preeclamptic women.

There seemed a strong correlation between proinflammatory cytokine like TNF-α with parameters like T.T., hsCRP, β-hCG, microalbuminuria, and MAP (Mean arterial pressure). This may reflect the significance of TNF- α in the pathophysiology of PE and its role as direct or indirect in the disease progress and complications.

Seroprevalence of Human Brucellosis in Erbil City

Name: Dlsoz Kareem Rasul
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 19/1/2011
Supervisor: Lecturer Dr. Isam Yousif Mansoor

Abstract

A total of 2085 patients suspected having brucellosis attending, Rizgary and Erbil Teaching Hospitals were examined using Rose Bengal test. The sera of 223 patients (10.7%) produced positive reaction indicating the presence of antibrucella antibodies.
The result showed that the seropositivity of brucellosis in female (12.48%) was significantly higher than male (8.02%); the ratio of female to male was 1.55:1.
The seropositivity of brucellosis in rural area was (40.98%) and in urban area was (9.44%). The ratio of rural to urban was 4.34:1. The highest seropositivity of brucellosis occurred among age group (21-30) .(years (31.25%) and the lowest among age group (61-70) years (1.95% The results showed that (71.75%) of patients were infected with B. miletensis and (28.25%) with Brucella abortus by using Rose Bengal test. The highest seropositivity according to source of infection occurred among individuals who were in contact with animals (37.34%). Only in (9.95%) of the cases the infection were attributed to the dairy consumers with high significant differences. The seropositivity of infection in occupations was the highest among the farmers and dairy workers (37.5% and 37.28%) respectively and the lowest among teachers (4.15%). The monthly distribution of brucellosis from October 2009 to April 2010 (study period) was examined. The results showed that the highest seropositivity occurred in October (12.72%) and the lowest in February (8.72%), start to rise in March and April. All Rose Bengal positive sera (223) were subjected to Standard tube agglutination test to determine the titer of anti-Brucella antibodies. The highest percentage of cases (31.4%) had a titer 320 and the lowest percentage of cases (14.3%) had a titer 640. Enzyme-linked immunosorbent assay as a specific and sensitive test was carried out to determine the classes of immunoglobulins in the patient sera and to examine the efficiency of Rose Bengal test. Among 82 Rose Bengal positive sera, 59 sera (72%) were positive using ELISA technique. Forty four percent of immunoglobulins belonged to IgG class, and 28% belonged to IgM class. The differences were highly significant. All ELISA positive sera (59) were subjected to 2-Mercatoethanol test to examine the efficiency of this technique for detecting anti-brucella IgG and IgM in the patient serum. The results showed that the agreement rate between ELISA and 2ME tests was (63.8%).

Bronchodilator and Diuretic studies on Hydroalchoholic Xtract of Thymus Vulgaris

Name: Zana Ahmed Mustafa
Degree: Master
Specialty: Pharmacology
Date of the debate: 4/1/2011
Supervisor: Asst Prof. Kawa F. Dizaye

Abstract

Thyme (Thymus vulgaris) has been used through centuries over the world, believed to have certain traditional actions. Thyme was used by herbalists traditionally as an antiseptic before the advent of modern antibiotics. A tea made by infusing the herb in water can be used for cough and bronchitis. In this study in vivo and in vitro pharmacological properties of thymus vulgaris extract were evaluated.

Hydro-alcoholic extract of thymus vulgaris produced bronchodilation in isolated bronchi of rabbit. Besides that could reverse the bronchoconstriction induced by pilocarpine.

The extract has a marked vasodilator effect on isolated pulmonary artery of rabbit after induction of vasoconstriction by KCl. It also relaxed isolated jejunum smooth muscle of rabbit and reversed contraction of jejunum induced by betahistine.

The extract of thymus vulgaris produced marked diuretic and natriuretic effects, without significant changes on urinary K+ excretion rate.

Immunohistochemical Expression of P53 and P21 Gliomas; a Clinocopathological Study

Name: Tara Mahammed Ali
Degree: Master
Specialty: Pathology
Date of the debate: 26/3/2011
Supervisor: Dr. Jalal A. Jalal

Abstract

Gliomas are considered as the most common type of intracranial tumors; their clinical course is primarily determined by the biological behavior of the tumor cells. p53 is a tumor suppressor gene implicated in the genesis of a variety of malignancies including brain tumors. Overexpression of the p53 protein is often used as an indicator of alterations in the p53 gene. The Cdk (cyclin dependent kinase) inhibitor p21/WAF1 (wild -p53 activated factor) can be transcriptionally activated by the wild-type p53, not by mutant p53, and functions to block the cell –cycle progression in many human neoplasms. This study was designed to evaluate p53 and p21 proteins overexpression in gliomas and their relation to some clinico-pathological parameters.

During a period extending from June 2007 till July 2010, formalin fixed, paraffin embedded blocks of 60 cases of gliomas were collected; they included 44 cases of astrocytoms, 5 oligodendrogliomas, 2 oligoastrocytomas, and 9 ependymomas. These cases were evaluated by immunohistochemistry using LSAB (labeled streptavidin biotin) method. Overall, 53% of gliomas were positive for p53; there was a significant association with patient's age and site of tumors. The positive cases included 66% of astrocytomas, 20% of oligodendrogliomas , and 100% of oligoastrocytomas. On the other hand all of the ependymomas were negative for p53 protein. For p21 on the other hand, 25% of gliomas were positive; these included 23% of astrocytomas, 40% of oligodendrogliomas, 50% of oligoastrocytomas, and 22% of ependymomas. p53 and p21 positive indices lacked association with the type of the tumors. The results of the present study suggest that p53 and p21 overexpression is common in gliomas, and they are related with each other in cases of astrocytomas.

Antental Care: Effectiveness and Implications on pregnancy Outcome in Erbil City

Name: Naska Abdulkadir Hussein
Degree: Master
Specialty: Community Medicine
Date of the debate: 17/3/2011
Supervisor: Professor .Tariq S. Al-Hadithi

Abstract

The primary aim of antenatal care is to achieve at the end of a pregnancy a healthy mother and a healthy baby. The goal of antenatal care is to prevent health problems in both infant and mother and to see that each newborn child has a good start.
This study was done to assess of antenatal care and determine its implications on pregnancy outcome among pregnant women attending the Maternity Teaching Hospital in Erbil city.
In order to fulfill theses aims, a cross- sectional study was carried out in Erbil city during the period 15th of Sep 2009 to 8th of Jan 2011. The sample included 1000 women and 1031 newborns at the Maternity Teaching Hospital in Erbil city. Women aged 14-45 years were interviewed using a questionnaire form designed by the investigator. Collection of data was conducted over a period of six months from 1st Dec, 2009 through 10th Jun, 2010.

Overall, 86.1% of women had antenatal care during pregnancy; 51.3% had 4-6 visits, 11.4% of them visiting public sector. The association of pre-term delivery and low birth weight with antenatal care was not statistically significant (P=0.818) and (P=0.613) respectively. Receiving of antenatal care was significantly associated with perinatal mortality (P=0.005), blood transfusion (P=0.030), antepartum haemorrhage (P=0.010), delivery by caesarean section (P<0.001), It can be concluded that the coverage rate of antenatal care is in the range of other governorates of Iraq and that education and occupation of mothers and socio-economic status was significantly associated with antenatal care.

Mycological Study of Dermatophytoses in Patients at Rizgary Teaching Hospital in Erbil City

Name: Banaz Sadik Smael
Nature of Research: Academy
Degree: M. Sc.
Specialty: Medical Microbiology
Date the debate: 24/5/2011
Supervisor: Sahand Ismail Hamad

Abstract

Dermatophytosis is a very common fungal infection of skin, hair, and nail caused by dermatophytes. The epidemiology of dermatophyte infections is changing due to immigration, travel, and socioeconomic development.
This study was carried out on 152 cases of suspected dermatophytosis that were referred to Dermatology Department at Rizgary Teaching Hospital-Erbil, during the period extended from the 24th of November 2009 till 16th of June 2010.
Out of 152 patients, 88 (57.9%) were females, and 64 (42.1%) were males, patients age ranged between 2-70 years, the mean age was 27.38 years, the maximum age group incidence was ≤10 years.
The high rate of the disease was observed in patients of poor socioeconomic state 83 (54.6%). The urban peoples had a higher incidence 120 (79%) than the rural peoples 32 (21%). Thirty six (23.7%) of patients were Illiterate, 84 (55.3%) were of Primary level, 21 (13.8%) were Secondary level and 17 (7.2%) were of high educational level.

The main predisposing factors of the disease were animal breeding 20 (74.1%), diabetes 4 (14.8%), swimming 2 (7.4%) and 1 (3.7%) obesity.
The clinical examination revealed 37 (24.5%) cases of tinea pedis, 34 (22.3%) cases of tinea corporis, 33 (21.7%) cases of tinea capitis, 23 (15.1%) cases of tinea manuum, 13 (8.5%) cases of tinea unguium, 7 (4.6%) cases of tinea cruris, and only 5 cases (3.3%) of tinea faciei.
Cases of tinea corporis, tinea pedis, tinea manuum, tinea unguium, and tinea faciei were detected mainly in females while tinea capitis and tinea cruris were detected more in males.
Tinea capitis was more predominate in children accounting 30 cases (90.9%).
Specimens obtained from skin or nail scrapings or hair from 152 suspected cases of dermatophytosis. The mycological examination revealed ٩٥ (٦٢.٥%) positive direct microscopic examination while cultural examination revealed 68 (44.7%) positive cultures.
Nine species were identified, and Trichophyton rubrum was the most commonly isolated dermatophytes accounting (26.5%) of the cases, followed by T. mentagrophytes (20.6%) and Epidermophyton floccosum (13.2%) and other species included: T. violaceum (8.8%), T. verrucosum (8.8%), M. audouinii (5.9%), M. canis (5.9%), M. gypseum (5.9%), and T. tonsurans isolated in (4.4%) of the suspected cases.

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Evaluation of Certain Immunological Parameters in Patients Afflicted with Auto Immune Thyroid Disorders in Erbil City

Name: Liza Jamal Yousif
Nature of Research: Academy
Degree: M. Sc.
Specialty: Medical Microbiology (Immunology)
Date the debate: 15/5/2011
Supervisor: Assist. Prof. Nabeel E. Waheda

Abstract

Autoimmunity to thyroid gland is one of the commonest organ specific autoimmune disorders and it results in a spectrum of thyroid diseases and ranging in their clinical presentation from hyperthyroidism to hypothyroidism.

The well understanding of autoimmune and thyroid interactions and the associated analytical aspects of their biomarkers provide more reliable diagnosis, prediction, prognosis and finally treatment of the diseases.

This study focused on some analytical aspects of major thyroid autoantibodies like (anti thyroglobulin antiTg, anti thyroid peroxidase antiTpo, anti thyrotropin Hormone receptor antiTSHr), determination of serum IL-6 in autoimmune hyper and hypothyroidism in comparison with the healthy euthyroid control group and the description of the correlation between mean concentrations of IL-6 and each of the mentioned autoantibodies in autoimmune hyper and hypothyroidism.

The research was carried out during the period of November/2009-December/2010 and total of 203 patients with overt hyper or hypothyroidism who attended to Komari and Rizgari teaching hospitals were included in this study, in addition to 20 biochemically euthyroid and apparently healthy individuals were included as a control group.

The study found that Autoimmune Thyroid Disorder (AITD) more often affected patients with age range of more than 40 years old, and the females were more prone to develop AITD than males in a ratio of about 3:1.

The differentiation of the 203 according to having hyper or hypothyroidism was depending on thyroid function test, showed that the prevalence of hypothyroidism was higher (126 out of 203) than hyperthyroidism (77) in the patients.

The sera of 203 patients with hyper and hypothyroidism and the sera of control group were tested for either thyroid antibodies (120 tested for antiTg and 83 tested for anti Tpo), so the 90 sera of the patients (45 positive for antiTg and 45 positive for anti Tpo) classified as having (AITD) and the sera of the 20 control group were tested for the antiTSHr antibody and serum IL-6.

The study found a higher positive percentage of antiTpo (54.2) in comparison with the anti Tg positive percentage (37.2).

However, the higher percentage of anti Tg was observed in hyperthyroidism (46.2) in comparison with its corresponding in hypothyroidism (33.3) meanwhile, the higher percentage of anti Tpo was observed in hypothyroidism (57.8) rather than hyperthyroidism with (50) percent.

There was a highly significant increases in mean concentration of anti Tg (347 and 261 IU/ml) in sera of patients with hyper and hypothyroidism respectively in comparison with its mean concentration (69.1 IU/ml) in sera of control group, ($p<0.01$). and there was also highly increases in mean concentration of anti Tpo(192.64 and 225.58 IU/ml) in sera of patient with hyper and hypothyroidism respectively when compared with its mean concentration (26.1 IU/ml) in sera of control group, ($p<0.001$).

The study reported a higher prevalence of anti TSHr positivity (19 out of 37) in hyperthyroidism than in hypothyroidism (6 out of 53).

There was a highly significant elevation in mean concentration of antiTSHr antibody (19.72 and 10.87 IU/ml) in sera of patients with hyper and hypothyroidism respectively in comparison with its mean concentration (0.12 IU/ml) in sera of control group, ($p<0.001$).and there was also a significant increases in mean concentration of antiTSHr

(19.72 IU/ml) in sera of patients with hyperthyroidism in comparison with its mean concentration (10.87 IU/ml) in sera of patients with hypothyroidism, ($p<0.043$)

The study found a highly significant elevation in mean concentration of serum IL-6 in autoimmune hyper and hypothyroidism (28.2 and 26.6 pg/ml) respectively when compared with its mean concentration (16.67) in sera of control group, $p<0.001$

The study showed a significant positive correlation between mean concentration of serum IL-6 and each of thyroid autoantibodies the antiTpo and antiTg ($r=0.37$, $p=0.03$) and ($r=0.869$, $p=0.025$) respectively in patients with autoimmune hyper and hypothyroidism, and a significant correlation mean concentration of serum IL-6 and mean concentration of anti TSHr antibody in patients with autoimmune hyperthyroidism ($r=4.6$, $p=0.031$

Amplification and cloning of avian influenza virus AIV - H1N1 segments

Name: Bejan Ahmad Dizaye
Degree: Master
Specialty: Medical Microbiology
Date of the debate:5/7/2011
Supervisor: Ass. Prof. Farhad Mahraf Barzanji

Abstract

The swine-origin influenza A (H1N1) virus, disappeared since 1968 and was first found in human beings in Mexico in 2009, a single case of H1N1 in Kurdistan region was isolated and identified in Sulaimania where declared by NCBI and labeled as Influenza A virus (A/Sulaimani/05/2009(H1N1)).

The sample of H1N1 where used in our project, was provided kindly by (Vet. Dr. Zana Mahmod), from Kurdistan institute for strategic study and scientific research "KSSSR".

We interested in amplification of the 8 segments (PB2, PB1, PA, HA, NP, NA, MA and NS) of the H1N1 viral RNA separately using the specific forward and reverse primer for each segment.

We made use of three different strategies for amplification of the 8 segments of the viral RNA:

1. Rapid method, using cDNA of the 8 segments prepared in one RT reaction tube, for amplification of all 8 segments, by using all specific primers to perform RT-PCR in one single reaction tube.
2. Amplification of each segment in separate reaction tube using cDNA of the 8 segments prepared in one RT reaction tube.
3. Amplification of each segment in separate reaction tube, using cDNA of each segment was prepared separately.

Several RT reactions were made to prepare cDNA using two different kinds of RT enzymes, different RT-PCRs performed for each RNA segment separately, according to the suggested strategies.

Agarose Gel electrophoreses screen test used to visualized the amplification products, it was obvious that all RT-PCRs produced small bands for the 8 segments of viral RNA, around 100 bp, where was smaller than the suspected size for each RNA segment and in some reactions we obtained large bands.

In order to study the feature of the amplification products, The 8 small bands extracted, purified and cloned on pTZ57R, were transformed in to *E. coli*-DH5α, the transformant competent cells plated on the LB/Amp.Xgal.IPTG selective plates, the blue-white colony test show the result of transformation, where the DH5α containing cloned victor will grow on LB/Amp.Xgal.IPTG selective plates forming white colonies while the others produce blue colony.

Colony PCR and RT-PCRs are performed for MCS using the specific MCS primers and specific of the 8 segments in order to confirm the result of the transformation.

The small bands that obtained from amplification of the 8 segments were sent for sequencing.

Diagistic Accuracy of Scintigraphy, Sonography and Fine Needle Aspiration Cytology in the Detection of Malingancy in Solitary Thyroid Nodule

Name: Aza Ismael Abdi
Nature of Research: Academy
Degree: M. Sc.
Specialty: Nuclear Medicine
Date the debate: 4/1/2011
Supervisor: Prof. Muhammed Abdul Karim

Abstract

Background: Goiter is a problem of enormous magnitude all over the world. Ninety percent of thyroid tumors present as a solitary thyroid nodule, and up to 30% may have malignancy. Through this study, scintigraphic methods were performed for the first time in Kurdistan region by using computerized gamma camera with associated software system.
Objective: The aim of this study is to compare the accuracy (sensitivity and specifity) of scintigraphy, sonography and fine needle aspiration in detecting malignancy in solitary thyroid nodule and determining the correlation between thyroid scintigraphy and fine needle aspiration in increasing the accuracy together.
Patient and method: This cross sectional study carried out during the period Oct-2009 to April-2010. Out of two hundred, sixty patients with solitary thyroid nodules selected in nuclear medicine section, Radiology department, Hawler Teaching Hospital. All cases assessed clinically, and then underwent 99mTc scintigraphy, sonography, and FNAC, but final diagnoses were confirmed by histopathology after operation.
Results: We retrospectively reviewed a series of 60 consecutive patients with solitary thyroid nodules 10(16.67%) male 50(83.33%) female and range 18 to 62 years with mean age 34.2(SD ±9.9) years.
Conclusion: Scintigraphy probability of malignancy is higher in nonfunctioning and hypo-functioning nodules. Scintigraphy examination is able to prove presence of autonomous functioning nodules (hot nodules), thus excluding thyroid carcinoma. Diagnostic accuracy of fine need aspiration cytology is much higher than that of sonography and scintigraphy. Cold nodules with suspicious follicular neoplasm considered at risk of having thyroid carcinoma. Thyroid scintigraphy and fine needle aspiration cytology together are leading to increase accuracy. Finally, most of thyroid solitary nodules were benign and most of malignancies were papillary cell type.
All patients underwent scintigraphy, sonography and FNAC; 99mTc-pertecnitate thyroid scintigraphy was performed. The results were interpreted as hypofunctioning (cold) nodules in 39 patients (65%), iso-functioning (warm) in 10 patients (16.66%), and hyperfunctioning in the remaining 11 patients (18.33%). Final histopathology showed 52(86.6%) benign nodules including 6(75%) papillary cell carcinoma and 1(12.5%) follicular carcinoma and 1(12.5%) mixed papillary carcinoma. The sensitivity, specifity, positive predictive value, negative predictive value, false positive, false negative and accuracy in detection of thyroid cancer respectively were 87.5%, 38.46%, 17.49%, 95.23%, 82.05%, 4.76% and 45% for TS, 62.5%, 57.69%, 18.51%, 90.09%, 81.48%, 9.09 and 58.33% for sonography and 75%, 94.23%, 66.66%, 96.07%, 33.33%, 3.92% and 91.66% for FNAC.

Evaluation of some T cell derived cytokines in patients with rheumatoid arthritis

Name: Tola Abdulsattar Faraj
Nature of Research: Academy
Degree: M. Sc.
Specialty: Clinical Immunology
Date the debate: 13/7/2011
Supervisor: Ass. Prof. Ruqaya M. Al-Barzinji

Abstract

Rheumatoid arthritis (RA) is a chronic inflammatory disease characterized by persistent synovitis that leads to joint destruction. Pro-inflammatory cytokines such as interleukin- 1α and anti-inflammatory cytokines such as interleukin-4 are produced by the inflamed synovia in RA, and are thought to participate in the pathophysiology of RA. The aim of this prospective study was to assess and correlates some immunological factors in RA patients compared with healthy controls (HC). The sera collected from RA patients and HC were subjected to some immunological tests, parameters like RF latex, quantitative CRP test, IL-1α and IL-4 concentrations were estimated by using enzyme linked immunosorbent assay (ELISA).

This study was carried out on 60 patients comprised 7 (11.66) males and 53 (88.33) females who admitted Rizgari Teaching Hospital and Wafa diagnostic laboratory with 29 HC comprised 5 (17.24) males and 24 (82.75) females in a period between August 2010 and February 2011. Female patients fell between (50-59) age group was more RA affected group, with higher risk (88.33%) than males (11.66%) with high significant differences ($P<0.01$).

Females with rheumatoid factor positive (RF+ve) were more predominantly 28 (52.8%) than rheumatoid factor negative (RF-ve) patients 25 (47.1%). Additionally, most of them in active state C-reactive protein positive (CRP+ve) 30 (56.6%) comparing with those located in remission state C-reactive protein negative (CRP-ve) 23 (43.3%) with no significant differences in both above parameters.

A highly significant increase in mean concentration of CRP in RA patient with CRP+ve when compared with it is mean concentration in sera of patients with CRP-ve and HC ($P<0.01$), while no significant differences were found in mean concentration of CRP in patients with CRP-ve in comparison with HC ($P> 0.01$).

The mean serum concentration of IL-1α and IL-4 were higher in sera of RA patients when compared with HC ($P<0.05$).

In mean concentration of sera IL-1α and IL-4 were higher in patients with CRP+ve comparing HC, while no significant difference in their concentration in sera of patient with CRP-ve.

The result showed no significant differences in mean serum concentration of IL-1α and IL-4 in both sex regarding the RA patient with different results of CRP and RF tests.

There were no significant correlation between IL-1α and IL-4 with IL-1α, RF, CRP, ESR and IL-4 ($P>0.05$), also above result were found in correlation between CRP and ESR with RF ($P>0.05$), but highly significant differences was found with ESR ($P<0.01$).

