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II. BIOMEDICAL SCIENCES

Relation between High Risk HPV E6 and P53 Proteins Expression in Cervical Carcinoma and Their Premalignant Lesions

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Abstract

Background: The carcinogenic effect of the "high-risk" HPVs, as defined by their documented association with invasive carcinomas, is thought to be mediated by two viral oncoprotein, E6 and E7, through their action of inactivating the function of two important cellular tumor suppressor, p53 and pRb. These synergistic effects result in a deregulated cell cycle control and are thus believed to be critically important in HPV-induced carcinogenesis.

Aims: To study the significance of IHC expression of p53 and correlate this expression with the extent of histological abnormalities, the presence or absence of HPV 16/18 E6 protein.

Material & methods: A total of 80 cervical tissue samples were included in this study. All samples were known HPV status by *in situ hybridization* (ISH) technique using high spectrum probe. 70 out of 80 archival tissue biopsy samples comprised a risk group for HPV infection and/or cervical neoplasia; these were selected from the histopathology files of Al-Kadhimiya Teaching Hospital, Al-Ulwiya Teaching Hospital, Al-Yarmouk Hospital, Medical City Department of Teaching Laboratories, and from four private laboratories. The remaining 10 normal postmortem tissue biopsies were obtained from the Institute of Forensic Medicine and considered as control group. Immunohistochemistry was done for detection HPV16/18E6 and p53 proteins.

Results: CIN II/III and ISCC is 5.029 times more likely to be HPV 16/18E6 positive as Condylomatous changes and CIN I (Odds ratio = 5.861). A significant correlation was found between the expression of p53 and the extent of histological abnormality ($p < 0.01$). There was no significant association between high risk HPV 16/18 E6 and p53 overexpression in CINII/III and ISCC ($p > 0.05$).

Pharmacological Effect of Ozonated Water to Treat a Number of Skin Infections from Iraqis' Patients

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Abstract

This study was conducted to investigate the effect of ozonated water on the histological section of the skin taken from the animals treated with ozonated water in different concentrations, the results showed that we can notice many changing difference in their kind according to the concentration used in the treatment.

The last part of this study's including examing the effect of ozonated water at human body when used as therapy agent with different skin hurting, the results showed quick and high respond for this kind of treating through the great recovery of the skin infection during (7-30) days by using the ozonated water in the concentration (20-60) $\mu\text{g/ml}$ which proof the powerful of ozonated water as a new treating way.

Eosinophil Cationic Protein Concentration in Serum and Urine of Patients with *Schistosoma Haematobium* in Balad Rouz Town, Diyala Province

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Abstract

The present study was based on urine examination of 1440 primary school children and 110 households in Balad Rouz town .There was a significant increase in the value of eosinophil cationic protein (ECP (in serum and urine of individuals infected with *Schistosoma haematobium* in comparison with non infected individuals .No significant differences between ECP values of males and females were noted . However, there was a significant decrease in ECP values of patients in age group ≥ 16 years .The study showed a strong correlation between inflammatory cells and intensity of infection on one hand and the increase in value of ECP in infected individuals .No correlation between ECP value and the abnormal cells was noted.

Iron Status as a Predictor of Impaired Growth and Puberty in Kurdish Thalassemia Major Patients

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Abstract

A total of thirty eight homozygous β -thalassemic patients 19 males and 19 females at different stages of the disease were collected at random and ten healthy individuals as a control group during the study period, in order to study the effects of iron status on different hormonal characteristics of these patients. Result indicate that FSH value increased significantly and testosterone level fall in male, but in females with primary amenorrhea, there were significant decrease in LH level and estrogen level and primary hypothyroidism as defined by a high baseline TSH and a low or normal T₄ in children with multi-transfused iron loaded thalassemia in comparison with those of the controls. Iron overload lead to growth retardation or short stature defined by significantly lower GH concentration than those for the normal subjects. We concluded that Patients are at risk for primary hypothyroidism, growth retardation and delayed pubertal stage in multi-transfused thalasseemics.

Epigenetic Differences Arising During the Life Time of Monozygotic Twins.