No significant differences ($P>0.05$) was reported when study the effect of diseases duration in RA patients on IL-1α and IL-4 concentrations ($P>0.05$).

Menarche and Menstruation Related Problems and Practices among Adolescent Girls in Erbil City

Prevalence and Factors Associated with Violence among a Group of Married women in Erbil

Name: Hazha Hoshyar Mohammed
Degree: Master
Specialty: Community Medicine
Date of the debate: 14/5/2011
Supervisor: Asst. Prof. Namir Ghanem Al-Tawil

Abstract

Violence against women is an important public health issue and serious human rights abuse that occurs in every country among all social, cultural, economic, and religious groups. The study aimed to determine the prevalence of different forms of violence against women and studying the factors that might be associated with intimate partner's violence. A cross-sectional study was carried out in Erbil city involving a convenience sample of 800 ever married women attending the Maternity Teaching Hospital and Rizgary Teaching Hospital in Erbil city. The study extended from the 1st October 2009 to 30th March 2011. Intimate partner violence was assessed using the World Health Organization's domestic violence questionnaire.

The percentages of women experienced at least one form of violence since marriage were: 52.6% psychological violence; 38.9% physical violence; and 21.1% sexual violence, while 43.3%, 15.1%, and 12.1% of women experienced at least one form of psychological, physical, and sexual violence in the past year, respectively. Physical violence during pregnancy among 699 women who were pregnant was 12.9%. On multivariate analysis, the strongest predictors of lifetime violence were higher aged women, younger age of women at marriage, forced marriage, frequent quarrelling, non partner violence, women had witnessed violence during childhood, women's attitude toward beating, and partner's control. The strongest predictors for past year violence were forced marriage, frequent quarrelling, non partner violence, women's attitude toward beating, presence of both genders children in family, partner's control, and partner had witnessed violence during childhood.

In conclusion, violence against women is prevalent in Erbil. Efforts to reduce violence should be given high priority and requiring a multidisciplinary approach to understand its causes and plan preventive measures, particularly in health care settings where women can be reached.

Maternal Knowledge, Attitudes and Practices Regarding Infant and Their Impact on the Child Growth in Erbil City

Name: Sahira Wali Khalid
Degree: M. Sc.
Specialty: Community Medicine
Date the debate: 10/7/2011
Supervisor: Asst Prof. Namir G. Al- Tawil

Abstract

The growth of an infant is strongly linked to how he or she is fed. The nutritional, immunological and growth benefits of breastfeeding have been proven, and so the breastfed infant is the natural standard for physiological growth. The main aims of the study were to assess knowledge, attitudes and practices of mothers concerning infant and young child feeding and to assess the nutritional status of the infants.

In order to fulfill these aims a survey was carried out at 12 Primary Health Care Centers in Erbil city during a period from 1st of October 2009 to 9th of April 2011. A convenience sample of 700 (mother-child pairs) were selected while attending the Primary Health Care centers for routine vaccination. A structured questionnaire was used in data collection; it covered socio-demographic variables, mothers' knowledge, attitudes and practices. Data were collected by direct interview with the mothers.

The results of the study revealed that the full breastfeeding rate (exclusive and predominant rate) was 18.4%, and only 27.4% of the mothers initiated breastfeeding within the 1st hour after delivery. The duration of the breastfeeding was decreasing with increasing infant's age. Continued breast feeding rate (CBFR) at one year was 44.6%. Majority (70%) of infants were formula feeding at the time of data collection, and main reason (73.1%) for introducing formula feeding was insufficient maternal milk as reported by the mothers. Half (50.6 %) of the infants have been weaned before the age of 6 months. Vast majority (96.6%) of the mothers believed that colostrum is good for the infants, while (74%) of them believed that formula feeding increases the risk of obesity in the childhood.

It can be concluded that although majority of mothers have good knowledge, attitudes, but they have poor practices concerning breastfeeding, and weaning.

Antiplasmid (Curing) Effect of Alcoholic Extract of Rosmarinus officinalis on Resistant Isolate of Pseudomonas Aeruginosa

Name: Sara Ibrahim Othman
Degree: M. Sc.
Specialty: Medical Microbiology
Date the debate: 4/6/2011
Supervisor: Asst. Prof.Adel K. Kheder

Abstract

One hundred fifty six swab samples were collected from clinical specimens of human deep burn infections admitted to Hawler Emergency Hospital during the period from 12th of November to the end of February 2010. Sensitivity testes for these isolates to eight antibiotics which include eight antibiotics {Amoxicillin (Amox.), Augmentin (Aug.), Ampicillin (Amp.), Cephalexine (Ceph.), Ciprofloxacin (Cip.), Doxycyclin (Dox.), Nalidixic acid (Nal.) and Rifampicin (Rif.)} were performed; according to the resistance of the isolates to these antibiotics they were classified into 20 groups that showed the sensitivity variation in their resistance to these antibiotics, in which isolates P3, P22, P40, P43, P45, P46 and P48 were resist to all antibiotics under study, while the rest showed variability in their resistance. To determine the location of responsible genes for antibiotics resistance in P. aeruginosa isolate P40, genetic transformation process of laboratory Escherichia coli DH5α strain with purified plasmid DNA from P. aeruginosa isolate P40, was conducted successfully and colonies of this process appear to be resistant to the following antibiotics (Amoxicillin, Augmentin, Ampicillin, Cephalexine, Ciprofloxacin, Doxycyclin, Nalidixic acid and Rifampicin) which indicates that the genes encoding these antibiotic resistance were located on plasmid DNA . Agarose Gel Electrophoresis done to clarify the transformation process much clearly. Alcoholic crude extract of Rosmarinus officinalis were used as a medicinal plant and curing agent for elimination antibiotic resistance genes of P. aeruginosa isolate P40. This was done through determination
of minimum inhibitory concentration (MIC) of this medicinal plant was 200 µg/ml for alcoholic extract, the sub minimum inhibitory concentration (SMIC) used as a curing agent and for these transferring colonies were used, which cause decreasing number of bacteria; it means that few amount of crude extract inhibit bacterial number comparing with other plant extracts. The results showed remarkable effect of SMIC of plant extract in elimination of antibiotics resistance genes in vitro: The effect of SMIC of alcoholic extract on antibiotic resistance genes (ARG) to (Amc., Aug., Amp., Cef., Cip., Do., Nal. and Rif.) for isolate P40, showed reduction of the resistance genes from 4% to 100% . The above results were realized in vitro, while for in vivo experiment, Mus musculus were used as experimental animal. The experiment included orally infection of mice with 109 CFU/ml of P. aeruginosa P40 isolate for twelve days, after that the mice were administrated with an antibiotic (Amoxicillin 30 µg/ml), alcoholic extract and combination of antibiotic and plant extract for twenty days, two times per day and then total white blood cells and differential leukocyte count of mice were calculated .The results clarified that the combination of alcoholic extract and antibiotic gave a positive result with in vivo of plant extract.

Evaluation of Some Cytokines with one acute phase protein in Burn Patients

Name: Dldar Omer Sdeeq
Degree: M.Sc.
Specialty: Clinical Immunology"
Date the debate: 4/12/2011
Supervisor: Assistant Professor. Ruqaya M. Al-Barzinji

Abstract

This prospective study was carried out on burn patients admitted to the burns unit at Emergency Hospital Management Center (EHMC) in Erbil city during the period July 2010 until May 2011. Blood samples were collected from 55 burn and 20 healthy controls (HC) consist of 15(75%) females and 5(25%) males. The ratio of female to male in burn patients was 3.58:1 in which 43 females and 12 males, their age ranged from 2 months to 50 years old. The burn patients were categorized according to %TBSA burnt, in which 1st group (G1) was 13 patients with mean TBSA 17.3% and mean age 12.53years, 2nd group (G2) was 19 patients with mean TBSA 38.12% and mean age 21.98 years, 3rd group (G3) was 11 patients with mean TBSA 62.6% and mean age 21.90 years and 4th group (G4) was 12 patients with mean TBSA 82.16% and mean age 23.35 years. The high incidence number of burn from total 55 burn insult was 24 located at age group (20-29) years old in which 18(41.75%) patients were female and 6(50%) patients were male.

The maximal mean of long hospital stay located in 1st group was 8.43±2.73 days while the minimal stay located in 4th group was 2.91±2.15 days. The mortality rate among females burn patients were higher 20(36.36%) than males 2 (3.63%). The most common cause of burn in both female and male was flame, 42(76.36%) followed by scalded burn 10 (18.18%). Serum from both burn patients and control groups were subjected to in-vitro assessment of some inflammatory and anti-inflammatory biomarkers namely TNFα, IL-6, IL-10, and high sensitivity C-reactive protein (hsCRP). Concerning the hsCRP test of 55 burn patients there were 52 shows high and other 3 patients were CRP normal with statistically highly significant differences ($P<0.01$). The serum concentration of L-10, IL-6 and CRP shows highly significant differences IV ($P<0.01$), while TNFα was significantly differences ($P<0.05$) when compared burn patients with healthy control. In respect to %TBSA there were highly significant differences ($P<0.01$) in mean serum concentration of all studied biomarkers when independently compared various burn group with HC except TNFα show inverse result ($P>0.05$). Similar above result was obtained when compared mean serum concentration of above biomarkers in deceased burn patients with survivors, and when compared non-survivor with HC. Mean serum concentration of IL-6 and CRP showed highly significant differences ($P<0.01$), while significant differences ($P<0.05$) observed of IL10 and TNFα when compared survivor patients with HC. No significant elevation observed of studied biomarkers among 15 burn patients at admission and after a mean of 11 days post burn. Concerning the correlation between studied biomarkers positive highly significant ($P<0.01$) correlation observed between IL-10 and TNFα, while CRP shows significant ($P<0.05$) positive correlation with each of IL-10 and IL-6. But no significant ($P>0.05$) correlation was found when IL-10 compared with IL-6 and TNFα with CRP. Negative correlation result was found when compared IL-6 with TNFα.

Child injuries in Erbil City: A Multi-Centre Study

Name: Chimmen Taha Yassin
Degree: M. Sc.
Specialty: Community Medicine
Date the debate: 11/10/2011
Supervisor: Professor .Tariq Al- Hadithi

Abstract

Child injuries are a growing global public health problem that falls disproportionately on developing countries where public health systems are least prepared to address this problem. Therefore, there is a need to find out the extent of the problem and the nature and pattern of child injuries and the ways in which the risk to the public health occurs in Erbil city.

To fulfill these objectives, a cross- sectional study was carried out from 1st Oct. 2009 through 30th Jun. 2011 and a sample of 1200 injured children was enrolled from four emergency hospitals in Erbil city. Children aged 0-17 years or care takers were interviewed using a questionnaire designed by the researcher.

Out of the total sample, 62.2% were males; 44.2% aged 1-4 years, and 3.6% below 1 year, 67.7% were of low socio-economic status, 73% arrived to hospital within one hour from time of injury. Injuries were unintentional in 94.7%, 4.5% due to interpersonal violence/assault and other violence, and 0.8% self-inflicted. Of all the injuries observed 45.4% involved falls, 13.3% piercing/penetrating force, 11.8% burns, 9.5% transport-related injuries, 9.2% contact with object or person/crushing, and 7.1% poisoning. Falls occurred most often from stairs, transport-related injuries most often involved pedestrians, the majority of burns were scalds; and poisonings typically involved kerosene. Open wounds constituted 29.5%. Head was most commonly affected (28.8%) followed by extremities. Slightly more than half of children (51.7%) had no apparent or minor/superficial injuries; 38% were moderately severe; 10% severe, and 0.3% fatal. Majority of injured children (70%) were treated and sent home, Unintentional injuries significantly decreased with increasing age while those of self-inflicted injuries significantly increased with increasing age. Males constituted significantly higher percentage in all child activities (except during travelling), and in all types of injury. Head injury was significantly higher in young children. Severity of injuries and hospitalization rates were significantly decreasing with increasing age.

Injury prevention efforts should consider the leading causes of child injury in the region with particular focus on young age, male children of low socio-economic status. Better use of the existing injury surveillance data is recommended to track injuries and their risk factors, to develop and implement specific evidence based interventions.

Prevalence and Types of Anaemia among Adult Diabetic Patients in Erbil city

Name: Abdulqadir Hameed Abdulqadir
Degree: M. Sc.
Specialty: Haematology
Date the debate: 21/2/2011
Supervisor: Ranan Kardagh Polus

Abstract

Anaemia is often unrecognized complication of diabetes mellitus that has adverse effect on the progression of diabetes related complications. Contributors to its development include erythropoietin insufficiency and iron deficiency.

Over a period of 6 month from November 2010 to May 2011, 250 diabetic patients, attending Layla Qasim diabetic center were studied, their age ranged between 18-73 years. Venous blood samples were collected from each of them. A complete blood picture, S. iron study, HbA1c% and fasting blood glucose were performed.

According to the duration of diabetes, patients were divided into three groups: group I patients (duration of diabetes < 5 years), group II (duration of diabetes between 5-9 years) and group III (duration of diabetes >10 years).

One hundred ten patients (44%) found to have laboratory evidence of anaemia. The frequency of anaemia were more among group III (46.6%). Higher prevalence of anaemia were found among female patients (53.9%) than male patient (24.1%). Among anaemic patients, 72 patients (65%) empirically considered as anaemia of chronic disease (ACD), 26 patients (24%) were iron deficiency anaemia (IDA), 11 patients (10%) were thalassimia trait and one patient (1%) had autoimmune hemolytic anaemia. ACD was more frequent among group II (32.9%) and group III (32.8%), while IDA was more frequent among group I (12.6%). both ACD and IDA were more frequent among female patient than male patients (34.7% and 13.8% respectively). There was no significant correlation between HbA1c and Hb, S iron parameters and S.ferritin.

It was concluded that anaemia is common among diabetes and remain unrecognized by both physicians and patients, it is more common among female diabetic than male and the common type of anaemia among diabetic patients is ACD followed by IDA, so that regular investigation is recommended.

Histological and Immunohistochemical Changes in Placenta of Diabetic Pregnants

Name: Ansam Jasim Mohammed
Degree: M. Sc.
Specialty: Anatomy
Date the debate: 17/11/2011
Supervisor: Assistant Professor. Fareed H. Abdul Ahad

Abstract

The present work designed to evaluate histological and immunohisto-chemical changes in placenta including chorionic vessels through sections taken from fetal surface of eighty full term placenta (forty samples as diabetic group and forty as control group) by using Haematoxylin and Eosin for evaluation the parameters of chorionic vessels ,Periodic Acid Schiff stain for thickness of basement membrane of chorionic vessels and Human Chorionic Gonadotrophin Antibody to see the expression of this hormone in both groups.

During macroscopic examination, there was significant increase in the placental weight among diabetic group and there were no changes in insertion of umbilical cord and in maternal surface of placenta in both groups but in fetal surface, there were some frequent alterations appeared in diabetic group like subchorionic fibrin deposition and fetal vessels thrombosis. The Pathophysiological examinations showed increase in syncytial knots, villous immaturity, hypervascularity, fetal vessels thrombosis and fibrinoid necrosis in diabetic group in comparison to control group.

The result of immunohistochesmistery showed significant increase of Human Chorionic Gonadotrophin hormone in diabetic group .Histological sections of chorionic veins and arteries showed significant decrease in luminal diameter, increase total wall thickness and thickness of both tunica media and adventitia with significant increase in thickness of basement membrane of chorionic vessels in diabetic group.

Smoking Effect on Iron Status, Erythropoietin Level and certain Hematological Parameters

Name: Sura Suaad Fatih Talabani
Degree: M. Sc.
Specialty: Hematology
Date the debate: 19/12/2011
Supervisor: Assist. Professor. Mohamad Salih Jaff

Abstract

Tobacco smoking is a growing public health problem in the developing countries. In this study the effect of cigarette smoking on certain hematological parameters, Iron stores and erythropoietin level was conducted on people in Erbil city.

Since few studies on iron stores in smokers and very few but only qualitative studies on serum erythropoietin (Epo.) has been done, the aim was to study the effect of smoking on some hematological parameters, iron status, and serum Epo. levels among apparently healthy adult smokers.

Over a period of 6 months, a cross sectional study was conducted on two hundred Sixty Seven smokers in Hawler compared to 71 non smokers. Their ages ranged between (20-54) years. A special questionnaire was used. Data on age and sex, number of cigarette smoked per day, and age of starting smoking were obtained. Venous blood samples were collected .A complete blood picture, serum iron parameters, serum ferritin and serum erythropoietin level were performed for each.

Results showed that, the mean values for RBC count, Hb level, Hct. value, MCV, MCH, MCHC, serum iron and serum ferritin levels were significantly higher in smokers while TIBC was significantly lower in smokers, RBC, Hb, Hct, MCV, MCH and MCHC, were significantly increased with increasing the number of cigarettes smoked per day, 7.1% of smokers had high iron saturation, 47.6% of smokers had high serum ferritin level, and 62.2% of them had high serum erythropoietin level.

In conclusion, tobacco smoking positively affects Hemoglobin levels, iron stores, and serum erythropoietin, and these level changes are related to the number of tobacco cigarettes smoked per day.

The roles of BCL2 and P53 Immnonoexperssion in Colorectal Carcinoma

Name: Tenya Tariq Abdulhameed
Degree: M. Sc.
Specialty: Pathology
Date the debate: 28/12/2011
Supervisor: Ass. Professor.Salah Abubakir Ali

Abstract

Colorectal cancer is the main cause of morbidity & mortality throughout the world. It has provided a paradigm for the study of molecular pathology in solid tumors.

The products of BCL2 and P53 genes are involved in the regulation of proliferation and apoptosis and have been associated with prognosis in several malignancies, including colorectal carcinoma. Therefore, we used immunohistochemistry to evaluate the significance of Bcl-2 expression, P53 nuclear accumulation and their concomitant expression in 68 formalin-fixed, paraffin- embedded blocks of colorectal carcinoma cases collected during the period from August 2010 –June 2011.

Using Dako Cytomation.LSAB + System-HRP, 29.41% of the colorectal tumors were classified as expressing Bcl-2, that was associated with earlier stage tumors (/p/ value =0.021), while nuclear accumulation of P53 was detected in 72.06% of colorectal carcinomas and was associated with later stage tumors (/p/ value =0.006) & male gender (/p/ value =0.005).

We also observed that there was a trend toward an inverse correlation between Bcl-2 and P53 expression (/p/ value=0.0013).

Tumors that did not express detectable levels of Bcl-2 but exhibited nuclear accumulation of P53 were most common & that this immunophenotype was also associated with later stage tumors (/p/ value=0.003).

Thus, we conclude that concomitant assessment of both Bcl-2 and P53 status may be valuable in predicting the aggressiveness of tumors in patients with colorectal carcinomas.

Prevalence of Thrombocytopaenia and Low von Willebrand Factor Antigen Level in Females with Menorrhagia in Maternity Teaching Hospital in Erbil City

Name: Rowaida Qardagh Oraha
Degree: M. Sc.
Specialty: Haematology
Date the debate: 20/12/2011
Supervisor: Assistant professor. Abdulkader A. Alnakshabandi

Abstract

Identity of Micro This study aims at determining the frequency of low von Willebrand factor antigen level and thrombocytopaenia as possible causes of menorrhagia among a group of women in Maternity Teaching Hospital in Erbil City, North of Iraq, Kurdistan region.

Over a period of six months 400 female patients with menorrhagia with 50 control groups, aged between 13-48 years attended the outpatient clinic of the Maternity Teaching Hospital were studied. After complete examinations, a complete blood picture, activated partial thromboplastin time and bleeding time were performed for all. Von Willebrand factor antigen level was performed for those with prolonged activated partial thromboplastin time, bleeding time, and low platelet count.

Our results showed that majority of patients (94.5%) had gynaecological causes for their bleeding, and 5.5% had haematological causes of whom 2% had low von Willebrand factor antigen level and 3.5% had thrombocytopaenia.

In conclusion, the vast majority of women with menorrhagia have had gynaecological problems rather than haematological causes for their bleedings. Most of those with low von Willebrand antigen level had previous history of bleeding. organisms in Acne Patients.

Evaluation of some biochemical & hematological parameters after blood letting cupping (blc) in Erbil – Iraq

Name: Farhad Jabbar Mohammed
Degree: Master
Specialty: Clinical Biochemistry
Date of the debate: 8/8/2012
Supervisor: Ass. Prof. Sardar Nouri Ahmed

Abstract

Cupping (Hijamat or kalashakh) is an ancient treatment in which evacuated cups are applied to intact or scarified skin in order to draw blood toward or through the skin surface .It was used for disorders associated with an excess of blood, one of the four humors of medieval physiology.

A partial vacuum is created in the cup placed on the skin by either applying a heated cup to the skin allowing it to cool (fire cupping), or by applying a suction device (suction cupping). The name (cupping) is referred to using the cup as a tool for therapeutic purposes.

This study was carried out in Erbil city; the period of cupping was during March and April 2010 according to traditional timing system in Erbil in the early morning between (5-10 a.m.). Sample size (no. of volunteer) were (100), from them (29) volunteer exclude for pilot study, and remain (71) volunteer included randomly for actual test, all volunteers were overnight fasting, all were male. Their ages range were between 19-62 with (Mean± S.E.M) was(32±1.11)Their BMI range were between 18.3 – 42 with(Mean± S.E.M)was (26.17±0.57).

The major results of cupping showed that:

There is significant decrease of serum cortisol level about 11% after doing the cupping directly, while a significant increase of serum cortisol level about 17% after ten days of cupping .There is significant decrease of each of the following biochemical parameters, serum Urea level about 3%, serum Uric acid level about 2%, serum Total bilirubin level about 6%, serum UIBC level about 6%, serum TG level about 6.6% after doing the cupping directly. While each of the serum Calcium, Albumin, and Protein levels are increased significantly by the ratio about 3%,2.5%, and 3%,respectively, after doing the cupping directly. About hematological parameters; each of the following parameters are significantly decrease, WBC count. Total Lymphocyte level, total Eosinophil, RBC count, and Hematocrit by the ratio 4%, 8%, 24%, 2.9%,and 3% respectively, after doing the cupping directly, while only Platelet level as a hematological parameter was significantly increase about 10% after doing the cupping directly.

The significant change in some biochemical and hematological factors after doing the (BLC) confirm that this ancient therapy has a scientific base.

Study of the mechanisms of action of cupping makes the traditional medicine more convincing and therefore it can be used more easily for treatment. It can then be presented to the society with a more convincing scientific base.

Biological Interaction, and the Effect of Myrtus Communis on Acne

Name: Niyan Innam Muhammed Yousif
Degree: M. Sc.
Specialty: Medical Microbiology
Date the debate: 19/1/2012
Supervisor: Professor. Rassool A. Dabbagh

Abstract

A prospective study was carried out on acne patients admitted to the dermatology department at Rizgaryi hospital in Erbil city during the period from September 2010 until May 2011. Swabs were collected from 160 patients with acne, (86) female and (74) male the ratio of female to male was 1:1.16. The age of patients range from (<12 – 35) years. The mean age of patients was (21.13). The highest incidence of acne was at age group (15-17) years of both genders. Among common factor which help to aggravate acne, genetics (52%) which was most prevalent in female than in male, and stress among females (14.4%) was higher than males (12%). According to the type of growth culture 150 (93.75%) produced positive culture. Whereas 10 (6.25%) produced negative cultures. The total number of isolates obtained from patient with acne was two hundred and six isolates. These isolates were distributed between gram-positive, and gram-negative representing 174 (90.62%), 18(9.37%) respectively. Fungi isolates were 14 (6.79%).Single isolates found in 97 cases (64.7%), followed by double (mixed) 50 (33.3%).While triple represent 3 (2%) isolates. The most frequent etiological agents isolated (aerobically and an aerobically) bacteria from acne patients was Staphylococcus epidermidis in (pure and mixed cultures) followed by Micrococcus spp. And Staphylococcus aureus. The most common anaerobic pathogen bacteria species were Propionibacterium acnes. 25 (13.02%) while among fungi Candida albicans was the most common fungi representing 9 (64.29%) isolate. Statistical analysis showed that there are significant differences between rates of infection caused by aerobic and anaerobic bacteria, with several parameters such as types of culture, socioeconomic level. On the other hand, no significant difference between rates of infection and gender was detected.

The results of susceptibility of isolated bacteria to antibiotics revealed variability in their response to antibiotics. The highest resistance among grampositive bacteria was to Tetracycline; While the highest resistances among gram negative bacteria was to Penicillin . Vancomycin was the most effective antibiotic against Gram-positive bacteria and Metronedazol was the most effective antibiotic against anaerobic bacteria. Staphylococcus epidermidis and Staphylococcus aureus showed strong exeret to inhibit growth of yeast cells (Candida and Cryptococcus) or prevent their colonization on the skin. M. communis extract had inhibiting effect on Gram-positive bacteria more than Gram-negative bacteria with a significant differences. The ethanol extract of myrtus communis seems to have most powerful inhibiting effect on acne bacterial isolates than water extract. It was also found that the prohibiting effect of M. communis extract increases when increasing their concentration.

Effects of Omega-3 on Lipid Profile and Haematological Parameters in Hyperlipidemic Rats

Name: Hozan Jarjees Ahmed
Degree: M. Sc.
Specialty: pharmacology
Date the debate: 8/3/2012
Supervisor: Assistant Professor. Kawa F. Dizaye

Abstract

Background: There is good evidence that omega-3 fatty acids found in fish oil can help to prevent and treat atherosclerosis by preventing the development of plaque and blood clots. Omega-3 can also help preventing heart disease, lower blood pressure, and reduce the level of triglycerides in the blood.The present study was designed to evaluate and compare the effects of different doses of omega-3, gemfibrozil and atorvastatin on lipid profile and haematological parameters in hyperlipidemic rats.

Methods: Forty eight rats were divided into two groups. The first groups included 18 rats, they were subdivided into three subgroups each of 6 rats. The first subgroup served as a control. The second and third subgroups received omega-3 (15 mg/kg) and (30 mg/kg) orally (PO) daily respectively. The second group included 30 rats and received atherogenic diet throughout the treatment period and served as hyperlipidemic rats. The hyperlipidemic model rats were subdivided into five subgroups of six rats each. The first subgroup served as a positive control. The second and third subgroups received omega-3 (15 mg/kg) and (30 mg/kg) PO daily respectively. The fourth and fifth subgroups received gemfibrozil (3.5 mg/kg) PO daily and atorvastatin (2 mg/kg) PO daily respectively. At the end of treatment period of all these groups, the rats were subjected to
various biochemical and hematological tests.

Results: After four weeks of therapy, (30mg/kg) of omega-3 showed a significant reduction in the level of triglyceride (TG), total cholesterol (TC) and low density lipoprotein (LDL-C) in control rats.Whereas (15mg/kg) omega-3 could only reduce the level of TC and LDL-C significantly. Four weeks of daily administration of both doses of omega- 3 produced significant reduction in serum (TC, TG and LDL-C) of hyperlipidemic rats. However neither (15mg/kg) of omega-3 nor omega-3 (30mg/kg) could increase the level of high density lipoprotein HDL-C in the treated and non treated hyperlipidemic rats. Both doses of omega-3 produced a significant increase in the level of HB, RBC and MCH in normal rats. The same doses of omega-3 showed a significant increase in the levels of hemoglobin (HB), red blood cell (RBC), hematocrit (HTC) and mean corpuscular hemoglobin (MCH) in hyperlipidemic rats after 4 weeks of therapy.
Following four weeks treatment with both gemfibrozile and atorvastatin there was a significant reduction in serum (TC, TG and LDL-C) and a significant raise in serum HDL-C in hyperlipidemic rats.

Conclusion: Omega-3 was effective in controlling lipid profile especially serum (TC, TG and LDL-C). No significant differences were found between the effects of both doses omega-3 and gemfibrozile or atorvastatin on TC, TG, and LDL-C of hyperlipidemic rats. In contrast to omega-3, gemfibrozile and atorvastatin induced a significant raise in the
level of HDL-C. Omega-3 was effective in increasing the levels of HB, RBC, HTC and MCH in hyperlipidemic rat.

The role of Nitric Oxide in Blood Pressure Changes Through out Normal Human Pregnancy and Preeclampsia

Name: Fedan Tahssin Muhammed Helmy
Degree: M. Sc.
Specialty: Medical Physiology
Date the debate: 13/3/2012
Supervisor: Professor. Salah Al-sin M. A. A;-Merani

Abstract

Pregnancy brings about marked cardiovascular changes to meet the metabolicneeds of the mother and fetus. Hypotension is common in normal human pregnancy, especially during the first trimester (TM). Some recent data indicate that the gaseous radical molecule nitric oxide (NO), that is a potent vasodilator,may contribute to the hypotension in normal pregnancy. However, themechanisms underling cardiovascular adaptations of normal pregnancy are not clearly understood. Therefore experiments were designed to investigate the changes in NO production during normal pregnancy and in pregnancies complicated by preeclampsia (PE) and transient hypertension. Parallel cardiovascular and renal responses were also assessed in these conditions. Serum nitrite and nitrate (NO metabolites) concentrations were measured in 117 women subjected to a reduced NO metabolites diet. In this way the levels of serum NO metabolites (NOx) mainly reflected endogenous production rather than dietary intake . A prospective study was conducted at Maternity Teaching Hospital and Azady, Kurdistan, Nazdar Bamarny, Malafandi and Tayrawa health centers in Erbil from October 2010 to April 2011. Thirty of the women were non pregnant normotensive healthy volunteers who served as a control group , and 62 of them were pregnant at various stages of normal pregnancy. The rest (25 women) were hypertensive in the third trimester, some of them with PE (n=13) and others had transient hypertension of pregnancy (n=12). Serum NOx concentrations were determined after reduction of nitrates to nitrites using the Griess reaction. Serum NOx concentrations were significantly lower in the first TM (33.12 ± 7.838 μmol/L) than in non-pregnant women (53.83 ± 4.322 μmol/L), ($P < 0.05$). Low NOx concentrations also persisted throughout second and third TMs of normal pregnancy though the reductions were not statistically significant. Mean NOx concentration in preeclamptic women was (37.56 ± 8.014 μmol/L), and in transient hypertensive women was (27.406 ± 5.206 μmol/L) which were insignificantly lower than those in the gestation age-matched normal pregnant women (40.49 ± 8.091 μmol/L). Blood pressure (BP) measurements showed a statistically significant reduction in systolic BP (SBP) in the first TM (99.21 ± 2.238 mmHg) when compared with the non pregnant women (107.40 ± 2.365 mmHg). The systolic BP increased to the non pregnant level in the third TM of normal pregnancy (108.04 ± 2.103 mmHg). Only small insignificant reductions in diastolic BP (DBP) occurred throughout the three TMs of normal pregnancy. Obviously, both systolic and diastolic BPs in the third TM were highly significantly greater in PE and transient hypertension (HTN) than third TM of normal pregnancy. Serum creatinine levels in normal pregnancy were very slightly lower than in non-pregnant women. Consequently, only slight insignificant increases in estimated glomerular filtration rate (eGFR) were observed. Higher urine flow rates were recorded throughout normal pregnancy , but was statistically significant only in second TM. The urinary excretion of sodium ($UNa^+ V$) was significantly lower in the first TM when compared with non-pregnant women (117.71 ± 16.87μEq/min vs 163.37 ± 17.16μEq/min). The serum creatinine was significantly higher in PE compared with the normal third TM accompanied by a significant decrease in eGFR and in $UNa^+ V$. In transient HTN, the only significant change observed was a lower $UNa^+ V$ than normal third TM. The haematological measurements revealed statistically significant elevations in WBC count and significant decreases in packed cell volume (PCV) throughout normal pregnancy when compared with non-pregnant women. These changes were accompanied by small but significant reductions in RBC count and hemoglobin (Hb) concentration during the second TM . Leucocytosis was also evident in PE. It is

concluded that endogenous NO production does not seem to contribute clearly to the hypotension in early normal human pregnancy. Also there is no significant role of NO in the hypertension that characterizes PE.

Effects of Sertraline on the Chronic Obstructive Airway Disease and Asthma

Name: Amin O. Nagmaldin
Degree: M. Sc.
Specialty: Medical Physiology
Date the debate: 26/2/2012
Supervisor: Dr. Marwan Abdulraheem Yass

Abstract

Dyspnea can have a debilitating effect on psychosocial and physical activity functioning in patients with asthma and chronic obstructive airways disease. Previous researches have suggested that treatment of concomitant mood or anxiety symptoms by selective serotonin reuptake inhibitors (SSRI) drugs can improve dyspnea and exercise intolerance among patients with respiratory disease.But still there is a need to assess and evaluate the effects of SSRI drugs (sertraline) on the respiratory system. Therefore, in this study, Thirty four patients were diagnosed and admitted as chronic obstructive airway disease and asthma to Rzgary General Teaching Hospital, Welfare private hospital and Rozhalat Emergency Hospital (from November 2010 to June 2011). They were of both sexes (25 males and 9 females). Their age ranged from 28-80 years (mean 53.3years). For assessment of changes in their respiratory symptoms ,especially dyspnea and exercise intolerance; National Institute of Health and Clinical Excellence (NICE), Medical Research Council (MRC) scores of shortness of breath, and the pulmonary function test measurements (Forced Vital Capacity (FVC),Forced Expiratory Volume in 1st second (FEV1),Forced Expiratory Volume in First Second ratio (FEV1%) before and after administration of Sertraline tablet once daily (12.5-100 mg/day); with starting dose of 12.5mg/day in the first week and the dose was increased weekly by 12.5mg/wk up to 8 week (in the 8 week the dose of administration was 100mg/day).
Results showed that the mean values of scores of severity of shortness of breath (NICE score of dyspnea) was significantly decreased after treatment
with sertraline in the both groups; COAD group (4.125 Vs 3.5 ,P- value=0.013) and in group of asthma (4.6111 Vs 2.6111, P-value=0) . Comparisons of mean values of pulmonary function tests in the group of COAD also show significant differences before and after administration of sertraline ; FEV1 (50 Vs 61,P-value= 0.009) and FEV1% (63.813 Vs 75.188, P-value=0.026). However, results of FVC (60.563 Vs 63.438, P-value=0.366) turned out to be statistically not significant. In the group of asthma the mean values of pulmonary function tests also show highly significant differences before and after administration of sertraline in values of FVC (53.222 Vs 67.667, Palue=0.001) and FEV1 (49.444 Vs 66.833, P value=0.004). However, results of FEV1% (71.222 Vs 79.278 P value=0.366) were statistically not significant. Data obtained indicating that there were a significant improvement in severity of shortness of breath (S.O.B) in patients with COPD and asthma after treatment with sertraline (12.5-100 mg/d) for 8 weeks also with significant change in measurements of pulmonary function test parameters.

Effects of Benfotiamine and Methylobaamin on Paclitaxel Induced Peripheral Neuropathy

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Degree: M. Sc.
Specialty: pharmacology
Date the debate: 15/1/2012
Supervisor: Assistant Professor. Kawa F. Dizaye

Abstract

Background
Reports indicate that paclitaxel causes a dose-limiting distal, symmetrical and sensorimotor peripheral neuropathy. This study was designed to evaluate the protective effects of benfotiamine and methylcobalamin on prevention of paclitaxel induced peripheral neuropathy.
Methods
Twenty four rats and Twenty four mice were involved in this study, each animal group was allocated in to two main experimental groups [control group (n=6) and paclitaxel model group (n=18)]. The paclitaxel model group in rats was subdivided in to 3 subgroups [paclitaxel group (6mg/kg i.p.) for 4 weeks, paclitaxel + benfotiamine (100mg/kg orally, daily for 8 weeks) and paclitaxel + methylcobalamin (500µg/kg i.p., twice weekly and for 8 weeks)]. Whereas the paclitaxel model group in mice was subdivided in to 3 sub groups [paclitaxel group (6mg/kg i.p. for 4 weeks), paclitaxel + benfotiamine (100mg/kg orally, daily for 5 weeks) and paclitaxel + methylcobalamin (500µg/kg orally, daily for 5 weeks)]. Electrophysiological and histological investigations, as well as a number of classical behavioural tests of nociception were performed.
Results

Paclitaxel administration produced significant increase in latency, but decrease in amplitude and conduction velocity in peripheral motor nerves in rats. Degenerative changes of sciatic nerve were observed in rats. The paw withdrawal latency for heat hyperalgesia and the tail withdrawal latency for cold (allodynia and hyperalgesia) in mice were significantly reduced. Benfotiamine administration significantly ameliorated all electrophysiological changes induced by paclitaxel in peripheral motor nerve. Moreover benfotiamine decreased histological changes in rat's sciatic nerve. In mice benfotiamine administration significantly ameliorated the reduced withdrawal latencies for cold and hot.

Methylcobalamin administration together with paclitaxel attenuates the reduction in conduction velocity in rats but had no effect on the reduced amplitude. Methylcobalamin reduced degenerative changes in Schwann cells but had no effect on reduced myelin thickness.

While in mice daily methylcobalamin administration significantly reduced the decreased withdrawal latencies for cold and hot.

Conclusion

Benfotiamine 100mg/kg was very efficient in prevention of sensorimotor neuropathy induced by paclitaxel. Whereas the suggested methylcobalamin (500μg/kg) twice weekly did not sufficiently prevent peripheral motor nerve destruction induced by paclitaxel. While the administration of high dose methylcobalamin every day is efficient in removal of thermal nociception induced during paclitaxel treatment.

A study on the prevalence of *Entamoeba histolytica* and *Giardia lamblia* among asymptomatic food handlers in Erbil city and comparison of different techniques for their detection

Name: Sharmeen Qadir Faqi Abdullah
Degree: M. Sc.
Specialty: Medical Microbiology
Date the debate: 7/3/2012
Supervisor: Dr. Zakarea Abdullah Yassen

Abstract

A prospective study was carried out during the period from beginning of October 2010 to the end of April 2011 to investigate the prevalence of the two potentially pathogenic intestinal protozoa, ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** in asymptomatic foodhandlers by using different techniques. A total of **855** stool samples were collected, of which **815** samples were examined by wet mount, lugol's iodine, giemsa stain and sugar floating techniques. The remainder **40** stool samples were examined by the mentioned techniques in addition to the GIARDIA-CHECK-1 technique which is a rapid qualitative immunochromatographic test for detection of ***Giardia lamblia***. Among the (815) samples the distribution of ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** and mixed infection according to the sex were as such: male (121, 17.7%; 58, 8.5%; 5, 0.7%) respectively, and female (16, 12.1%; 10, 7.6%;0, 0%) respectively. Statistical analysis shows that there was no significant deference between both sexes in regarding to distribution of both protozoa. R e garding to the distribution of both protozoa in different age groups, ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** and mixed infection were distributed in the age groups as such: (10-19 years): (8, 9.5%; 10, 11.9%; 0, 0%), (20-29 years): (57, 17.8%; 29, 9 %; 4, 1.3%), (30-39 years): (46, 18.4%; 17, 6.8%; 1, 0.4%), (40-49 years): (16, 16%; 8, 8 %; 0, 0%) and (>50 years): (10, 16.4%; 4, 6.6%; 0, 0%) respectively. Statistical analysis showed there is no significant difference between the age groups in relation to distribution of both protozoa. ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** and mixed infection were distributed in different months as such: (October): (21, 19.4 %; 9, 8.3 %; 0, 0 %), (November): (19, 15.2 %; 15, 12 %; 2, 1.6 %), (December): (5, 12.5 %; 3, 7.5 %; 0, 0 %), (January): (17, 16.2 %; 10, 9.5 %; 0, 0 %), (February): (20, 14.8 %; 12, 8.9 %; 2, 1.5 %), (March): (28, 18 %; 9, 5.8 %; 1, 0.6 %) and (April): (27, 18.4 %; 10, 6.8 %; 0, 0%) respectively. There was no significant difference between the months in regarding to distribution of both protozoa. Regarding to the distribution of ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** and mixed infection in different occupations were as such: (Restaurant workers): (22, 8.9 %; 28, 11.4%; 2, 0.8%), (Bakers): (47, 41 .9 %; 8, 7.1%; 0, 0%), (Store keepers): (32, 17.6%; 10, 5.5%; 0, 0%), (Butchers): (10, 13.5%; 4, 5.4%; 1, 1.4%), (Milk distributers): (4, 7.7%; 8, 15.4%; 0, 0%) , (Fruit /Vegetables sellers): (8, 27.6%; 2, 6.9%; 0, 0%) and (Chef): (14, 11.7%; 8, 6.7%; 2, 1.7%) respectively. Statistical analysis showed that this was a high significant difference between types of occupation in regarding to the distribution of both protozoa. By using different techniques (wet mount, lugol's iodine, giemsa stain, and sugar floating) for detection and identification of ***Entamoeba histolytica/dispar*** and ***Giardia lamblia*** and mixed infection in foodhandler were such as: (wet mount): (137, 16.8 %; 68, 8.3%; 5, 0.6 %), (lugol's iodine): (129, 15.8%; 65, 7.9 %; 4, 0.5%), (giemsa stain): (111, 13.6%; 62, 7.6%; 2, 0.24%) and (sugar floating): (118, 14.5%; 65, 7.9%; 3, 0.4%) respectively. Statistical analysis showed that there is no significant difference between the results obtained by different techniques. Analysis of the (40) stool samples by using different techniques (wet mount, lugol's iodine, giemsa stain, and sugar floating and antigen detection) the results were as such: (15, 37.5%; 15, 37.5%; 12, 30%; 13, 32.5%; 15, 37.5%) respectively. It was noted that the sensitivity and specificity of the GIARDIACHECK- 1test were in the range of (91. 66% to 93. 33%) and (85.71% to 96%)
respectively.

Assessment of Immunological Parameters in HCV and HBV Seropositive Type 2 Diabetic Patients

Name: Suhayla Hamad Shareef
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 1/4/2012
Supervisor: Assistant Professor. Nabeel E. Waheda

Abstract

Study was designed to assess some immunological and virological parameters in patients afflicted with type 2 diabetes mellitus (G1=T2DM), T2DM with hepatitis C virus (G2=T2DM+HCV) and T2DM with hepatitis B virus (G3=T2DM+HBV).
The study was carried out in the "Martyr Layla Qasm center for diabetes, public Health Laboratory, Internal Laboratory, Nanakaly Hospital for Blood Diseases, Dialysis unit and Rizgari Teaching Hospital" in Erbil city during the period from August 2010 to July 2011.
A total of 584 blood samples were collected from patients (G1=208, G2=124 and G3= 252) with age range between (25–84) year and from 70 healthy persons as control subjects with the same age range.
A highest number and percentage of patients were located in age range (45–54) year for female and (55–64) year for male. In G1 a highly significant predominance of T2DM was found in females than males ($p<0.01$). In contrast, a highly significant predominance was found in males than females regarding G2 and G3 ($p<0.01$).The number and percentage of patients having family history of diabetes was higher than the number and percentage of patients with no family history of disease ($p<0.01$), and the number and percentage of patients which have 1st degree relative of disease was higher than the number and percentage of patients having 2nd and 3rd degree relative in G1 , but inverse results were observed regarding G2 and G3 which showed a higher number and percentage of patients with no family history of disease as compared with number and percentage of patients having family history($p<0.01$) .
The result of this study showed that the number and percentage of unemployed patients were higher as compared with the number and percentage of

earner and official patients. According to socio-economic status, a higher number and percentage of patients was observed having high socio-economic status in comparison with the number and percentage of patients having middle and low socio-economic status. The results revealed that the number and percentage of patients with no smoking habit was higher as compared with the number and percentage of patients having current and former habit of smoking.

A highly significant increase in the number and percentage of patients having overweight and obesity (133, 43.18% and 124, 40.25%) respectively were observed in comparison with the number and percentage of patients with other levels of BMI category ($p<0.01$), the mean concentration of serum glucose levels among those patients were elevated as compared with its mean concentration in patients with other levels of BMI category ($p<0.01$).