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Abstract

A random sample of monozygotic twins of old men and women for a long time are studied in Sultanate of Oman and United Arab Emirates. This kind of study is found to be rarely tackled in medical, Biological and psychological studies. (Silventoinen et. Al., 2006) (Poulsen et. al., 2007) This study investigates the continuity of traits for both twins in many individuals. Its also studies the impact of environmental factors on them at different steps of life time (childhood, teenager and aging). These characters include genetical, physiological, and psychological and parapsychology point of view.

The results of long time observation of the samples studied for all life time steps of different traits and different disease show that these twelve identical twins are similar for the begging of life for all the characters studied (weight, length, cloth chosen, style of sleeping, behavior, and other traits). It was also found that the twins are similar up to 98% for these traits before marriage and sometime after marriage for a short time for example twins from pair 77 year old ,they are similar for all characters studied before marriage , while differences between them for many traits started after the twin lived in new environments and and grow older was , also one suffered from heart attack, psychological problem ,while the other in good health.

Results also lead to the conclusion that similarities between identical twins are continuous for long period but started to differ when each one of the twin shifts to new environment after marriage. Besides different environmental factors have an impact on them leading to Epigenetic differences for one twin than the other, which mean that non-genetic factors influenced the expression of genes responsible for a lot of effects and diseases, such factors could cause random genetic mutation or effects. This kind of difference can be identified by studying some diseases such as (Hypertension, Diabetes, Haemorrhids, heart attack and Rheumatism) and the difference in DNA sequences, which can be traced by DNA finger print.

Study of the Serum Leptin Level and Some Iron Status in Anemic Pregnant Women in Erbil Governorate

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Abstract

Leptin is a 16-KD protein hormone, synthesized by adipose tissues and placenta during pregnancy. The early indications that leptin might function in hematopoiesis arose from the cytokine characteristics of leptin and its receptor, the identification of leptin receptors in hematopoietic tissues.

The objectives of the present study are to investigate the effect of iron deficiency anemia on the levels of serum leptin. One hundred and twenty iron deficient, pregnant women at equal number of different gestation periods (40: 1st trimester, 40:2nd trimester, 40: 3rd trimester) were subjected to the study. Their ages were between 15-41 years. They were investigated at Maternity hospital in Arbil governorate from 1st January 2007 to 30th July 2007. Sixty healthy normal pregnant women at equal number of different gestation period were subjected to the study as a control group.

Hemoglobin concentration, red blood cell indices (MCV and MCH), serum ferritin, serum iron, serum TIBC and serum level of leptin were estimated from each subjected women.

The mean values of serum leptin of anemic pregnant women were 20.18 ± 1.702 ng/ml, while the mean value of serum leptin of control (normal) pregnant women was 26.29 ± 3.309 ng/ml.

Statistical analysis revealed that Serum ferritin and serum iron levels were significantly ($P < 0.001$) decreased in iron deficient anemic pregnant women which reached 81.98 ± 6.869 μ g /dl and 21.36 ± 2.946 μ g/l respectively. Serum total iron Binding capacity (TIBC) increased, but not statistically significant. The mean values reached 422.8 ± 16.82 μ g /dl in iron deficient anemic pregnant women.

From the results of the study, it is concluded that there were decreased in serum levels of leptin, iron and ferritin in pregnant anemic women, while total iron binding capacity increased.

Pre Dialysis versus Post Dialysis Some Hematological and Biochemical Parameters Evaluation in Patients with Chronic Kidney Diseases