There were a highly significant elevation in the mean concentration of immunoglobulin(IgM mg/dl) and Complement components(C3,C4 mg/dl) in sera of G1 patients in comparison with their mean concentrations in sera of control group ($p<0.01$). Whereas only a significant increase was observed in mean concentration of immunoglobulin (IgG mg/dl) when compared with its mean concentration in sera of control group ($p<0.05$).

The mean concentration of C-peptide in sera of G1 patients was higher (2.46 ng/ml) in comparison with its mean concentration in sera of control group (1.6 ng/ml) ($p<0.05$), but a significant decrease was noted in mean concentrations of sera C-peptide levels with increase in duration of disease ($p<0.05$).

The majority of G1patients had a poor control of haemoglobulin A1c (HbA1c >8.0 %), a positive correlation was observed between mean % of HbA1c

and duration of DM ($p<0.05$), and also a positive association was observed between mean % of HbA1c and mean concentration of C-peptide ($p<0.01$).

A highly significant increase in mean concentration of IL-6(352.80, 352.57, 251.67 pg/ml) were found in sera of patients with G1, G2 and G3 respectively, when compared with its mean concentration (188.80 pg/ml) in sera of control group ($p<0.01$), also a significant increase was observed in mean concentration of IL-6 in sera of G2 patients when compared with its mean concentration in sera of G3 patients ($p<0.05$).

Regarding the mean concentration of IL-10, the study showed no statistically significant differences in mean concentration of IL-10 in sera of G1 and G2 patients (100.48, 79.39 pg/ml) respectively, when compared with its mean concentration in sera of control group (59.90 pg/ml) ($p>0.05$), also between mean concentration of IL-10 in sera of G1 and G2 ($p>0.05$).

This study revealed a strong association between infection with Hepatitis C virus and development of T2DM and also between infection with Hepatitis B virus and T2DM which showed a high prevalence percentage of T2D (37.9% and 21%) among HCV and HBV patients respectively in Erbil city.

A highly significant increase was observed in mean concentration of Anti-HCV antibody in sera of G2 patients (0.667 IU/ml) when compared with its mean concentration in sera of control group (0.015 IU/ml) ($p<0.01$), also the mean concentration of HBs Ag showed a highly significant increase in sera of G3 patients (1.166 IU/ml) in comparison with its mean concentration in sera of control group (0.002 IU/ml) ($p<0.01$).

Assessment of Epidemiological, Hormonal and Immunological Parameters among patients with Hydatidiform Mole

Name: Dana Abdulkhaleq Khorsheed
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 23/5/2012
Supervisor: Assistant Professor. Nabeel Elia Waheda

Abstract

Forty patients with HM attended Hawler Maternity Teaching Hospital were enrolled in this study from the period of (1st of October 2010 to 3rd of September 2011), in addition, to 10 healthy pregnant women in 1st trimester served as a control group. In this study, many epidemiological, hormonal and immunological parameters evaluated.

This study showed obvious relation between risk factors and development of HM. Among these factors is age, it revealed that the most frequent age group for HM was between (25-34) year when compared with other age groups. In another comparison, the frequency of development HM among the housewives was [37 (92.5%)] and more than the official or educated women which was [3 (7.5%)]. The frequency of HM among patients with blood group B and O, [14 (35%) & 14 (35%) respectively] were higher than those with blood group A and AB.

The results showed that the number of patients with body mass index (BMI) of (18.50 - 24.99 kg/m²) were higher. The highest frequency (90%) of HM was among patients whom married at period "between" (1993 & 2010). The percentage of patients with HM having history of Abortion was higher (87.5%) than the percentage of patients without Abortion. There were no relation between HM and the patients having history of using oral contraceptive (40%). Mean concentration of β-HCG hormone in sera of patients showed a significant elevation before dilatation and curettage (D&C) than mean concentration of β-HCG in control group (healthy pregnant women in 1st Trimester). After (D&C) the mean concentration in sera of same patients during 10 days showed a significant decrease when compared with mean concentration of β-HCG in sera of patients before (D&C). However, no significant change recorded between mean concentration of β-HCG in patients sera after (D&C) and control group (P = 0.5). The mean concentration of Inhibin-A hormone in the sera of patients before (D&C) showed a significant elevation when compared with mean concentration in sera of control group. After (D&C) the mean concentration of Inhibin-A in sera of same patients during 10 days showed sharply decrease to normal value as in non pregnant women (P =0.0001), when compared with mean concentration of Inhibin-A in patients sera before (D&C) and control group. The mean concentration of Estradiol hormone (E2) in the sera of patients before (D&C) showed a significant elevation. After (D&C) the mean concentration of (E2) in same patients through 10 days showed a significant decrease (P <0.0001) than mean concentration of (E2) in the sera of patients before (D&C), but mean concentration of (E2) after (D&C) still high than normal value in non-pregnant women. No significant change (P=0.41) recorded in mean concentration of Carcino Embryonic Antigen (CEA) before and after (D&C), but there were significant change between mean concentration of CEA in patients after (D&C) and control group (P = 0.003). The mean concentration of IL-1β in the sera of patients before (D&C) showed a significant elevation. After (D&C) the mean concentration of IL-1β in sera of same patients during 10 days showed significant decrease (P =0.002), when compared with mean concentration of IL-1β in patients sera before (D&C).

The mean concentration of IL-2 in the sera of patients before (D&C) showed a significant decrease. After (D&C) the mean concentration of IL-2 in sera of same patients during 10 days showed significant elevation (P =0.001), when compared with mean concentration of IL-2 in patients sera before (D&C). The mean concentration of IL-1β and IL-2 showed significant opposite change in before, after (D&C) and control group.

Molecular Study on Staphylococcus aureus Causing Burn Wound Infections

Name: Lanja Jalal Mahmood
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 21/8/2013
Supervisor: Dr. Kamal I. Bakr Al-Otraqchi

Abstract

The present study was carried out on burn patients admitted to the burns unit at West Emergency Hospital in Erbil city during the period from March 2012 tillJuly 2012. Skin swab samples were collected from 150 burn patients (56 males and 94 females), their age ranged from 3months to 80 years old.

Depending on the Vitek-2 system the bacterial species were identified, and the results showed that the isolated bacteria belonged to different species, 67(44.66%) isolates were staphylococci among them 42(28%) isolates were indicated as *Staphylococcus aureus* and 25(16.66%) isolates indicated as other staphylococci species, 17(11.33%) of the samples were culture negative, 29(19.33%) of the isolates were Gram negative bacteria and 37(24.66%) of the isolates were Gram positive bacteria other than staphylococci. By using disc diffusion method among the 42 *Staphylococcus aureus* isolates 32(76.2%) isolates were detected as methicillin resistant *Staphylococcus aureus* (MRSA) and 10(23.81%) isolates were methicillin sensitive *Staphylococcus aureus* (MSSA).

Allstaphylococci isolates were tested for their ability for production of β-lactamase enzyme, and the results revealed that all *S. aureus*isolates produce β-lactamase enzyme.

All *Staphylococcus aureus*isolates were screened for their resistance to eleven antibiotics: Chloramphenicol, Ampicillin, Penicillin, Gentamycin, Vancomycin, Ceftriaxone, Ciprofloxacin, Erythromycin, Sulfmethaxazole/Trimethoprime,Cephalothin, Amoxicillin/Clavulanic acidand heavy metals $AgNO_3$, $ZnSO_4$ and $HgCl_2$. The results showed variations in the resistance patterns of different *Staphylococcus aureus*isolates to the used antibiotics and heavy metals.

The most effective antibiotic was Vancomycin(97.6%) were sensitive followed by Ciprofloxacin and Sulfmethaxazole/Trimethoprime(66.6%) sensitive while the least effective antibiotics were Penicillin and Ampicillin (0.0%) sensitive for each.

All *Staphylococcus aureus* isolates were tested for methicillin resistance by both disc diffusion method (phenotypically) throughusing Methicillin, Oxacillin,Cefoxitin and by detection of *mecA*gene (genotypically) through amplification of this gene by polymerase chain reaction technique, polymerase chain reaction (PCR) was used to amplify *mecA* gene with the amplicon size of 530bp, in which only 24(57.14%) of *Staphylococcus aureus* isolates represent *mecA* gene positive. The results showed that the detection of *mecA* gene by Polymerase chain reaction have higher sensitivity and specificity than disc method for identification of methicillin resistant *Staphylococcus aureus.*

Some characteristic features of plasmid DNA content of *Staphylococcus aureus* isolates were studied, from them, the location of the antibiotics, heavy metals resistance genes and mannitol fermentation gene were determined in the chosen bacterial isolates by the genetic transformation of the laboratory strain *Escherichia coli* DH5α with plasmid DNA purified from these isolates. Seven highly resistant isolates were chosen (S37, S55, S70, S72, S83, S120 and S 129). The transformation process conducted successfully, and the results showed that all genes responsible for conferring resistance to used antibiotics (Chloramphenicol, Amoxicillin/Clavulanic acid, Ceftriaxone, Gentamycin, Sulfmethaxazole/Trimethoprime, Erythromycin and Ampicillin) and heavy metals resistance genes are located on plasmid DNA, while those for mannitol utilization located on chromosomal DNA of these isolates.

The plasmid profile of studied *S. aureus* isolates using gel electrophoresis revealed that the plasmid content showed variation in their size, and more than one plasmid DNA bands appeared in many isolates with different molecular weights ranged from (1.25-

> 10)kbp. The reported results indicate the dissemination of plasmids among *S. aureus* isolates which may carry resistant genes against wide spectrum of clinically used antibiotics.

Moreover, amplification of plasmid DNA content (copy number) performed using 175µg/ml chloramphenicol in the log phase of the tested bacterial isolates. Real amplification observed in isolates S60, S129 and S137.

Also the coexistence between the resistance to antibiotics and heavy metals was studied and the results indicated that the genes which confer resistance to both antibiotic and heavy metals are located on plasmid DNA and there was a remarkable relationship between resistance to antibiotics understudy and resistance to heavy metals used in the studied bacterial isolates.

On the other hand, the presence of thermosensitive plasmids among the bacterial isolates investigated and the results revealed that no such plasmids exist in our bacterial isolates.

Microbiological Study of Multi- Drug Resistant Pathogens Isolated From Women with Genital Tract Infection in Erbil

Name: Shilan Sulaiman Ahmad
Degree: Master
Specialty: Microbiology
Date of the debate: 25/6/2013
Supervisor: Dr. Fattma Abodi Ali

Abstract

Vaginitis is an infectious inflammation of the vaginal mucosa, poses one of the most common problems in gynaecology and is one of the main reasons leading the females to seek advice from a physician.

This study was carried out during the period (March to July 2012). A total of two hundred and fifty high vaginal swabs were collected from (100 pregnant and 150 non-pregnant) women patients with genital tract infection at the age ranged between (18- 55) years, who attended the gynecology clinics and obstetrics department of Maternity Teaching Hospital in Erbil city.

Vaginal swab samples were collected and direct examined for pH measurement, microscopic Gram stain examination and culture techniques. Isolated microorganisms were identified using microscopical, morphological, biochemical tests, analytic profile index system and Vitek 2 compact system.

The results showed that positive vaginal cultures were detected in 233 (93.2%) women patients, among pregnant were 95 (95%), while among non- pregnant were 138 (92%) but differences is not significant according to statistical analysis.

The total number of microorganism isolates obtained from women patients were (263) isolates. These isolates were distributed between Gram- positive bacteria 118 (44.9%), Gram- negative bacteria 73 (27.7%) and fungi 72 (27.4%). Single isolates found in 203 (77.2%) and mixed 60 (22.8%).

The most frequent microorganisms isolated from vaginitis patients were *Candida albicans* 62 (23.6%), among Gram- negative and Gram- positive bacteria were *Escherichia coli* 42 (15.96%), *Staphylococcus haemolyticus* 19 (7.2%), *Staphylococcus auricularis* 19 (7.2%), *Enterococcus faecalis* 19 (7.2%), *Klebsiella pneumoniae* 14 (5.3%) and *Staphylococcus aureus* 13 (4.9%).

The highest percent of vaginitis occurred at pH 6 were 140 (60.1%), the highest percent of vaginitis occurred in the age group (26-35) years were 113 (48.5%) and the most common symptoms were abnormal vaginal discharge 132 (56.7%), among pregnant and non- pregnant women.

The susceptibility of isolated bacteria to different antibiotics was examined by Vitek 2 compact. Most of the Gram- positive bacterial isolates showed high resistance to Penicillin 76 (64.4%), Ampicillin 75 (63.6%) and Clindamycin 73 (61.9%), and the most effective antibiotics and less resistance were Nitrofurantoin 9 (7.6%), Amikacin 18 (15.3%) and Imipenem 19 (16.1%). While among Gram- negative bacteria most of isolates revealed high resistance to Ampicillin 65 (89%), Amoxicillin/ clavunic acid 41 (56.2%), Clindamycin 39 (53.4%) and Aztreonam 39 (53.4%), and the most effective antibiotics and less resistance were Imipenem 5 (6.8%) and Amikacin 9 (12.3%).

All Gram- positive and Gram- negative bacterial isolates (191) were screened for biofilm production as one of the virulence factors by using two different methods (tube method and tissue culture plate method) and the results showed that the tissue culture plate method was the most sensitive method for detection of biofilm production. The results by tube method were 94 (49.2%) as non or weak and 97 (50.8%) as strong and moderate biofilm producers, while by tissue culture plate method using ELISA (Enzyme- linked immuno sorbent assay) system were 68 (35.6%) as non or weak and 123 (64.4%) as strong and moderate biofilm producers. The highest percentage of bacterial biofilm producers were resistance to (5) antibiotics.

All (118) Gram positive bacterial isolates were screened for their ability to produce β- lactamase enzyme by using Nitrocefin test. Out of 86 (72.9%) were found to be β-

lactamase positive, which distributed among pregnant 37 (80.4%) and non- pregnant 49 (68.1%) but statistical analysis not significant.

All Gram negative bacterial (73) isolates were screened for their ability to produce extended spectrum β- lactamases enzymes by using double disk diffusion method. Out of 45 (61.6%) were found to be extended spectrum β- lactamases producers, which distributed among pregnant 9 (45%) and non- pregnant 36 (67.9%) but statistical analysis not significant.

All Gram negative bacteria were screened for their ability to produce Ampicillin resistant gene (AmpC) β- lactamase enzyme by using Disk antagonism test. Out of (73) Gram negative bacteria isolates, 5 (6.8%) were found to be AmpC β- lactamase producers.

All Gram negative bacteria were screened for their ability to produce metallo β- lactamase enzyme by using Imipenem- EDTA (Ethylene diamine tetra acetic acid) combined disc test. Out of (73) Gram negative bacteria isolates, 25 (34.2%) were found to be metallo β- lactamase producers, which distributed among pregnant 5 (25%) and non- pregnant 20 (37.7%).

Among all Gram negative bacterial isolates were screened for their ability to produce (Extended spectrum β- lactamases, AmpC and metallo β- lactamase) enzymes and the results revealed that most of isolates produce more than one type of β- lactamase enzymes, for example all *Escherichia coli* isolates 30 (71.4%) were extended spectrum β- lactamases producers and 19 (45.2%) were metallo β- lactamase producers.

Bacteriologic study of discharging ear and evaluation of certain antibacterial agents against biofilm forming bacteria

Name: Nuha Najeeb Anton
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 8/9/2013
Supervisor: Dr**.** IsamYousif Mansoor

Abstract

The present study was carried out on 100 patients suffering from otitis media, who were referred to ENT department at Rizgary Teaching Hospital-Erbil, during the period extended from April 2012-July 2012.

The majority of otitis media cases (60%) were clinically diagnosed as chronic otitis media (COM) and the remaining (40%) as acute otitis media (AOM).

Out of 100 patients 53(53%) were males and 47(47%) were females, the patients age ranged between 4 months to 82 years, for acute otitis media patients the mean age was (15.9) years and the peak age group incidence was (≤ 10) years. While the mean age of chronic otitis media patients was (27) years and the peak age group incidence was (21-30) years.

People living in urban area had a higher rate of infection 80(80%) than those living in rural area 20(20%). The bacterial culture of 100 samples yielded pure growth in (72%) of cases and no growth in 28(28%) of cases. No anaerobic bacteria or mixed culture infection was detected. Sixty one percent of infections were caused by Gram negative bacteria and 39% by Gram positive bacteria. *Pseudomonas aeruginosa* and *Staphylococcus aureus* were the most common bacteria isolated in both acute and chronic otitis media accounting for (30.5%) and (27.7%) respectively. Other bacteria isolates in descending order were *Enterobacter* spp. (12.4%), coagulase negative *Staphylococci* (11.1%), *Klebsiella pneumoniae* (6.8%), *Proteus mirabilis* (5.5%), *Escherichia coli* (2.7%) and *Citrobacter freundii* (2.7%).

However *Proteus mirabilis*, *Escherichia coli* and *Citrobacter freundii* were not isolated in acute otitis media patients.

In vitro susceptibility tests showed that Amikacin was the most effective antibiotic followed by Ciprofloxacin. However, bacteria showed high rate resistance to other antibiotics used in the study.

All of the bacteria isolated showed biofilm formation in different degrees (weak, moderate and strong). *Pseudomonas aeruginosa* was the strongest biofilm forming bacteria compared to other isolated bacteria. Growing bacteria in sub-minimal inhibitory concentrations (sub-MIC) of the six different antibiotics (ceftazidime, amoxiclav, ceftriaxone, cefotaxime, amoxicillin and ciprofloxacin) showed a significant reduction in the biofilm formation.

Correlation between Serum Endothelin-1 and Oxidative Stress in Apparently Healthy Obese Men

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Date of the debate: 10/4/2013
Supervisor: Dr. Sherwan Rahman Sulaiman

Abstract

Obesity is a multi-systemic disorder that carries the risk for many disease conditions. It is becoming a global epidemic. Endothelial dysfunction and oxidative stress are two different issues linked to obesity. Endothelin-1 (ET-1), a potent vasoconstrictor and pro-atherogenic peptide, is a useful marker of endothelial dysfunction. Oxidative stress, on the other hand, can be assessed by estimation of lipid peroxidation byproduct (Malondialdehyde-MDA). In this study, the relationship between these two issues in obesity was assessed.

Eighty apparently healthy non-smoker adult men have participated in this study. Their age ranged between 18 and 50 years. They were divided into three groups: normal weight (n=25), overweight (n=34) and obese (n=26) based on their BMI. Their serum ET-1 (ELISA), MDA and lipid parameters (biochemical assays) have been estimated.

The study showed that ET-1 is positively correlated with each of MDA and BMI of the participants and that correlation is statistically highly significant ($r=+0.322$, $P<0.005$; $r=+0.65$, $P<0.001$ respectively). MDA was also positively correlated with BMI which was also statistically highly significant ($r=+0.378$, $P<0.001$).

It is concluded that endothelial dysfunction and oxidative stress coexist in obesity. And each of ET-1 and MDA can be regarded as important markers of obesity.

Molecular Study of Uropathogenic *Escherichia coli* (UPEC) Isolated from Urinary Tract Infection among Children in Erbil City

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Specialty: Medical Microbiology
Date of the debate: 24/4/2013
Supervisor: Assistant Professor. Zirak F. A. Abdul-Rahman

Abstract

A total of two hundred and fourteen outpatient and inpatient children their ages ranged from 1day to 14 years, whether symptomatic or asymptomatic were studied for urinary tract infections (UTIs) during the period (February to May 2012) at Rapareen Teaching Hospital for Children in Erbil City. Urine samples were collected and examined using microscopic, dipstick test for detection of leukocyte esterase and culture techniques.

Isolated organisms were identified using microscopical, morphological and biochemical tests (including recent Vitek 2 system) and the results showed that positive urine cultures were detected in 134 (62.6 %) children, among females were 98 (73 %), while among males were 36 (27 %).

Microorganisms that had been isolated from urine culture were mainly *Escherichia coli* 70 (52.2 %) followed by *Staphylococcus aureus* 28 (20.8 %), *Proteus mirabilis* 11 (8.2 %), *Staphylococcus saprophyticus* 8 (6 %), *Klebsiella pneumoniae* 7 (5.2 %), *Pseudomonas aeruginosa* 3 (2.2 %) and 2 (1.5%) for each of *lactobacillus spp., Candida albicans* and *Streptococcus spp.* While the lowest percent of infection was caused by *Enterobacter spp.*found in only 1 (0.7 %) of the isolates.

The isolated bacteria screened for their resistance to thirteen antibiotics from different classes including [Ampicillin (AMP), Amoxicillin-clavulanic acid (AMC), Cefotaxime (CTX), Ceftriaxone (CRO), Nalidixic acid (NA), Nitrofurantoin (F), Amikacin (AK), Gentamycin (GM), Imipenem (IPM), Cephalothin (CEP), Chloramphenicol (C), Sulfamethaxazole- Trimethoprim (SXT) and Ciprofloxacin (CIP)]. The isolates appeared to be varied in their resistance, the number and resistance percent for antibiotics used were as follow: ampicillin 67 (95.7 %), cephalothin 66 (94.2 %), sulfamethaxazole- trimethoprim and amoxicillin-clavulanic acid 64 (91.4 %) and cefotaxime 61 (87 %), nalidixic acid 52 (74.2 %), gentamycin 48 (68.5 %), ceftriaxone 46 (65.7 %), nitrofurantoin 31 (44 %), ciprofloxacin 23 (32 %), chloramphenicol 21 (30 %) and amikacin 18 (27 %), while the most effective antibiotic used was imipenem with resistance percent 0 (0%).

Total *E.coli* isolates also tested for their ability to produce hemolysin as virulence factor, and the results showed that 27 (38.5%) were α-hemolysin, 9 (12.8%) β-hemolysin and 34(48.5%) were γ-hemolysin producers. All *Escherichia coli* isolates were screened for their ability to produce (Extended Spectrum Beta Lactamases) ESBLs enzyme. Out of 70 *Escherichia coli* isolates, 41 (58.5%) were found to be ESBL producers, while 29 (41.4%) were non ESBL producers.

The plasmid profile of studied *E.coli* isolates using gel electrophoresis revealed that plasmid were found in 64 (91.6%) of isolates. The plasmid content showed variation in their size, more than one plasmid DNA bands appeared in many isolates with different molecular weights ranged from 1- more than10 kbp. The reported results indicate the dissemination of plasmids among *E.coli* isolates which may carry resistant genes against wide spectrum of clinically used antibiotics.

Three highly resistance isolates were chosen (E3, E25 and E34) for transformation test and many characteristic features of plasmid DNA content of these tested isolates were studied, of these, the location of the antibiotic resistance and hemolysin production genes were determined in the chosen bacterial isolates by the genetic transformation using the laboratory strain *E.coli* DH5-α with plasmid DNA purified from these isolates. The transformation process conducted successfully, and the results showed that the resistance genes for ampicillin, nitrofurantion and cefotaxime, amoxicillin-clavulanic acid, ceftriaxone, chloramphenicol sulfomethaxazole- trimethoprim were located on

plasmid DNA for E3, while those for ciprofloxacin, cephalothin, amikacin and gentamycin seemed to be located on chromosomal DNA. While for E25 isolate, the resistance genes for ampicillin, nitrofurantoin, cefotaxime, amoxicillin-clavulanic acid, sulfomethaxazole- trimethoprim and chloramphenicol were located on plasmid DNA and those for ciprofloxacin, cephalothin, amikacin, gentamycin and ceftriaxone were located on chromosomal DNA. Also, the resistant genes for ampicillin, ceftriaxone, nitrofurantion and cefotaxime were located on

plasmid DNA for E34 isolate, while the resistance genes for ciprofloxacin, amikasin, cephalothin ، gentamycin ، amoxicillin - clavulanic acid and sulfomethaxazole-trimethoprim were located on chromosomal DNA of this isolate. On the other hand, the ability of purified DH5-α transformant colonies to produce hemolysin were tested on blood agar and the results demonstrated their inability to produce alpha and beta hemolysin indicating that the genes which are responsible for hemolysin production were also located on chromosomal DNA.

To control the antibiotic resistance of the tested *E.coli* isolates, curing of plasmid DNA content were conducted using sodium dodecyl sulfate (SDS) and elevated temperature at 46C^{o}, two resistant isolates were chosen for this purpose and treated with sodium dodecyle sulfate at concentration (2% w/v) for 48 hrs. The genes encoding resistance to ciprofloxacin, ceftriaxone, cefotaxime, gentamycin, chloramphenicol and amikasin were cured from E3 and the percentage of curing was (50%), while ciprofloxacin, ceftriaxone, nitrofurantoin, sulfamethaxazole-trimethoprim and gentamycin resistance genes were cured from E25 after treating them with SDS agent with percentage of (41.6%). On the other hand, it appeared that resistance to ciprofloxacin, cefriaxone, cefotaxime, gentamycin, sulfamethaxazole-trimethoprim, chloramphenicol, nitrofurantoin and amikacin were cured from E3 at percentages (66.6%), while genes encoding cefotaxime, ciprofloxacin, ceftriaxone, nitrofurantoin, amikacin, sulfamethaxazole-trimethoprim and gentamycin were cured from E34 isolate and the curing percentages reached (58.3 %) after incubating the isolates at 46Co. It appeared that elevated temperature is the most efficient method than SDS agent.

Also the cured colonies tested for their ability to produce ESBL and the results demonstrated that the cured colonies cannot produce ESBL indicating that the genes responsible for this trait are plasmid situated.

All UPEC isolates were screened for the presence of aerobactin gene (aer) on plasmid DNA using polymerase chain reaction (PCR) assay, among 70 UPEC isolates, 61(87.1%) UPEC were positive for the existance of aerobactin virulence gene.

Renoprotective effects of aliskiren, irbesartan and ramipril in diabetic rats

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Degree: Master
Specialty: Pharmacology
Date of the debate: 12/5/2013
Supervisor: Professor. Kawa F. Dizaye

Abstract

Background

Diabetic nephropathy is an insidious and lethal complication of diabetes mellitus associated with progressive rise in albumin excretion rate, coupled with increasing blood pressure, leading to decline in glomerular filtration and eventually chronic kidney disease. The renin angiotensin system has been proposed as a key strategy for reducing kidney damage.

This study was designed to compare the effectiveness of different angiotensin inhibitors, direct rennin inhibitor (Aliskiren), angiotensin-converting enzyme inhibitors (Ramipril) and angiotensin II receptor blocker (Irbesartan) in prevention and treatment of nephropathy in a group of rat induced diabetes.

Methods

Thirty rats were divided into two groups. The first group consisted of 6 rats which were considered as the normal control group. The second group included 24 alloxan induced diabetic rats. The diabetic model rats were subdivided into four subgroups of six rats each. The first subgroup served as a positive control. The second, third and fourth subgroup received ramipril, irbesartan and aliskiren respectively.

Blood samples were collected from the rats for determining various biochemical parameters (blood glucose, and serum urea, creatinine, sodium and K^+ concentration). Urine was collected from the rats before and after 21 days to investigate renal parameters like (Na^+ and K^+ excretion rate, glomerular filtration rate, and albuminuria) following drugs administration. Systolic blood pressure and heart rate of the rats were evaluated using a tail cuff computerized power lab system.

Results

Diabetic nephropathic rats showed a significant increase in blood glucose level, blood pressure, heart rate, serum urea, serum creatinine, in addition to deteriorating renal functions including (urine flow, glomerular filtration rate, Na^+ and K^+ excretion rate, albumin and creatinine in the urine).

The administration of (Ramipril, Irbesartan, and Aliskiren) caused a significant reduction in blood pressure, blood glucose, serum urea, Na^+ and K^+ excretion rate, with a significant improvement in urine flow and glomerular filtration rate. All three drugs induced a significant elevation in serum K^+ concentration.

Conclusion

Administration of different angiotensin inhibitors (ramipril, irbesartan, & aliskiren) could slow the progression of nephropathy in alloxan induced diabetic rats. Both ramipril and irbesartan had the same renoprotective effects for most parameters.

Assessment of immunological parameters in patients afflicted with celiac disease

Name: Zaid Nabeel Elia
Degree: Master
Specialty: Medical Microbiology
Date of the debate: 2/5/2013
Supervisor: Assit. Prof. Saeed G. Hussein

Abstract

Celiac disease (CD) is an immune mediated malabsorption syndrome that occurs in genetically susceptible individuals intolerant to dietary gluten. Although considered as a primary gastrointestinal disease, CD is now known to have widespread systemic manifestation.

Thus we attempted to define the nature and role of some systemic cytokine that possibly play a role in the pathophysiology of the disease.

The study was carried out during the period from February 2012- October 2012. The sera were collected from those patient suspected of having CD on clinical ground (Newly diagnosed) & then subjected to serologic tests namely anti – tissue transglutaminase IgA, IgG (tTG I.U/ml.) & IgA, IgG - Endomysial antibody (EMA I.U/ml.).

The positive sera for anti - tTG IgA and IgA EMA autoantibody above the cut-off level were then subjected to cytokines assessment namely serum interferon gamma (IFN- γ I.U/ml.) and interleukin-10 (IL -10 pg/ml.) level; and further testing the frequency of anti-rotavirus IgG and anti-glutamic acid decarboxylase IgG antibodies (anti – GAD IgG I.U/ml.).

The participant groups comprised 50 newly diagnosed (ND) CD, 20 patients on gluten free diet (GFD) and 20 apparently healthy CD free control (These groups were subjected to the above parameters).

The results of the present study among the newly diagnosed cases reveals anti-tTG IgA and IgA - EMA seropositivity in 50 patients (15.1 %) of the total 330 sera examined ;with anti-tTG IgG & IgG -EMA seronegativity (below the cut-off) in all sera tested. The highest percent distribution of anti-tTG IgA and IgA -EMA seropositivity was at the serum concentration of 20-29 I.U/ml.(36 % & 34 % respectively).

A significant decrease ($P < 0.01$) was observed in the mean concentration of anti-tTG IgA and IgA- EMA between newly diagnosed CD and patients on GFD. The mean concentration of IFN-γ (I.U/ml.) and IL -10 (Pg/ml.) cytokine was significantly higher ($P < 0.01$) among newly diagnosed and patient on GFD when compared with health control.

The serum concentration of IFN-γ (I.U/ml.) and IL-10 (Pg/ml.) according to mode of clinical presentation & duration of disease revealed no significant differences ($P > 0.05$) except for IL – 10 (≤ 3 years & > 3 years on GFD) $P < 0.05$.

The frequency of anti -GAD IgG (I.U/ml.) among newly diagnosed CD & patient on GFD as future risk marker for developing T1DM was 14 % and 10 % respectively.

The sero-prevalence of anti-rotavirus IgG (I.U/ml.) was 22 % and 10 % among newly diagnosed CD and patients on GFD. As rotavirus possibly incriminated in the etiology of CD due to antigenic mimicry.

In newly diagnosed CD patient correlation between anti – tTG IgA & IL -10 exist ($P = 0.025$), as IL – 10 has immunostimulatory effect on B – cells.

Evaluation of Adiponectin and Some Immunological Parameters in Patients with Type 2 Diabetes Mellitus

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Degree: Master
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Date of the debate: 5/5/2013
Supervisor: Assistant Professor. Nabeel E. Waheda

Abstract

The current study focused to assess some immunological parameters in patients afflicted with type 2 diabetes mellitus; it was carried out in the Martyr Layla Qasm centre for diabetes in Erbil city during the period from April to July 2012.
A total of 150 blood samples were collected from patients with age range between (30-79) years and twenty healthy persons as control subject with the same age range.
The incidence of type 2 diabetes was more dominant in female than males. The age range group (40-49 years) and (50-59 years) showed the highest incidence of this disease. Obesity and over weight were more common in diabetic patients.
The number and percentage of patients having family history of diabetes was higher than the number and percentage of patients with out family history, and 1st degree relative of disease was more prevalent. The majority of patients had poor control haemoglobulin A1C.
A highly significant (P= 0.009) increase was observed in mean concentration of total IgE in sera of diabetic patients as compared with control group, also the mean concentrations of hs-CRP were highly significant as compared with control group (p=0.000)
There was a significant increase in mean concentration of TNF-α in patients as compared with control group. Regarding to mean concentration of IL-1β, the study showed statistically a high significant (p=0.001) increase in mean concentration of IL-1β in patients when compared to control group.
This study also revealed a highly significant (p=0.000) decrease in mean concentration of adiponectin in patients as compared to control group.
The mean concentration of total IgE was increase significantly in patients having BMI > 25 Kg/m2 in comparison to those with BMI < 25 Kg/m2 and control group, while there was no significant difference in mean concentration of total IgE between patients having BMI < 25 Kg/m2 and control group.
This study illustrated a significant increase in mean concentration of hs-CRP in patients having BMI > 25 Kg/m2 as compared with patients having BMI < 25 Kg/m2 and control group.
A significant increase was observed in mean concentration of TNF-α in patients having BMI > 25 Kg/m2 when compared with its mean concentration in sera of patients having BMI < 25 Kg/m2 and control group.
The mean concentration of IL-1β was highly significant elevated in patients having BMI > 25 Kg/m2 in comparison to those with BMI < 25 Kg/m2 and control group, while there was no significant difference in mean concentration of IL-1β between patients having BMI < 25 Kg/m2 and control group.
There were a highly significant elevation in the mean concentration of adiponectin in sera of control group as compared with its mean concentration in sera of BMI < 25 Kg/m2 and BMI > 25 Kg/m2, while statistically there was no a significant difference in the mean concentration of adiponectin between patients having BMI < 25 Kg/m2 and BMI > 25 Kg/m2.
This study demonstrated a significant negative correlation between adiponectin and TNF-α in sera of obese patients ($r = -0.643$, $p < 0.05$).

Assessment of Procalcitonin as a Proinflammatory Marker and its Relation with Immunological Markers in Burn Patients

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Date of the debate: 23/4/2013
Supervisor: Assistant Professor. Ruqaya M. Al-Barzinji

Abstract

Burns are injuries to tissues caused by heat, friction, electricity, radiation and chemicals. This study was designed to find out the role of PCT and other biological parameters as an inflammatory marker in burned patients.

This case control study was carried out on burn patients admitted to the burns unit at West Erbil Emergency Hospital (WEEH) in Erbil city during the period February 2012-April 2012. Blood samples were collected from 50 burn and 20 healthy controls (HC), out of 50 burnt patients 20 patients were secondly sampled to follow-up their immune profile. Consist of 15 (75%) females and 5 (25%) males, their age ranged from 1 to 49 years old.

The burn patients were categorized according to total body surface area percentage (TBSA%) burnt, in which 1st group (G1) was 18 patients with mean TBSA, 16.67% and mean age 18.08 years, 2nd group (G2) was 23 patients with mean TBSA, 37.28% and mean age 22.49 years, 3rd group (G3) was 6 patients with mean TBSA, 59.17% and mean age 28.17 years and 4th group (G4) was 3 patients with mean TBSA, 86.87% and mean age 26.33 years.

Serum from both burn patients and control groups were subjected to in-vitro assessment of some inflammatory biomarkers namely procalcitonin (PCT), Neopterin (Neo), Interleukin -1ß (IL-1β) and high sensitivity C-reactive protein (hsCRP).

The high incidence number of burn from total 50 burn insult was 16 located at age group (20-29) years old in which 13 (40.62%) patients were female and 3 (16.66%) patients were male. The maximal mean of long hospital stay located in 1st group was 8.13±2.97 days while the minimal stay located in 4th group was 2.81±2.15 days. The mortality rate among females burn patients were higher 14 (28%) than males 4 (8%). The most common cause of burn in both female and male was flame, 43 (86%) followed by scalded burn 4 (8%).

Concerning the hsCRP test of 50 burn patients there were 47 shows high and other 3 patients were hsCRP normal with statistically highly significant differences ($P<0.01$). The serum concentration of PCT and hsCRP were showed also highly significant differences ($P<0.01$), while IL-1β and Neo was showed no significant differences ($P>0.05$) when compared burn patients with healthy control.

In respect to TBSA% there were highly significant differences ($P<0.01$) in mean serum concentration of all studied biomarkers when independently compared various burn group with HC except PCT show significant result ($P<0.05$). No significant difference ($P>0.05$) was revealed when compared mean serum concentration of above biomarkers in deceased burn patients with survivors. Mean serum concentration of Neo and hsCRP showed highly significant differences ($P<0.01$), while no significant differences ($P>0.05$) observed of PCT and IL-1β when compared survivor patients with HC. No significant differences observed of each PCT and IL-1β while highly significant differences ($P<0.01$) in Neo, whereas hsCRP was significant differences ($P<0.05$) among 20 burn patients at admission and after a mean of 10 days post burn.

Concerning the correlation between studied biomarkers, positive highly significant ($P<0.01$) correlation observed between each hsCRP and PCT, hsCRP and Neo and hsCRP with IL-1β. While IL-1β shows significant ($P<0.05$) negative correlation with PCT while negative highly significant ($P<0.01$) correlation with Neo. Negative highly significant ($P<0.01$) correlation result was found when compared Neo with PCT.

PCT is a highly efficient laboratory parameter involving a simple and rapid beside test for diagnosis and prognosis mortality in burn patients. The values of Neo and IL-1β

were statistically no significant differences ($P>0.05$), between burned patients and healthy control by using t-test analysis although the serum concentration of IL-1 was higher in burn patients, whereas the mean serum concentration of PCT and hsCRP in burn patients was significant highly differences ($P<0.01$) when compared with healthy control group.

An Immunological and Epidemiological Study of Trichomoniasis in Women in Erbil

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Degree: M.Sc.
Specialty: "Medical Microbiology
Date of the debate: 29-2-2013
Supervisor: Assistant Professor**.** Hadi Mahdi Ahmad Al-Sakee

Abstract

Trichomonas vaginalis infection is one of the sexually transmitted diseases. It is a health problem worldwide, including Iraq. It has also been associated with adverse pregnancy outcome and increased risk of HIV and HPV. Therefore, accurate diagnosis is important. The current study was carried out to investigate the immunological and epidemiological aspects of trichomoniasis in women in Erbil. The study was done over the period from September 2012 till July 2013. Vaginal discharge and blood samples were collected from 440 women whose ages ranged between 16-60 years and who attending Maternity hospital and some private clinics in Erbil. Out of 440 women, 14 (3.18%) and 12(2.73%) were found to be positive for trichomoniasis by Culture technique and direct wet mount, respectively.

The infection rate was non-significantly higher among women from rural areas (4.9%) than those from urban areas (3.2%) and in housewives (3.8%) more than employed women (1%). Non pregnant (3.4%) women were more susceptible to infection than pregnant group (0%), and there were no significant differences among married (3.1%), widow (7.7%) and divorced women (0%).

Trichomoniasis was comparably higher in illiterate women (4.1%) than those with school and University qualifications (2.44%). High percentage of vaginal discharge were grey colored (50%) followed by green color (16.7%). The infection rate was 4%, 3.3% and 3.1% among women with age groups of 16-26 years, 27-37 years and 38-48 years, respectively. No significant association was observed between trichomoniasis and number of parity on one hand and neonate abnormality on the other hand. However, significant ($P<0.05$) association of trichomoniasis and abortion was noticed. Women who were immediately post menstruation (9.3%) had**.**

Urinary Iodine Level of Primary School Children in Duhok Governorate

Name: Bakhtiyar Ahmed Rasheed
Degree: M.Sc.
Specialty: Community Medicine
Date of the debate: 3-11-2013
Supervisor: Prof. Tariq S. Alhadithi

Abstract

Iodine deficiency disorders (IDDs) are the most important preventable cause of impaired development of the brain and subsequent mental retardation in the world. Continuous monitoring and evaluation are an essential part of universal salt iodization (USI) and of any programme for the elimination of IDDs. The iodine content of salt is an indicator of the salt iodization process while median urinary iodine concentration remains the principal impact indicator.

The aim of this school based cross-sectional study is to identify the urinary iodine level of Primary School Children in Duhok Governorate, where seven hundred sixty four primary school students were selected randomly through probability proportional to size sampling technique from all the primary schools in Duhok Governorate. The level of thyroid gland size and anthropometric measurements were measured and adequate urine samples collected for measuring urinary iodine concentration at the National Nutrition Research Institute laboratory in Baghdad using ammonium persulfate method. Background socio-demographic variables were collected also presenting study subject age, residential area, grade attended, parents educational level, occupation, history of goitre and its treatment.

The median urinary iodine level was 95µg/l with mean of 110.4 µg/l and standard deviation of 75.2; this is classified as mild iodine deficiency status "50-99µgl" according to WHO cut-off points. More than half (53.4%) had median urinary iodine level less than the optimal level "100-200 µg/l". There was statistical difference in median urinary iodine level among districts and students' age while there was no difference among girls and boys or between urban and rural areas, thyroid gland size and nutritional status. Goitre remain a public health problem with (5.4%) of the study samples have large thyroid gland size, while (21.2%) were stunted "have low height for age <-2SD Z-score" and (10.6%) were thin with BMI < -2SD Z-score.

Iodine deficiency is still a major public health problem in Duhok Governorate with (53.4%) of the study subject have below optimal level of median iodine nutritional level (> 100µg/l).

The Effect of Formaldehyde Exposure Onthe Rat Thyroid Gland: A Morphological, Biochemical and Immunohistochemical Study

Name: Nali Abdulkader Maaruf
Degree: M.Sc.
Specialty: Anatomy
Date of the debate: 20-2-2014
Supervisor: Dr. Paiman Jamal Muhamad Ameen

Abstract

Formaldehyde is considered as a carcinogen by the international agency for research on cancer.Theeffect of formaldehyde on the endocrine glands is not fully explored, this study was designed to detect the effect of formaldehyde exposure on rat´s thyroid gland and to evaluate gender effect after exposure.

Two hundredrats wereused and divided randomly into two groups (100 male and 100 female), each group was subdivided into control and experimental groups each with 50 rats.The rats were exposed to formaldehydeusing (20 ml formaldehyde), 5hrs/d,for 21 days, body weight was estimated pre and post exposure.Animals were sacrificed, serum T3and T4were estimated and thyroid sections were examined for histomorphometry using H&E stain and immunohistochemistry for localization of estrogen receptor and S-100 protein.

The result of the study showeda significant decrease in the body weight in both male and female rats after exposed to formaldehyde vapour.T3 and T4were significantly decreased in experimental groups when compared with control groupswithno significant effect of gender in bothexperimental and control groups.Histomorphometrical measurementsshowed a significant decrease in the area of the colloids, area of follicles and width of the cells with a significant increase in the height of the cells and number of the follicles in both experimental groups when compared with control groupswith no significant effect of gender in both control and experimental groups.Immunohistochemistryshowed significant increase in the localization of S-100 protein in both experimental groups when compared with control groups and there was no localization of estrogen receptor in both control andexperimental groups.

In conclusion, exposure to formaldehydevapour at a dose of20ml,5hrs/d, for 21 days had a toxic effect on the thyroid gland in both male and female rats with no significant effect influence of gender.

Mortality Trends in Erbil City from 2007 To 2011

Name: Aso Hameed Kareem
Degree: M.Sc.
Specialty: Community Medicine
Date of the debate: 7-1-2014
Supervisor: Assistant Professor .Haitham Issa Bahoo

Abstract

Reliable and valid information on trends of mortality and the most common causes of death is essential to guide priorities for the allocation of resources within the health sector in order to improve health services provided to population, increase longevity and improve quality of life. The objectives of this study were to determine crude, gender, age, cause specific death rates and mortality trends in the study period, and to identify gaps in death registration.

This is a descriptive data review study done in Erbil city on 16,783 deaths registered in the statistical unit in Directorate of health in Erbil city, from 2007 to 2011, the data were reviewed and cleared for the purpose of analysis, causes of deaths were classified according to modified body systems and broad cause of death.