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Abstract

This study was carried out in the center of dialysis and kidney disease in Hawler teaching hospital, in Erbil city, which include 34 patients with chronic renal failure (20 male and 14 female) whose age range is between 18-63 years receiving hemodialysis twice weekly, to determine the level of some hematological, biochemical parameters and to measure the systolic and diastolic blood pressure in pre and post hemodialysis for each patient. The results indicate non significant increase ($p>0.05$) in hemoglobin concentration, packed cell volume level and white blood cell count and significant increase ($p<0.001$) in red blood cell count in post hemodialysis session when compared with predialysis session. Platelet count decreased significantly ($p<0.01$) in post hemodialysis session. Mean corpuscular volume, mean corpuscular hemoglobin and mean corpuscular hemoglobin concentration decreased non significantly ($p>0.05$) in post hemodialysis session. Significant decrease ($p<0.001$) noticed in serum urea and creatinine level in post hemodialysis session, and significant increase ($p<0.001$) noticed in serum iron, total iron binding capacity and transferrin saturation in post hemodialysis session. Serum calcium and potassium level decreased and serum sodium level was increased nonsignificantly ($p>0.05$) in post hemodialysis session. Systolic and diastolic blood pressure were decreased significantly ($p<0.001$) in post hemodialysis session when compared with pre hemodialysis session.

Detection of B-Thalassemia Mutations by Amplification Refractory Mutation System (ARMS) In Dohuk Governorate/IRAQ

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Abstract

β -thalassemia is a heterogeneous inherited disorder characterized by reduced or absent β - globin gene expression, and it is one of the most common monogenic diseases in humans. Provisional diagnosis of thalassemia syndromes can be based on characteristic clinical manifestations and morphologic red cell abnormalities. Definite diagnosis is confirmed by hemoglobin typing based on the electrophoretic or chromatographic separation of Hb from the blood. Molecular diagnostics has changed the face of clinical laboratories and laboratory medicine. The Amplification Refractory Mutation System (ARMS) is one of the most widely used marker for detection of point mutations in a β -thalassemia. It can be used for screening multiple mutations in one patient. ARMS technology were used in the present study for the detection of the 8 main mutations in Dohuk namely (IVS1-1, IVSII-1, IVS1-5, IVS1-6, Cd5, Cd39, Cd44, and Cd8/9). ARMS were performed sequentially on 76 patients included Hb pathy cases.

The results obtained from sequential tests managed to detect accurately and differentiate between heterozygotes and homozygotes for any of the given mutations. The overall percentage of β -thalassemia was around 92.6 %, the three most common mutations identified were IVSII.1 (28.1 %), followed by Cd44 (14.0%) then Cd39 (13.2%). The other mutations were in lower percentage as follows: Ivy SI-1 (10.7%), IVS1-6 (9.1%), Cd5 (6.6%), Cd8/9 (6.6%), and IVS1-5 (4.1%).

This study may prove to be useful for diagnosis and management of the disease as well as in future genetic consulting program.

A Modified Culture Medium For *In Vitro* Sperm Activation of Oligoasthenozoospermic Patients Using Centrifugation Swim-Up Technique

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Abstract

The aim of the present study was to assess the efficacy of modified culture medium based on Ringer solution in addition to special additives sodium pyruvate and human serum albumin (5% or 10%) which referred as SMART medium (Simple Medium for Assisted Reproductive Techniques; SMART) for *in vitro* sperm activation of oligoasthenozoospermic (OA) patients.

According to outcome of seminal fluid analysis (SFA), fifty OA patients (mean age 31.86 years) with duration of infertility 3-12 years were included in this study. Semen sample was obtained from each patients and macroscopic and microscopic examinations were performed depending on the manual of WHO (1999). Result of sperm parameters pre- and post- activation using SMART and Earl's media and centrifugation swim-up technique were compared and analyzed statistically.

In this study, all sperm parameters for oligoasthenozoospermic patients were enhanced significantly ($P < 0.05$) post-activation *in vitro* using SMART medium and centrifugation swim-up technique when compared to pre-activation. Highly significant ($P < 0.01$) and positive correlations were evaluated for sperm concentration and percentage of sperm grade activity (grade A) among groups of pre- and post-activation. Also, significant differences ($P < 0.05$) in the percentage of normal sperm morphology were noticed between both treated groups.

Our study demonstrates the efficacy of SMART medium as a modified medium for *in vitro* human sperm activation. Further studies are recommended to investigate the correlation between SMART medium and sperm oxidative stress and outcome of artificial insemination husband.