The study revealed that 37.2 % of population in Erbil city was under 15 years with high fertility rate. Nearly 28% registered in the office of births and deaths where no cause of death determined, and the majority of them were in the old age group. The average infant mortality rate was 33 per 1000 live births which constituted 20.7% of total deaths; where respiratory system was the main cause of death. Nearly 30% of total deaths in all age groups were caused by accidents, mainly road traffic accident in males and burn in females, whereas 25.5% of total deaths were caused by circulatory system diseases mainly ischemic heart disease in males and stroke in females, while the proportions of death from respiratory system and cancers were 18.9% and 7% respectively. Trends of mortality in general showed decreasing in the rate of deaths from 2007 to 2009 followed by increasing until 2011 and most of these increasing were due to circulatory system diseases, accidents and cancers. It's worth to mention that there was no implementation of International Classification of Diseases system in registration of death; where only one cause of death mentioned without having details on sequences of underlying to direct cause of death.

Eventually, recording of deaths in Erbil City was not in a good state as there was insufficient information on the cause of death which needs training of physicians and other medical staffs on registration with continuous updating of information regarding death especially in implementing International Classification of Diseases. In addition, there is a need to increase population awareness on the value of death registration which is considered as a backbone of health system.

Assessment of Inhibin B, Anti – Mullerian Hormoneand Pro – Inflammary Cytokines Amonginfertile Males Erbil

Name: Shahin Hazm Mustafa
Degree: M.Sc**.**
Specialty: Medical Microbiology
Date of the debate: 10-4-2014
Supervisor: Assistant Professor. Nabeel E. Waheda

Abstract

Two hundred seventy person including (90 primary , 90 secondary infertility and 90 healthy control males) were involved in this study . The enrolled male patients who were categorized into the primary and secondary infertility attended the IVF center and private laboratories. The study was done in Erbil city from 1st September 2012 to 1st September 2013. The purpose of the study was to evaluate the hormonal, immunological and other parameters of seminal fluid and serum. Results revealed that the most exposed male group with regard to the infertility was male aged (25-34) years. The males with overweight(BMI $\geq$ 25.00 Kg /m^2) were over represented with regard to infertility.

The mean percentages of the semen parameters in infertile subsets were lower than those in fertile males with highly significant differences with respect to all parameters like total sperm count, sperm motility and sperm morphology.

Mean concentration of inhibin B in both semen and serum displayed significantly higher values in the infertile group as compared to the primary and secondary infertile males. Significant differences in the mean concentrations of AMH, FSH and Testosterone were observed between the infertile males and the control group ($P < 0.001$).The cytokines IL-1β, IL-6, IL-17 and TNF-α in the serum and the seminal plasma exhibited higher mean concentrations in infertile males.

Concerning the correlation, there was a highly positive correlation between each of (Inhibin B, AMH and Testosterone) and the total sperm count. While highly negative correlation was found between (BMI, FSH and TNF-α) and the total sperm count. Furthermore, a negative correlation was detected between(IL-1β and TNF-α) and the mean percentage of the sperms with progressive motility.

Therapeutic Effect of Pregabalin, Vitamin B-Groups and Their Combination on Patients with Diabetic Peripheral Poly Neuropathy

Name: Talar Ameer Sheet
Degree: M.Sc.
Specialty: Pharmacology
Date of the debate: 23-6-2014
Supervisor: Dr. Kawa F. Dizaye

Abstract

The major long-term complications of diabetic peripheral neuropathy are relates to damage to blood vessels. Blood vessel damage may lead to either micro vascular or macro vascular complication. The main macro vascular diseases are ischemic heart disease, stroke and peripheral vascular disease. The main micro vascular complications of diabetes mellitus (DM) are neuropathy, nephropathy and retinopathy. This study was designed to evaluate and compare the effectiveness of pregabalin, Vitamin B-groups and their combination in treating patients with diabetic peripheral neuropathy (DPN).

Fifteen healthy volunteers and 45 patients with diabetic neuropathy with HbA1c ranged between (6.7-12.2) % were included in this study. The patients were randomized in to three groups of 15 patients each. The first group received pregabalin capsule (75mg twice daily) for six weeks. The second group received B-complex tablet [B1 vitamin (250mg), B6 vitamin (250mg), B12 vitamin (1mg)] twice daily for six weeks. The third group received pregabalin capsule (75mg twice daily) with B-complex tablet twice daily for six weeks.

Blood sample was taken before and six weeks after the intervention and the investigations included liver function test, renal function test, HbA1c, and malondialdehyde. Thereafter the patients were sent for performing the nerve conduction study before and six weeks after receiving the medications.

Administration of pregabalin twice daily for six weeks did not significantly improve the latency of nerve conduction study in patients with DPN, but pregabalin induced a significant improvement in the amplitude of right Peroneal nerve at the ankle, left Peroneal nerve at the ankle, left Peroneal nerve at the fibular head and left tibial nerve at the popliteal fossa.

While pregabalin could induce a significant improvement in the conduction velocity of right tibial nerve and left tibial nerve.

Administration of Vitamin B-groups demonstrated a significant improvement in the latency of right tibial nerve at the ankle and left tibial nerve at the popliteal fossa of patients with DPN when compared to the pretreated patients, Furthermore, vitamin B-groups showed an improvement in the latency of left peroneal nerve at the ankle and left tibial nerve at the ankle in patients with DPN, whereas vitamin B-groups showed a significant improvement in the amplitude of right Peroneal nerve at the fibular head. Daily uses of vitamin B-groups produced a significant improvement in the conduction velocity of right Peroneal nerve.

Administration of the combined drugs (pregabalin and vitamin B-groups) did not significantly improve the latency of left Peroneal nerve at the fibular head, right and left tibial nerve at the ankle, right and left tibial nerve at the popliteal fossa in patients with DPN. Nonetheless combination of pregabalin and vitamin B-groups induced a significant improvement in the amplitude of right Peroneal nerve at the ankle, left Peroneal nerve at the ankle, right Peroneal nerve at the fibular head, right tibial nerve at the popliteal fossa, and left tibial nerve at the popliteal fossa of patients with DPN, Nonetheless the combined drugs could significantly recover the conduction velocity of left tibial nerve in DPN patients.

Patients receiving pregabalin for six weeks demonstrated a significant increase in the level of direct bilirubin ($p=0.02$) and aspartate aminotransferase (AST) ($p=0.048$). Receiving pregabalin treatment has no hazardous effect on the kidney function. The use of pregabalin for six weeks had significantly increased the serum level of malondialdehyde of patients with diabetic peripheral neuropathy.

Vitamin B-groups were more efficacious than the pregabalin in improving latency of patients with DPN. While combined drugs have significantly caused greater improvement in the amplitude than that of pregabalin and vitamin B-groups. However no significant differences were found between pregabalin, Vitamin B-groups, and their combination in improving the conduction velocity in patients with DPN.

Evaluation of Pharmacodynamics of Amoxicillin-Clavulanic Acid and Azithromycin in Patients Undergoing Tonsillectomy

Name: Rasha G. Thanoon
Degree: M.Sc.
Specialty: pharmacology
Date of the debate: 15-5-2014
Supervisor: Dr. Nidhal AK Mohammed Ali

Abstract

Chances to cure an infection are best if an antibiotic with the appropriate spectrum is present at the site of the infection in an adequate concentration for a sufficient period of time. During the last years, appreciation of this concept has led to increased awareness of the importance of antibiotic tissue penetration owing to the worrying increase of bacterial resistance and failure of treatment.This study was designed to assess the effectiveness of two antimicrobial agents indicated in the treatment of tonsillitis which are amoxicillin-clavulanic acid and azithromycin by quantitative evaluation of their concentrations in plasma and tonsil tissue of children undoing tonsillectomy and relate these levels with the minimal inhibitory concentrations (MIC) of the bacteria isolated from the patient's tonsils.The present study was carried out on 43 patients with recurrent tonsillitis (26 male, 17 female) with mean age of (5.46±2.38) were scheduled for tonsillectomy in E.N.T department in Rizgary teaching hospital .Tonsillar swab was obtained from each patient .The patients were allocated randomly into 2 groups. Group1 patients (n=23) were given amoxicillin-clavulanic acid and azithromycin was given to group 2 patients (n=20). The drugs were given orally a day before operation (as recommended dose regimen for amoxicillin-clavulanic acid three times daily and once daily for azithromycin), and 2 hours before the scheduled time of surgery at the recommended dose of 156mg/5ml (24.96 mg/kg) for amoxicillin-clavulanic acid and 10 mg/kg forazithromycin.Bacterial isolation and identification were performed by the conventional diagnostic technique. *Staphylococcus aureus* was the most predominant organism (27.27%) isolated from the patients in the present study and other isolated bacteria were *Streptococcus pyogenes , Streptococcus sanginus, Streptococcus agalagcia, , Streptococcus salivarius, Pseudomonas aeurogenosa, Streptococcus intermedius, Streptococcus mitis, Staphylococcus lentus, Staphylococcuepidermidis,Staphylococcushaemolyticus, Streptococcus parasanginus , Proteus mirabilis, Granulicatella elegans and Granulicatella adiacen.*The isolated microorganisms exhibited different MIC values. The MIC of amoxicillin-clavulanic acid group for the isolated *Staphylococcus aureus* from different patients ranged from ≥1 to ≥8 µg/ml. The MIC for both *Streptococcus pyogenes* and *Streptococcus agalagcia* were >0.5 µg/ml and > 0.125 µg/ml respectively. The MIC of azithromycin for *Staphylococcus aureus* was 4µg/ml and for *Streptococcus pyogenes and Streptococcus agalagcia was* 16µg/ml and 4µg/ml respectively.Blood and tonsillar tissue samples were taken from each patient at time of operation corresponding to 2 hours after drug administration. The plasma and tissue concentration of each antibiotic was determined by microbiological assay method.Amoxicillin-clavulanic acid attained mean concentration of 5.49± 0.33 µg/ml in plasma whereas no concentrations were determined for amoxicillin-clavulanic acid in tonsils of the patients. For azithromycin; the mean concentrations in plasma and tonsils were 0.27 ± 0.04µg/ml and 13.97± 2.75 µg/g respectively. In conclusion, azithromycin achieved high tissue concentration than amoxicillin-clavulanic acid in tonsils tissues making this antibiotic a good choice for recurrent tonsillitis where the standard therapy of tonsillitis with penicillins fails to cure the infection especially when intracellular organisms such as S*taphylococcus aureus* which is found as the most predominant pathogen in the patient's tonsils.

Evaluation the Role of Bone Marrow Examination in Diagnosis of Hematological Diseases in Hemato-Oncology Centers in Kurdistan region

Name: Shorsh Jameel Ridha
Degree: M.Sc.
Specialty: Hematopathology
Date of the debate: 16-2-2014
Supervisor: Dr. Nawsherwan Sadiq Mohammad

Abstract

Background: Bone marrow aspiration and trephine biopsy have an important role in evaluation and diagnosis of most hematological and some non hematological disorders.
Objective: The aims of this study were to assess the value of bone marrow examination in diagnosis of hematological diseases and determination of frequency and causes of dry tap marrow**.**
Patients and Methods: This study was prospective only and it was conducted from January 2013 to June 2013 at Hiwa and Nanakaly hospitals in Sulaimanyia and Erbil respectively. A total number of 245 cases were underwent bone marrow examination. Touch imprint was prepared in a state of dry tap marrow. Sudan black stain was used in acute leukemia.
Results: The patients comprised 138 (56.3%) males and 107 (43.7%) females, with ages ranging from 1 to 81 years and the mean age of cases was 36.7$\pm$ 24 years. The most frequent clinical finding of patients underwent bone marrow examination were pallor (71.4%), followed by fever (32.2%). The main indications were present of blast cells in peripheral circulation 69 (28.2%), followed by bone marrow assessment for staging of lymphoma 37 (15.1 %). The most common diagnoses encountered were: Acute leukemia 69 (28.2%), Active marrow (negative for lymphoma) 27 (11.1%) and active marrow 24 (9.8%). The frequency of dry tap was (4.08%) and the most common causes were: acute leukemia and faulty technique (normal marrow).
Conclusion: Bone marrow examination is an important diagnostic tool in the diagnosis and staging of various hematological disorders.

Possible role of cytokines and anti-chlamydia pneumonia Iggy linked to Metabolic syndrome markers in coronary atherosclerotic patients

Name: Lajan Qasim Rahman
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 1-4-2014
Supervisor: Dr. Ruqaya M. Al-Barzinji

Abstract

Coronary atherosclerosis is an inflammatory disease, caused by high level of plasma cholesterol, in particular those with high level of low-density lipoprotein cholesterol, which considered as one of the principal risk factors for atherosclerosis. The present case control study was carried out between December 2012 and May 2013, in Hawler cardiac center, 74 coronary atherosclerotic patients were enrolled in our study (44 males and 30 females), their age ranged between 30 years to 75 years old, with an average of 57.77 years. 25 (33.8%) were type 2 diabetes, 51 (68.9%) were hypertensive and 29(39.2%) were obese. Apparently 40 healthy individuals who have no history of clinical evidence of any acute or chronic disease were also joined in this study. Serum from both coronary atherosclerotic patients and control groups were subjected to in-vitro assessment of some inflammatory biomarkers including high sensitivity C-reactive protein, interleukin-6, tumor necrosis factor alpha, Interleukin-10, leptin, soluble leptin receptor and *Chlamydia pneumoniae* IgG were also elevated. There was a highly significant difference between coronary atherosclerotic patients and healthy control in terms of the mean of total cholesterol, high density lipoprotein, low density lipoprotein, triglycerides and body mass index ($P<0.01$). There was a significant difference between coronary atherosclerotic patients and healthy control in terms of the mean of interleukin-6, tumor necrosis factor-α, leptin and soluble leptin receptor ($P<0.05$). However, difference was highly significant between the above groups in term of the mean of high sensitivity C-reactive protein, interleukin-10 and *Chlamydia pneumoniae* IgG ($P<0.01$).
Serum concentrations of high sensitivity C-reactive protein, tumor necrosis factor-α, *Chlamydia pneumonia* IgG and interleukin-10 in obese patients were more and higher than non-obese patients ($P<0.01$). Regarding serum concentrations of interleuikn-6, leptin and soluble leptin receptor in obese patients were higher than non-obese patients ($P<0.05$). Serum concentrations of high sensitivity C-reactive protein, interleukin-6 and interleukin-10 in diabetic and smoker patients were higher than non-diabetic and non-smoker patients ($P<0.05$). Regarding tumor necrosis factor-α serum concentration in diabetic patients was significantly higher than non-diabetic patients ($P<0.01$). However serum concentration of *Chlamydia pneumoniae* IgG in smoker patients was significantly higher than non-smoker patients ($P<0.01$). Serum concentration of high sensitivity C-reactive protein in hypertensive patients was statistically significant than non-hypertensive patients ($P<0.05$).
Serum concentrations of leptin, soluble leptin receptor and *Chlamydia pneumoniae* IgG in female patients were statistically significant than male patients ($P<0.05$). Serum concentrations of high sensitivity C-reactive protein, interleukin-6, tumor necrosis factor- α, interleukin-10, leptin, soluble leptin receptor and *Chlamydia pneumonia* IgG in patients < age 50 were statistically significant than patients > age 50 ($P<0.05$). There was a positive significant correlation observed between interleukin-6 and high sensitivity C-reactive protein and with erythrocyte sedimentation rate.

Our study revealed that various factors might be involved in the pathophysiology of atherosclerosis such as: age, sex, diabetes, hypertension, obesity, defect in lipid metabolism, change in the concentration of various lipoproteins of cholesterol and smoking habit, linked with inflammatory marker, cytokines and risk of microbial infection like *Chlamydia pneumoniae* IgG.

FLT3-ITD Mutation in Patients with Acute myeloid Leukemia Attending Nanakaly and Hiwa hospitals

Name: Sarween Sherzad Rasul
Degree: M.Sc.
Specialty: Hematopathology
Date of the debate: 23-12-2014
Supervisor: Nawsherwan Sadiq Mohammad

Abstract

Background: Mutations within the *FLT*3 gene, which code for the class-III-receptor kinase FLT3, ranked within the most frequent recurrent known genetic markers in acute myeloid leukemia (AML). Internal tandem duplication (ITD) mutations in the juxtamembrane domain of FLT3 gene occur in 20-25% of AML.
Objectives: This study designed to detect the frequency of FLT3-ITD mutation in AML patients, and to correlate the prevalence of this mutation with the clinical presentation of the patients and their response to induction therapy.
Methods: The study comprised 51 AML patients and 20 healthy controls. For each patient, complete blood picture, blood film, bone marrow aspiration and biopsy was done. FLT3-ITD mutation was detected by conventional (PCR) technology. Complete hematological remission after induction chemotherapy was assessed by clinical examination and full laboratory investigations.
Results: Out of 51 AML patients 12 (24%) had FLT3-ITD mutation , 49 of them presented as *de novo* AML and 2 of them were presented as secondary AML after other hematological disease. Moreover, 9 out of 12 mutated patients were newly diagnosed whereas 3 out of 12 were in relapse. The mean age of patients who had the mutation was lower (36.44) than those without the mutation (36.58); also the majority of patients with mutation were female(m:f is 1;1.5) . The mean WBC count in mutated patients (72.57)was significantly higher than non-mutated patients(47.80). Higher bone marrow and peripheral blast cell percent(70.25,64.50 respectivly) was found in mutated patients. FLT3-ITD mutation was mostly detected in M3 (45.45%) followed by M4 (33.33%).

Conclusion: Since FLT3-ITD mutation was associated with a significantly higher WBC count bone marrow and peripheral blast cell percent and low rate of response to induction therapy; therefore it had been considered one of poor prognostic factor.

Detection of Serum P53 in Haematological Malignancies in Erbil

Name: Sayran Ghazy Younis
Degree: M.Sc.
Specialty: Hematopathology
Date of the debate: 23-12-2014
Supervisor: Ranan Kardagh Polus

Abstract

tP53 is a tumor suppressor gene located on the short arm of chromosome 17 encoding a nuclear phosphoprotein that plays an important role in controlling the normal cell proliferation .The suppression of p53 protein results in interruption of DNA repair mechanisms in dividing malignant cells thereby increasing the DNA damage and activating p53- independent mechanisms of apoptosis, so p53inactivation is a key factor in human tumor genesis and chemotherapy resistance .mutation in p53 have been found among many kinds of malignancies including the hematological one . Normal p53 protein is a multi-functional protein that participates in cell cycle regulation, Apoptosis, cell immortality and cancer cell response to chemotherapeutic agents. Generally p53 mutation have been found to be more frequent in myeloid leukemia such as chronic myeloid leukemia (CML) and acute myeloid leukemia (AML) than acute Lymphoblastic leukemia(ALL) and chronic lymphocytic leukemia(CLL).

The aim of study is to investigate the incidence of serum p53 in hematological malignancies and to study the correlation between p53 mutation and degree of response (in remitting and relapsing cases) of hematological malignancies. In this study we use ELISA to estimate the frequency of serum p53 in hematological malignancies. This study included (200) patients with different hematologic malignancies a period from December 2013 to June 2014 in Nanakaly hospital for blood disease all cases were prospective. Studied patients included newly diagnosed cases 84 (42%), patients on treatment 49 (24.5%), relapsed patients 14 (7%), and patients in remission 53 (26.5%).

The study included 116 (58%) males and 84 (42%) females. Corresponding to a male to female ratio of (1.4:1).Their ages ranged between (1) to (88) years, with a mean age of 43.1 years, the group included 28(14%) children and 172(86%) adult. A control group of (30) healthy looking individual including (21) males and (9) females with a mean age of (32) years were studied to determine a cut off value for p53 protein that discriminates between normal and mutant p53 protein was calculated according to standard statistical methods, the figure chosen was 0.80 U/m.In this study we concluded that the frequency of p53 mutations in hematological malignancies in Erbil city is 19.5%. The highest frequency rate of p53 mutation was among patients with lymphomas 30% that followed by ALL 26.7% and CML 23.1% In this study we found there was no association between the frequency of p53 mutation and gender, age and presenting symptoms, however organomegaly was associated with higher frequency of p53 mutation. Also we found there was no significant difference between p53 mutations in newly diagnosed and relapsed cases.

Leptin, Malondialdehyde and Other Inflammatory Markersin Infertile Males

Name: Ahmed Abdul-Qader Abdul-Salam AL-Naqshbandi
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 12-3-2014
Supervisor: Assist.Prof. Ruqaya M. Garib Al - Barzinji

Abstract

Infertility is a reproductive tract problem caused by many factors like infections, inflammations, endocrine disturbances and immunological factors. These factors clinically relevant markers of testicular functions and risk factors play role in male infertility. Current study focused on detecting more risk factors and markers for primary infertility in order to develop interventions for investigation and preventing their progressions. The present prospective case control study was carried out between March to May 2013, in Maternity Teaching Hospital / in-vitro fertilization center and Shayi private clinical laboratory. 75 infertile males representing patients group were enrolled in this study, they divided in to two groups: 38 leukocytospermic men (24 normozoospermia, 10 oligozoospermia, 4 azoospermia) and 37 non-leukocytospermic men (23 normozoospermia, 10 oligozoospermia, 4 azoospermia). Apparently 40 healthy individuals who have no history of clinical evidence of any disease were also joined this study as control group.

Blood sera and seminal plasma from both infertile patients and fertile healthy men were subjected to assessment of some inflammatory biomarkers, antisperm antibodies, polymorphonuclear-elastase, malondialdehyde, interleukin-8, leptin and leptin receptor, as well as testosterone. There was highly significant difference between infertile male patients and healthy control in seminogram in terms of the mean of semen volume, sperm count, sperm motility and abnormal morphology ($P<0.01$). There was highly significant difference between infertile patients and healthy control in terms of the mean of antisperm antibody, polymorphonuclear-elastase, leptin and testosterone ($P<0.01$). There was significant difference between above groups in terms of the mean of malondialdehyde and leptin receptor ($P<0.05$).

Seminal plasma mean concentrations of antisperm antibody and interleukin-8 in leukocytospermic men were significantly higher than non-leukocytospermic men ($P<0.05$) and ($P<0.01$), respectively. Seminal plasma mean concentrations of malondialdehyde and leptin at $P<0.05$ and leptin receptor at $P<0.01$ in varicocele repair patients were statistically significant than healthy group. In cigarette smoking patients, seminal plasma mean concentrations were significant in terms of malondialdehyde ($P<0.05$) and highly significant in terms of interleukin-8 and leptin receptor ($P<0.01$) than healthy control. Regarding seminal plasma mean concentrations in alcohol consumption patients revealed significant in terms of polymorphonuclear-elastase and malondialdehyde ($P<0.05$) and highly significant in terms of leptin and leptin receptor ($P<0.01$) than healthy subject. However serum concentration of testosterone hormone in smoker and alcohol consumption patients was significantly lower than healthy group ($P<0.05$).

Declining spermiogram was associated with age. Patients with age group >40 years old have lower semen volume and sperm characteristics. The age also significantly correlated with body mass index which affected adversely on semen quality, body mass index >30 (obese) have worst sperm parameters (spermiogram).
Current study revealed that various factors have been introduced in the pathophysiology of primary male infertility such as: age, obesity, varicocele repair, cigarette smoking and alcohol consumption, all associated with increased leptin and leptin receptor levels, such elevation associated with decreased sperm quality particularly in terms of sperm count

and sperm motility beside decline in testosterone level that leading to increase male infertility.

Identification of B-Lactamase Production and Biofilm Formation in Bacteria Isolated From Tonsillitis/Pharyngitis Cases

Name: Sevan Hassan Bakir
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 11-5-2014
Supervisor: Assist. Prof. Fattma A. Ali

Abstract

Tonsillitis and Pharyngitis are an infection of the throat region poses one of the most common problems in the upper respiratory tract infection and are one of the main reasons leading the persons to seek advice from a physician. This study was carried out during the period (December, 2012 to August, 2013). A total of two hundred of throat sawbs were collected from patients with tonsillitis and pharyngitis infection at the age ranged between (1-70) years, who were attending the clinic outpatient unit in Rizgary and Raparin teaching hospitals in Erbil city.

Throat swabs were collected and examined for microscopically using Gram stain examination and culture technique. Isolated microorganisms were identified using microscopical, morphological, biochemical tests and Vitek2 compact system.

The results showed that 134 (67%) of throat swabs were culture positive the total number of isolated microorganism isolates obtained from patients were (185) isolates.

These isolates were distributed between Gram-positive bacteria 143 (77.3%), Gram-negative bacteria 34 (18.4%) and fungi 8 (4.3%).Single isolates found in 84 (62.7%) and mixed isolates in 50 (37.3%).

The most frequent isolated microorganisms from tonsillitis/pharyngitis patients were *Staphylococcus aureus* 54 (30.5%), *Streptococcus pyogenes* 16 (9%), *Streptococcus parasanginis* 12 (6.8%), *Pseudomonas aeruginosa* 11 (6.2%) and *Proteus mirabilis* 10 (5.6%).

The highest percent of tonsillitis/pharyngitis were 69 (77.5%) in the age group (1-12) years. According to antibiotic sensitivity test most of the Gram-positive bacterial isolates showed high resistance to Penicillin 137 (95.8%) and Ampicillin 136 (95.1%) and the most effective antibiotics and less resistance were Ciprofloxacin 6 (4.2%) and Imipenem 33 (23.1%), while among Gram-negative bacteria most isolates revealed high resistance to Ampicillin 32 (94.1%) and Nitrofurantoin 32 (94.1%). And the most effective antibiotics and less resistance were Tobramycin, Cefepime and Levofloxacin (0%) for each of them.

All Gram-positive and Gram-negative bacterial isolates (177) were screened for biofilm production as one of the virulence factors by using three different methods (Tissue culture plate method, Congo red agar method and Tube method) and the results showed that the tissue culture plate method was the most sensitive method for detection of biofilm production. The results by tissue culture plate method by using ELISA (Enzyme-Linked immune sorbent assay) system were 17 (9.61%) non or weak and 160 (90.39%) were strong and moderate biofilm producers, while by congo red agar method 26 (14.7%) non or weak and 151 (85.3%) were strong and moderate biofilm producers and by tube method 47 (26.5%) non or weak and 130 (73.5%) were strong and moderate biofilm producers. The highest percentage of bacterial biofilm producers were resistant to (7) antibiotics.

All (143) Gram-positive bacterial isolates were screened for their ability to produce β-lactamase enzyme using Nitrocefin test, of them 116 (81.1%) were found to be β-lactamase positive.

All *Staphylococcus aureus* isolates were screened for their ability to resist Methicillin resistance using Cefoxitin and Oxacillin disc diffusion method and out of (54) isolates 42 (77.8%) were resistant to Methicillin resistance.

All Gram-negative bacterial isolates (34) were screened for their ability to produce extended spectrum β-lactamase enzyme by using double disk diffusion method, of them 26 (76.5%) were produced extended spectrum β-lactamases.

All Gram-negative bacteria were screened for the presence of Ampicillin resistant (AmpC) β- lactamase enzyme using Disk antagonism test. Out of (34) Gram-negative isolates 11(32.4%) were found to be AmpC β- lactamase producers.

All Gram-negative bacteria were screened for their ability to produce Metallo β-lactamase enzyme using Imipenem-EDTA (Imipenem-Ethylene diamine tetra acetic acid) combined disc test. Out of (34) Gram-negative bacterial isolates, 23 (67.6%) were found to be Metallo- β-lactamase producers.

Among all screened Gram-negative bacterial isolates for their ability to produce (extended spectrum β-lactamase, AmpC and metallo β-lactamase) enzymes the results revealed that most of isolates produce more than one type of β-lactamase enzymes, for example *Pseudomonas aeruginosa* isolates, 9 (81.8%) were extended spectrum β-lactamase producers, 3 (27.3%) were AmpC β-lactamase producers and 7 (63.6%) were Metallo- β-lactamase producers.

The Levels of Interleukin-1 Beta, Interleukin-1Recepter Antagonist,Neopterin & AnticytomegalovirusIgg in Patients with Type2Diabetes Mellitus

Name: Pinar Khalid Khudhur
Degree: M.Sc.
Specialty: Microbiology
Date of the debate: 2014
Supervisor: Asst. Professor.Saeed K. Hussain

Abstract

Diabetes mellitus is a complex of metabolic and endocrine disorder characterized by hyperglycemia resulting from defects of insulin secretion, insulin action or both. In the present study we assess the levels of some inflammatory, anti-inflammatory cytokines and inflammatory marker in patients (Type 2 diabetic mellitus), patient control [(a) diabetic hypertensive, (b) diabetic with ischemic heart diseases] by measuring serum cytokine concentration of Interleukin-1beta, soluble interleukin-1receptor antagonist and neopterin as inflammatory marker, then correlate them with different metabolic and non-metabolic parameters. The study was carried out during the period from January 2013 to June 2013. Three groups enrolled included 71Patients (type 2 diabetic patients), patient control (36 diabetic hypertensive, 24 diabetic with ischemic heart diseases), and healthy control (49 healthy non-diabetic subjects). Their age ranged between 25 to >60 years (♂100 & ♀80). The sera were collected from patients and control groups, then subjected to different tests. Assessed parameters were cytokines including Interleukin-1beta, Interleukin-1receptor antagonist. The sera was also assessed for the presence of antibody against cytomegalovirus (anti-CMV IgG). In addition, the sera was tested for the presence of an inflammatory marker called neopterin.

A statistically highly significant differences found among and between patient diabetic groups and healthy control ($P \leq 0.0001$) for the mean of IL-1β cytokine. The same result holds true for IL-1RN ($P \leq 0.0006$). However, no significant difference was seen for IL-1RN when the mean was compared between patient diabetic groups and Healthy control, and between patients and diabetic hypertensive patients ($P > 0.05$).

The mean level of inflammatory marker neopterin revealed no statistical differences among and between patient diabetic groups and healthy control ($p > 0.05$) except patients (T2DM) versus patient diabetic with IHD, a significant difference was observed ($P = 0.03$). Nevertheless, the frequencies of positive neopterin level above cutoff in patients (T2DM) and patient control were positive in (94.4%) patients (T2DM), (70.8%), diabetic with ischemic heart diseases and in (94.4%) diabetic hypertensive.

In patients, IL-1β and IL-1RN mean level according to HbA1c range as marker for glycemic control revealed no statistical difference ($P > 0.05$). In patients, IL-1β mean serum levels according to BMI<25 and >25 Kg/m² revealed a highly significant differences when compared with healthy control ($P = 0.01\text{-}0.005$) except for BMI>35. In patients, neither gender nor duration of disease affect mean concentration of IL-1β and IL-1RN ($P > 0.05$).

Seroprevalence of anti-CMV IgG in diabetic and healthy control were 94%, 100%, 93% and 93% in patients (T2DM), diabetic with IHD, diabetic hypertensive and healthy control respectively. In patients, HbA1c mean percentage between anti-CMV IgG seropositive and seronegative

showed a highly significant difference ($P<0.004$); with neopterin positive level above cutoff detected in (94.4%) of patients.
A highly significant correlation found between anti-CMV IgG and neopterin level ($r=0.672$, $P<0.000$).
Significant correlation detected between age and duration of disease ($r=0.360$, $P<0.002$), age and RBS($r=0.260$, $P<0.02$). Weak and negative correlation observed between IL-1β and duration of diseases($r=-0.127$, $P>0.29$), and there was negative with weak correlation between RBS ($r=-0.11$, $P>0.358$); neopterin and BMI ($r=-0.106$, $P>0.380$).

Hypolipidemic Efficacy of Trigonella Foenum Seeds in Comparison with Rosuvastatin and Fenofibrate in Hyperlipidemic Rats

Name: Lana Abdulbaki Hameed
Degree: M.Sc.
Specialty: Pharmacology
Date of the debate: 2014
Supervisor: Professor. Kawa F. Dizaye

Abstract

Background: Trigonella foenum-graecum (Fenugreek), an annual medicinal plant of the Fabaceae family is well documented for its pharmacological properties. Fenugreek seeds have been historically used for the treatment of various chronic human diseases and studies concerned with application of fenugreek seeds in diabetes and dyslipidemia support this hypothesis. The present study was designed to evaluate and compare the effect of different doses of Trigonella foenumgraecum seeds with rosuvastatin and fenofibrate on lipid profile, liver function enzymes, body weight and malondialdehyde (MDA) in hyperlipidemic rats.

Method: Forty two rats were divided into two groups. First group included 12 rats and received standard diet throughout the experimental period and were subdivided into two subgroups of 6 rats each. The first subgroup served as a control group. The second subgroup received a standard diet containing Trigonella foenum graecum powders at a concentration of 0.75% (w/w).

The second group included 30 induced hyperlipidemic rats by feeding them with high cholesterol diet. They were subdivided into five subgroups of each 6 rats. First subgroup served as a positive control (hyperlipidemic rats). The second subgroup received atherogenic diet containing Trigonella foenum graecum seeds powder at a concentration of 0.50% w/w every day, the third subgroup received the same diet containing Trigonella foenum seeds powder at a higher concentration of 0.75% w/w every day. The fourth and fifth subgroups received a daily dose of Rosuvastatin (10 mg/kg) and Fenofibrate (30 mg/kg) respectively. At the end of treatment period (six weeks) all of these groups were subjected to various biochemical analysis of blood.

Results: After six weeks of therapy, Trigonella foenum graecum seeds powder of both concentrations (0.50% and 0.75% w/w) significantly reduced serum low density lipoprotein cholesterol (LDL-C), total cholesterol (TC) when compared with hyperlipidemic rats. Both concentrations of Trigonella foenum graecum seeds (0.50%, 0.75% w/w) increased serum high density lipoprotein cholesterol (HDL-C)

significantly for both normal and hyperlipidemic rats. Daily administration of Rosuvastatin of (10mg/kg) for six weeks reduced serum TC, LDL-C and triglycerides (TG) level significantly when compared with hyperlipidemic rats. Administration of Fenofibrate at a dose (30 mg/kg) for six weeks markedly and significantly reduced serum TG when compared with hyperlipidemic animals. Daily uses of Trigonella foenum graecum seeds powder (0.75% w/w) for six weeks increased both serum aspartate aminotransferase (AST) and alanine aminotransferase (ALT) significantly for both normal and hyperlipidemic rats.

Daily administration of Trigonella foenum graecum seeds powder of both concentration (0.50% and 0.75% w/w) significantly decreased serum MDA level of hyperlipidemic rats. There was a significant increase in body weight of normal rats taking diets containing Trigonella foenum graecum seeds for six weeks.

Conclusion:

Trigonella foenum graecum seeds have similar efficacy of Rosuvastatin and Fenofibrate in reducing TC. Whereas, plant seeds powder was non significantly more effective than Rosuvastatin and Fenofibrate in changing serum HDL-C and LDL-C.

Fenofibrate and Rosuvastatin significantly increased serum alkaline phosphatase (ALP), while Trigonella foenum graecum seeds significantly decreased ALP for hyperlipidemic rats.

Rats received Trigonella foenum graecum (0.50% and 0.75 % w/w) along with hyperlipidemic diet for 6 weeks exhibited significant decrease in malondialdehyde level when compared to rats received hyperlipidemic diet only. A significant increase in the body weight of rats treated with the plant seeds has been observed when compared with non treated rats.

Female Sexual Events Referred To Medico Legal Institute in Erbil

Name: Dilman Azad Hassan
Degree: M.Sc.
Specialty: Forensic Medicine
Date of the debate: 2014
Supervisor: Assistant Professor.Yasin Kareem Amin

Abstract

Background: Sexual violence is a critical global issue that affects millions of people worldwide, claiming a victim every 45 seconds according to the American Medical Association, and it is a major public health and social problem spread beyond the boundaries of social and cultural rights. In fact, SA survivors suffer from the effects of the attack for a lifetime. One of the key aspects of practitionersworking with individuals, families and communities affected by the SA is to understand the background and the nature and extent of the problem; considerations as well as the importance of forensic medicine and support services.

Objective: The aims of the study: 1-to investigate loss of the virginity during sexual events, 2- determine the time of injury to hymen (new or old defloration), 3-recognize the prevalence of anal injury during sexual assault.

Patients and Methods: This study is a prospective study only, it include cases of rape, newly married and trauma (fall from height or on sharp objects, and traffic accidents). That were received by medico legal institute at Rizgary teaching hospital in Erbil governorate during the period of 1st December 2013 to 1st July 2014. It includes a total 110 cases.

Results: These cases divided into three groups: raped 50 cases 45%, traumatic 30 cases 27%, and married 30 cases 27%, In raped cases the age is ranged from (2-35) years old, and the mean of the age (17.44±6.42), among raped cases most of them with no trauma to body (76%), no use of force and weapon (64%), with consensual sexual act but regarded as raped case because they are under 18 years old. And the most common site for tear in the hymen is at 6 o'clock (i.e.) the postero inferior area of the vagina. Regarding the duration of the tear in raped cases (32%) is new tear while II

for traumatic is (70%), and for married is (60%). For the type of sexual act the most common route is both anal and vaginal which is (58%).regarding frequency of anal injury in sodomy cases (56%) of them have anal injury(dilated or funnel shape) but dilation with tear is about (2%).

Conclusion: we concluded from this study that how the duration and location of the tear in the hymen is important for the diagnosing cases of

rapes and trauma.

Immunoexpressions of Ki-67 and P53 Proteins in Trophoblastic Diseases

Name: Sanarya M. Ali
Degree: M.Sc.
Specialty: Pathology
Date of the debate: 14-5-2015
Supervisor: Nadia Yassoub Ahmed

Abstract

Hydatidiform mole is an abnormal gestation characterized by trophoblastic hyperplasia and overgrowth of placental villi. Distinction of hydatidiform mole from nonmolar specimens and subclassification of hydatidiform moles as complete hydatidiform mole and partial hydatidiform mole, are important for clinical practice and investigational studies; but despite well-described histopathologic criteria, the distinction of abortion from hydatidiform mole and complete hydatidiform mole from partial hydatidiform mole remains a problem because of interobserver and intraobserver variability. The aim of this study was to evaluate the value of two immunohistochemical markers (Ki-67 & p53) in the differential diagnosis of subgroups of lesions of villous trophoblasts and abortions.

Immunohistochemistry using Ki-67 and p53 antibodies was performed on formalin-fixed paraffin-embedded samples of 1st trimester abortion (n = 15), partial hydatidiform mole (n = 24), complete hydatidiform mole (n = 24), choriocarcinoma (n = 3) and full term placentas (n=5). The Ki-67 and p53 labeling index & distribution index for villous cytotrophoblasts, syncytiotrophoblasts and stromal cells were evaluated separately. Statistical analysis was carried out by Fisher's exact test. Statistical significance was determined with value < 0.05. The highest level of Ki-67 and p53 labeling index was found in cytotrophoblasts of abortions & all villous trophoblastic diseases. In comparison with Ki-67 & p53 labeling index of 1st trimester abortion (control group), all villous trophoblastic lesions showed a higher Ki-67 & p53 labeling index of all villous components especially cytotrophoblasts , being the highest in choriocarcinoma followed by complete hydatidiform mole & partial hydatidiform mole. Also we found a statistically significant differences in immunoexpressions of Ki-67 and p53 that were useful in separating abortion from complete hydatidiform mole and partial hydatidiform mole also between complete hydatidiform mole and partial hydatidiform mole; but not useful in separating between choriocarcinoma with complete hydatidiform mole and partial hydatidiform mole. Finally there was no statistical association between Ki-67 and p53 immunoexpression of cytotrophoblasts in all partial hydatidiform mole, complete hydatidiform mole & choriocarcinoma.

Postmortem Diagnosis of Myocardial Infarction in Sudden Death by Correlation of Serum Cardiac Biomarkers and Histopathological Study in Erbil

Name: Hawre Dlzar Abdulrahman
Degree: M.Sc.
Specialty: Forensic Medicine
Date of the debate: 4-2-2015
Supervisor: Assistant Professor. Salah Abubakr Ali

Abstract

Background: Serum cardiac troponin (cTnI) and creatinine kinase- MB (CK-MB) levels are now widely used in the diagnosis of myocardial infarct (MI) and injury in living patients, but their utility in postmortem diagnosis has not been established.

Objective: Determination the specificity of the cTnI and CK-MB assay by using peripheral and pericardial blood samples compared with microscopic cardiac pathology for diagnosis of myocardial infarction in sudden deaths, and to find out whether it is practical and significant enough to estimate post-mortem interval by analyzing quantitatively the pericardial enzyme activity changes.

Materials and Methods: during the period from September 2013-July 2014 all cases of sudden death due to possible myocardial infarction (MI) that were received by Forensic institute at Rizgary teaching hospital in Erbil governorate, were investigated for possible underlying MI because of their sudden and unexpected death by histopathological examination and cardiac enzymes. In addition 17 cases of sudden death due to non-cardiac causes were involved as control group.

Results: The cases comprised 49 (92%) males and 4 (8%) females, with ages ranged from 18 to 92 years and the mean age of cases was 48.5 $\pm$ 18.5 years. These cases divided into two main groups, those who died due to MI (36) cases and there were 24 cases had (acute MI) group A, 12 cases had (old MI) group B, and the other 17 cases who died due to other cause than MI group C control group. The highest level of cTnI in all three groups was in group A. While for CK-MB the highest level of was in group A. The sensitivity of cTnI is 94% (34/36) which is acceptable and the specificity for diagnosing of MI is 88% (15/17). While the sensitivity and specificity of CK-MB in which the result of the sensitivity is 86% (31/36) and the specificity of it is 82% (14/17). And also there was a strong positive correlation between CTnI and CK-MB, $r = 0.662$, $n=36$, $p<0.0001$. Postmortem interval correlate with cTnI level and CK-MB level by using Pearson correlations. (r) There was positive correlation between time interval and cTnI level($r= 0.164$, $n=36$, $p=0.340$) and there was also correlation between time interval and CK-MB level ($r= 0.301$, $n=36$, $p= 0.075$)

Conclusion: evaluation of the biocardiac enzymes of cTnI and CK- MB represents a highly sensitive and specific marker of myocardial lesion in postm

Medicolegal Study of Causes of Death in Burn Cases

Name: Banaz Nuri Saleh
Degree: M.Sc.
Specialty: Forensic Medicine
Date of the debate: 10-2-2015
Supervisor: Assistant Professor. Yasin Kareem Amin

Abstract

Background: Burns represent an extremely stressful experience for both the burn victims as well as their families, burn deaths are a major public health crisis worldwide especially in our country. In all societies including developed or developing countries, burns constitute a medical and psychological problem, but also have severe economic and social consequences not only to them, but also to their family and society in general, Burns are the fourth most common cause of death worldwide, following traffic accidents, falls and interpersonal violence.

Objective: The aim of the study to investigate the cause of death in burned victims for medicolegal purpose, study various socio-demographic aspects of deaths due to burns, investigate survival period of victims and its relation with the cause of death.

Materials and methods: This study includes all dead burn cases by heat source which received by medicolegal institute at Rizgary Teaching Hospital in Erbil governorate; It includes all dead burn cases during the study period(1^{st} January 2014-1^{st} June 2014) with the cases of the year (2013), all are 297 cases. Ages, gender, marital state, place of burn, total body surface area of burn, cause of death and survival period were reported.

Results: Twenty two and half percent of cases were died by burn in the total dead cases received by the forensic institute. The majority of victims were between (20-29) years of age group which were 35.35% of victims, this reflecting that young adults were more involved in such type of deaths. Predominance of females which were constitutes 70.7 % of victims. Most of the victims were married that constitute 59% .Most of the victims died at the home and they constitute 85.53%. Most of the victims had (90-100) % of total body surface area involvement and they were 22.89 %. The cause of death in most victims was septicemia in ٤6.8 % of victims, followed by hypovolemic shock in 23.21 % of victims. Among cases of septicemia, the commonest isolated microorganism was pseudomonas which founded in 36 cases that constitute 25.89%. Most of the victims died in the survival periods > 10 days which they were 21.54%, followed by the victims died in the survival periods between (7-8) days which were 17.51 % of victims so. Asphyxia is the most commonest cause in the survival period less than 1 days and they constitute 9.79% of victims, shock predominates in the (1-4) day, Septicemia is common in victims who survive >5 days and this was statistically significant ($P < 0.0001$).