The Inflammatory Markers, Interleukin-6 and C-Reactive Protein in Type 2 Diabetes Mellitus.

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Abstract

Although the main physiological abnormalities are insulin resistance and impaired insulin secretion, the specific determinants of these metabolic defects remain uncertain. The experimental evidences suggest that inflammation may play an intermediary role in pathogenesis, there by linking diabetes with a number of commonly coexisting conditions thought to originate through inflammatory mechanisms, and also suggest that interleukin 6 (IL-6) and C-reactive protein (C-RP), are two sensitive physiological markers of inflammation, that associated with hyperglycemia, insulin resistance, and type 2 DM. Indeed, it recently has been postulated that type 2 DM may represent a disease of the innate immune system, a hypothesis of particular interest because both of these inflammatory biomarkers also are known to predict the development of cardiovascular disease in otherwise healthy populations.

The present study includes measurement of interleukin 6, C-reactive protein, serum glucose, urea, creatinine, lipid profile and glycated hemoglobine (HbA_{1c}) in 150 patients with type2 DM (78 males and 72 females), Who were on oral hypoglycemic agents, in addition to 100 healthy controls (56 males and 44 females).

Depending on the HbA_{1c} diabetic patients were divided into 4 main groups [(<7%), (7-7.9%), (8-8.9%) and (>=9%)] according to National Health for services, (British, 2003).

The result of present study suggest and support a possible role for inflammation in the pathogenesis of type 2DM, in which elevated levels of C-reactive protein and Interleukin-6 predict the development of type 2 Diabetes Mellitus.

Activity And Isoenzymes Of Alkaline Phosphates In Patients With Urinary Schistosomiasis In Balad Rouz Town, Diyala Province

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Abstract

A total of 1550 urine samples from pupils and households in Balad Rouz town, Diyala province, were examined for urinary schistosomiasis during the period from October 2005 till December 2006. the overall percentage of incidence was 2.13%. Serum and urine from all the 33 infected individuals and 25 controls were assayed for the estimation of alkaline phosphatase (ALP) activity. Significant increase in ALP values in both serum and urine of infected individuals was detected. No significant differences in ALP activity were recorded among males and females and among different age groups. Through polyacrylamide gel electrophoresis, ALP isoenzymes revealed three banding patterns which differ from the three zymodemes obtained from control group. This is a cheap, reproducible and rapid method for detection of progressive disease in *Schistosoma haematobium* infection especially in endemic areas.

Survey of Perth's diseases in Dohuk province

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Abstract

Perthes disease has been recognized as a public health problem in Duhok province, Iraqi Kurdistan region, Many aspects of which are not yet clear.

This study was conducted to deal with the importance and effect of various variables which might have influence in perthes disease occurrence such as gender, date, location and season of birth, mother's and father's literacy, parent's consanguinity, defect side, number of children in the family, mother's age group, mother's blood group, family history of perthes disease, type of delivery conducted, geographical distribution, presence of complications, and finally presence of other congenital disabilities.

Non-randomized consecutive 170 samples were collected from the early detection of childhood disabilities center (E.D.C.D.C) Duhok. The population involved was the entire cases of both sexes that attended the centre during the period from 1st .Jan, 1998 to 30th .Dec. 2008 with final diagnosis of perthes. Patients recorded from (E.D.C.D.C.), Duhok were used to collect data about perthes cases.

The results indicated that (41.2%) of perthes cases occur in winter, males mainly suffer (68.8%), left sided affection was more occurring (45.9%), the mother's age group of (26-35 years) had the highest occurrence (58.2%), consanguineous parents constitute (55.3%), deliveries conducted in hospitals (78.2%) constituted significantly the highest rate, illiterate mothers or mothers with zero education (62.4%) were the highest, fathers with zero education were highest (39.4%), the group with no other disabled children within the same family was the highest (87.1%), the highest rate observed was in families having (1-5) children (51.8%), patients with no other disabilities were the highest (87.1%), Duhok city showed the highest incidence (38.2%), patients aged (7-11 years) were the highest (42.9%), & finally mothers with blood group O^{+ve} were the highest (44.1%).