Conclusion: In this study we conclude that most common cause of death in burn victims is septicemia and cause of death varies according to the survival period.

Immunohistochemical Study of P53 & Ki-67 Proteins in Surface Epithelial Tumors of Ovary

Name: Ilham Majeed Rashid
Degree: M.Sc.
Specialty: Pathology
Date of the debate: 8-2-2015
Supervisor: Yusra Abdulkhaliq Qasim

Abstract

Surface epithelial tumors account for about 60% of all ovarian neoplasms and 80-90% of malignant ovarian tumors. Worldwide, ovarian cancer is the sixth most common cancer in women and the seventh most common cause of cancer death. Immunohistochemistry (IHC) is an immunological and biochemical techniques used to identify tissue components by the interaction of target antigens with specific antibodies tagged with a visible label.

The aim of this study is to assess the immunoexpression of both *p53* and *ki-67* in benign, borderline and malignant surface epithelial tumors of the ovary, to evaluate its correlation with clinicopathological parameters and to identify if there is any correlation between these two IHC markers in surface epithelial tumors of the ovary.

Immunohistochemistry using *Ki-67* and *p53* antibodies was performed on total 70 formalin-fixed paraffin-embedded samples, including benign ovarian tumors (n=20), borderline ovarian tumors (n=10) and malignant ovarian tumors (n=30) in addition to (10) samples of non-neoplastic ovarian tissues were included as a negative control.

Statistically all cases were investigated for *p53* and *ki-67* expression, the data were analyzed by using Fisher's exact test.

The age of patients ranged from (20-75) in all studied cases with highest expression of IHC markers (*p53* and *ki-67*) in patients older than 40 years. There was highest immunoexpression of both these IHC markers in surface epithelial tumors than in control groups (non-neoplastic ovarian tissues). The expression of *p53* was (51.4%) in all surface epithelial tumors of ovary and for *ki-67* was (54.3%). We found maximal immunoexpression of both *p53* and *ki-67* in malignant tumors compared to benign and borderline tumors with highly statistical significance. The coexpression of both these IHC markers was found in (80%) of cases with highly significance correlation between these markers suggesting their carcinogenic role. Finally we couldn't found statistical significant correlation between *p53* and *ki-67* with ovarian cancer regarding tumor grade and stage, although there was more frequent immunoexpression in high grade tumor compared with low grade tumors.

Hormonal and Biochemical Changes In Breast Cancer Patients Treated By Cyclophosphamide and Doxorubicin

Name: Nermin Jamal Abdulqadr
Degree: M.Sc.
Specialty: Pharmacology
Date of the debate: 17-6-2015
Supervisor: Dr. Jangi Shawkat Salai

Abstract

Breast cancer is the most common form of cancer among women and it is the second common cause of cancer related mortality. Nowadays with widespread use of adjuvant chemotherapy in early breast cancer, the long term effects of treatment are becoming increasingly important. Cytotoxic chemotherapy may induce changes in menstrual cycle of female patients to variable extends and even may induce amenorrhea which is defines as cessation of menses for at least 3 months during or after chemotherapy.

The aim of this study was to find out the effect of adjuvant Doxorubicin and Cyclophosphamide chemotherapy on ovarian function through estimation of hormonal level and menstrual history, incidence of chemotherapy induced amenorrhea and history of menstrual change, as well as to evaluate effect of adjuvant chemotherapy on biochemical parameter as renal function, liver function and lipid profile.This study was carried out on 30 newly diagnosed premenopausal women with early breast cancer. The following parameters were estimated before and after 4 cycles of chemotherapy, FSH, LH, Estrogen, Progesterone, Renal function test, Liver function test and lipid profile. In addition to a proper menstruation history before and after finishing 4 cycles of chemotherapy another follow up for menstrual history was taken after 6 months.The results of this study showed that after administration of 4 cycles of adjuvant Doxorubicin and Cyclophosphamide chemotherapy the mean level of FSH and LH increased significantly, while Estrogen decreased significantly and Progesterone non-significantly. It was found that chemotherapy induced menstrual changes and 47% of them developed amenorrhea and 33% were suffered from persistent amenorrhea after 6 months. Regarding biochemical parameters the results of current study showed that adjuvant chemotherapy significantly increases LDL level while the changes were non-significant statistically regarding total cholesterol, TG, renal function test (Urea and creatinin), and liver function test (AST, ALT, ALP).

In conclusion it was found that, four cycles of adjuvant Doxorubicin and Cyclophosphamide chemotherapy increased FSH, LH and decreased Estrogen to menopausal level and it induced amenorrhea either permanently or transiently.

Prevalence of Hbv, Hcv, Hiv, Asa And Their Risk Factors Among Infertile Males In Erbil

Name: Faisal Faruq Sadiq Zamzamoki
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the Debate: 10-3-2015
Supervisor: Assistant Professor. Zakarea Abdullah Al-Khayat

Abstrac

Infertility is an important medical and social problem in the world and male factor is responsible for about 15 % to 20%. Variations had been observed in rates and etiology of infertility in terms of gender, sexual history, lifestyle, society and cultural background. Almost 30% of infertile males failed to show any causes of the dysfunction. It is attributed to chronic infections, antisperm antibodies (ASAs) and anatomical malformation as well as to socio environmental and genetic factors. This prospective case control study was carried out between December 2013 to April 2014 in maternity teaching hospital/ *in-vitro* fertilization center, Shayi and Zhyir private clinical laboratory. 150 infertile males which may selected roundomly representing patients group were enrolled in this study. Total of 30 apparently healthy males were selected as a control group they were without any history of infertility problem or of any evidence of clinical disease. Enzyme linked immuno sorbent assay (ELISA) were used to detect the ASAs (in serum and semen); HBV [HBe Ab, HBc Ab (in serum); HBsAg (in serum and semen)]; HCV (in serum) and HIV (in serum). Blood sera and seminal plasma from both infertile patients and fertile healthy males were subjected to assessment of ASAs and viral screen. There was a highly significant difference between infertile male patients and healthy control in seminogram ($P<0.01$). There was a highly statistically significant difference between infertile patients and healthy control in terms of the means of ASAs (in serum and semen) ($P<0.01$). There was a highly statistically significant difference in the of ASAs (in serum and semen) of infertile men with or without HBV and HCV ($P<0.01$). Current study revealed that various factors had been introduced in the pathophysiology of male infertility such as: age, obesity, cigarette smoking, alcohol consumption, blood transfusion, Jaundice and dental history. All associated with increased ASAs levels and incidence of viral screen HBV and HCV such elevation associated with decreased sperm quality, that leading to increase male infertility. In the cigarette smoking and alcohol consumption patients, blood serum and seminal plasma means of concentrations revealed highly significant statistically difference in terms of ASAs ($P<0.01$) and highly statistically significant difference in terms of HBV and HCV ($P<0.01$) than healthy control. The declining of spermiogram was associated with age, patients with age group ≥40 years old had lower semen volume and sperm characteristics. Body mass index (BMI) ≥30 (obese) had worst sperm parameters. It was found a high prevalence for HBV, HCV, while HIV prevalence was found (0%) in infertile males.

Prevalence of Rota Virus Infection and Cryptosporidiosis among Sample of Children in Erbil Governorate

Name: Sally Saeed Azeez
Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 16-6-2015
Supervisor: Assist. Prof. Hadi Mahdi Ahmad Al-Sakee

Abstract

Cryptosporidiosis is a disease caused by obligate intracellular parasites belonging to the genus *Cryptosporidium*. *Cryptosporidium* spp. are a frequent cause of diarrheal disease in human, particularly in children younger than five years old and in immunocompromised individuals such as AIDS patients and individuals with organ transplant. The infection is mostly self-limiting in immunocompetent individuals, while it is life threatening in immunocompromised patients.

Rotavirus is the most common cause of severe diarrhea among infants and young children, nearly every child in the word have been infected with Rotavirus at least once by the age of five. Immunity develops with each infection, so subsequent infections are less severe and adults are rarely affected.

The current study was aimed to explore the prevalence of cryptosporidiosis and Rotavirus infection among children in Erbil in relation to demographic factors and seasonal distribution and to evaluate the efficacy of polymerase chain reaction (PCR) in the diagnosis of cryptosporidiosis in Erbil in comparison with routinely used modified Zeilh-Neelson technique . The study was conducted by collecting fecal samples from 500 children of both sexes who attended Raparin Pediatric Hospital, Nanakali Hospital for blood diseases and rural health centers in Erbil city. Of those children 21 had leukemia. Fifty samples of those were subjected to nested PCR , the samples that selected were from children with gastroenteritis and shown negative reaction for Rotavirus infection.

Two different laboratory techniques were used for detection of Cryptosporidiosis, modified Ziehl-Neelsen stain and PCR.

CerTest Rotavirus was used for qualitative detection of Rotavirus in the stool samples. The infection rate of Cryptosporidiosis was 0 % and 6.0 % by modified Ziehl-Neelsen stain and PCR, respectively. The infection rate was non-significantly higher in males (6.25%) than female (5.55%) and children with age group ≤2 years (11.7 %) were more susceptible to infection. The prevalence of infection was significantly higher among children from rural areas (6.8 %) than those from urban areas (2.8%).

The highest number of cryptosporidiosis was recorded during March and April (9.5%), and was significantly ($P< 0.05$) higher than that detected over January, February, May and June.

The overall prevalence rate of Rotavirus infection in the study groups was 32.0% and was non-significantly higher in males (34.4%) than females (30.0%). Rotavirus infection was significantly ($P< 0.05$) higher among children aged from 1-3

years old (39.3%) than other studied age groups. The infection rate was significantly (P< 0.05) higher among children from urban areas (33.6%) than those from rural areas (24.7%). The highest number of Rota virus infection was observed during January and February (38.6%). The infection rate was significantly (P< 0.05) increased among non-vaccinated children (65.9%) than vaccinated group (14.1%) and was also significantly (P< 0.05) higher among children who received single dose of vaccine (60.4 %) comparing with those received two (55.2 %) or three (14.1 %) doses of vaccine.

Cryptosporidiosis is suggested to be reduced comparing with previous studies that carried out in Erbil and polymerase chain reaction is more sensitive and specific for detection of Cryptosporidiosis.

Rotavirus is a common cause of diarrhea in young children in Erbil, thus it should be considered in the laboratory examination of fecal specimens. Vaccination procedures that applying in Erbil is effective to reduce and even prevent Rota virus infection in young childrCryptosporidiosis is a disease caused by obligate intracellular parasites belonging to the genus *Cryptosporidium*. *Cryptosporidium* spp. are a frequent cause of diarrheal disease in human, particularly in children younger than five years old and in immunocompromised individuals such as AIDS patients and individuals with organ transplant. The infection is mostly self-limiting in immunocompetent individuals, while it is life threatening in immunocompromised patients.

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Two different laboratory techniques were used for detection of Cryptosporidiosis, modified Ziehl-Neelsen stain and PCR.

CerTest Rotavirus was used for qualitative detection of Rotavirus in the stool samples. The infection rate of Cryptosporidiosis was 0 % and 6.0 % by modified Ziehl-Neelsen stain and PCR, respectively. The infection rate was non-significantly higher in males (6.25%) than female (5.55%) and children with age group ≤2 years (11.7 %) were more susceptible to infection. The prevalence of infection was significantly higher among children from rural areas (6.8 %) than those from urban areas (2.8%).

The highest number of cryptosporidiosis was recorded during March and April (9.5%), and was significantly (P< 0.05) higher than that detected over January, February, May and June.

The overall prevalence rate of Rotavirus infection in the study groups was 32.0% and was non-significantly higher in males (34.4%) than females (30.0%). Rotavirus infection was significantly ($P< 0.05$) higher among children aged from 1-3 years old (39.3%) than other studied age groups. The infection rate was significantly ($P< 0.05$) higher among children from urban areas (33.6%) than those from rural areas (24.7%). The highest number of Rota virus infection was observed during January and February (38.6%). The infection rate was significantly ($P< 0.05$) increased among non-vaccinated children (65.9%) than vaccinated group (14.1%) and was also significantly ($P< 0.05$) higher among children who received single dose of vaccine (60.4 %) comparing with those received two (55.2 %) or three (14.1 %) doses of vaccine.

Cryptosporidiosis is suggested to be reduced comparing with previous studies that carried out in Erbil and polymerase chain reaction is more sensitive and specific for detection of Cryptosporidiosis.

Rotavirus is a common cause of diarrhea in young children in Erbil, thus it should be considered in the laboratory examination of fecal specimens. Vaccination procedures that applying in Erbil is effective to reduce and even prevent Rota virus infection in young children.

Prevalence and Factors Associated with Anxiety and Depression in a Sample of University Students in Erbil

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Date of the debate: 3-8-2015
Supervisor: Professor. Namir Ghanim Al-Tawil

Abstract

Mental disorders have been one of the most important concerns for the public health as its prevalence is increasing worldwide and is becoming a global health burden. Most common mental disorders are anxiety and depression, which are common among young adults especially the university students. This study aimed to find out the prevalence of anxiety and depression among a group of university students of medical and non medical colleges in Erbil city and its association with socio-demographic characteristics and risk factors.

A cross sectional study was carried out between October 1, 2013 to March 31, 2015 in Erbil University, the capital of the Iraqi Kurdistan. Using convenience sampling technique, 800 medical students were involved, another 800 non medical students were involved using a stratified sampling method. A structured self administered questionnaire was used to collect the relevant data. A specific scale was adapted and used to asses stressful life events, another one was used to assess the socioeconomic class and a self-screening 'Hospital anxiety and depression scale" tools for anxiety and depression was also used.

The prevalence of anxiety and depression in the studied sample was 19.8% and 25.7% respectively. The prevalence of anxiety among the non medical group (23.4%) was higher than the prevalence (16.1%) among the medical group; while prevalence of depression was 29.9% for nonmedical and 22.3% for the medical group (P <0.001).

The main predictor for anxiety found to be unsatisfied academic performance (OR=4.434, P=0.004).Other main predictor included, female gender (OR=2.811, P<0.001), a bad relationship between parents (OR=4.286, P=0.006) and medium scored stressful life events (OR=2.573, P <0.001). Regarding depression the main predictor was a bad relationship between parents (OR= 4.173, P =0.002), other predictor was female gender (OR= 1.552, P <0.001) and being in the second year of study (OR= 2.834, P= 0.003).

In conclusion, the prevalence of anxiety and depression was high among university students. The prevalence of both disorders was higher among nonmedical than medical student group. It is recommended to increase awareness about mental disorders and social support and to provide mental health services for students in the universities.

Implication of Plasmids in Transformation of Virulence Factors among Uropathogenic Escherichia Coli (Upec) Isolates from Adult Patients

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Date of the debate: 2015
Supervisor: Lecturer. Kamal I. B. Al-Otraqchi

Abstract

Background and objectives: Urinary tract infection is the most common bacterial infection especially among the females, ranging from asymptomatic to sever sepsis. Strains of uropathogemic *E. coli* (UPEC) have evolved a multitude of virulence factors that facilitate bacterial colonization, persistence and growth within the adverse setting of the host urinary tract. This study was designed to find out the plasmid profile pattern, virulence factors and determination the site of genes encoding resistance to antibiotics, biofilm formation, hemolysin production, serum resistance, and adherence ability to performing genetic transformation process.

Methods: This study was carried out during 10th Dec. 2013 to 25th March 2014. A total of two hundered fifty eight urine specimens were collected from adults (184 female and 74 male) aged 18-60 years attending Rezgary Teaching Hospital in Erbil City. Provisional diagnosis of urinary tract infections done by urologist. All urine specimens were obtained by morning mid stream clean-catch and catheterization. Isolated organisms were identified using microscopical, morphological and biochemical tests including Viteck 2 system. The isolates screened for their resistance to sixteen antimicrobial agents. The isolates also tested for their plasmid profile, hemolysin production, biofilm formation, serum resistance, adherence ability, and plasmid amplification. Genetic transformation assay was used to determine the location of genes encoding resistance to these traits. Polymerase chain reaction technique performed for detection of *hly-A* gene.

Results : A high rate of resistance to different classes of antimicrobial agents were observed, multi drug resistant isolates were common and the most effective antimicrobial agent used were Ertapenem and Imipenem with a 97.47% sensitivity. Majority of isolates were ESBL producers and there were no significant difference between ESBL positive isolates using double diffusion method and Viteck 2 system. The plasmid profile of studied *E. coli* using gel electrophoresis revealed that most isolates harbor plasmids of different sizes and numbers. The transformation assay revealed that the genes encoding resistance to AMP, AMC, CRO, GM, TM, CAZ, SXT, ESBL, and biofilm formation were located on plasmid DNA, while those for TZP, CZ, FEP, ETP, IPM, CIP, LEV, FT, hemolysin production, serum resistance, and adherence ability seemed to be located on chromosomal DNA. Also real amplification of plasmid content observed among isolates using 175 ug /ml chloramphemicol in the log phase and the thermosensitive plasmids were not exists in studied bacterial isolates.

Conclusion: Uropathogenic *E. coli* considered the major causative agent of urinary tract infections especially among adult females, majority of these isolates were multi drug resistant and ESBL producers. There was a proportional relationship between biofilm formation and serum resista;nce with antimicrobial resistance.

Possible Role of Toxoplasma Gondii Infection, Cytokines and Inflammatory Markers in Patients with Major Depressive Disorder

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Degree: M.Sc.
Specialty: Medical Microbiology
Date of the debate: 2015
Supervisor: Lecturer .Hawre M. Bakir

Abstract

Background and objectives: Toxoplasma gondii (T.gondii) is a widespread parasite of great importance; human studies have revealed that the latent T. gondii infection is associated with personality changes and neuropsychiatric disorders. This case control study was designed to find out the possible role of T. gondii infection, inflammatory markers, proinflammatory and anti -inflammatory cytokine in patient with history of major depression.

Methods This is a case control study carried out between December 2013 and August 2014, in consultation department in Hawler psychiatric Hospital, 180 patients with history of major depression were enrolled in our study (83 male and 97 female) their age was ranged between 16 years to 70 years old. Ninety healthy volunteers were chosen who had no history of depression were also enrolled as a control. Enzyme Linked Immunosorbent Assay (ELISA), was used to evaluate the presence of anti-Toxoplasma IgM and IgG antibodies. Serum from both depressed patients and control groups were subjected to in vitro assessment of some inflammatory biomarkers and cytokines including high sensitivity C-reactive protein, neopterin, interleukin- 6, and interleukin-10.

Results: There were significant difference between patients with major depressive disorder and control groups in terms of the anti-toxoplasma IgG antibodies, while there were no significant differences between the two groups in term of anti-toxoplasma IgM antibodies. There was highly significant difference between depressed patients and control groups in term of the mean of high sensitivity C-reactive protein, interleukin- 6, neopterin, and interleukin- 10 ($p < 0.01$). There was highly significant differences between anti- Toxoplasma gondii IgG seropositivity and IL-10 level .There were significant differences between male and female patients in term of high sensitivity C-reactive protein, interleukin -10, and neopterin. According to duration of depression there was significant elevation in serum level of IL-6 and IL-10 in patients more than 5 years.

Conclusion: Depressed patients had a significantly higher prevalence of Toxoplasma gondii IgG antibodies than the control group Thus, there might be a causal relationship between toxoplasmosis and the etiology of depression.

Prevalence of Enterobius Vermicularis Infection among Children in Relation to Biochemical Parameters in Erbil City

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Specialty: Medical Microbiology
Date of the debate: 2015
Supervisor: Assist. Prof. Ahmed Akil Khudhair Al-Daoody

Abstract

Background and objectives: Enterobius vermicularis is an intestinal helminthic parasite that cause a gastrointestinal infection called Enterobiasis. Children are more susceptible to infection than adults. The current study was aimed to explore the prevalence of Enterobius vermicularis infection among children in Erbil city in relation to demographic factors and some of blood parameters, also to study effect of the different environments on the eggs viability.

Materials and Methods: A cross sectional and analytical study was conducted among 505 children (3–10 years), randomly selected in primary schools, kindergartens, Orphanage and Raperin Pediatric Hospital in Erbil City. The cellophane tape, stool and blood samples were taken from participants. The Cellophane tape samples were examined microscopically, while stools by direct microscopic examination and formalin-ether concentration method, whereas bloods examined by auto-analyzer and Cobas.

Result: The overall prevalence of Enterobius vermicularis infection was 27.13%, the higher rate of infection was significantly (P=0.0007) recorded in Raperin Pediatric Hospital (40.78%). The infection rate was recorded non-significantly (P=0.371) higher in females (28.85%) than in males (25.31%). Enterobiasis was increased by increasing of family size (P=0.369) and was highly recorded among children with un-employed mothers (P=0.043) (28.87%).The higher rate of Enterobiasis recorded in cold months of study (P=0.0005). Symptoms including pruritus ani and loss of appetite very high significantly associated to Enterobiasis while others were high significantly associated to Enterobiasis. E. vermicularis non-significantly (co-infected only with Giardia lamblia (3.59%) and Entamoeba histolytica (2.05%). The study demonstrated that the mean value of serum total protein and Iron levels were significantly decreased in infected children, while other trace elements levels were non-significantly affected. It was found that high room temperature degree (25–35 °C) was more effective than Dettol solutions for destroying of eggs in which all the eggs died after 8th day of exposure .

Conclusion: The prevalence of Enterobius vermicularis is relatively reduced comparing with previous studies. Serum total protein and iron levels were significantly decreased in Enterobiasis positive group. High room temperature degree was more effective than Dettol solutions for destroying the eggs.

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