

Conference Abstracts

Plenary Lectures

Anthropometry of Egyptians and its applications

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Anthropometric measurements of human populations are considered basic information for the assessment of physical characteristics of individual and groups within a given society. Health conditions and their interaction with the environment are fundamentals for any planes to improve the quality of life or to correct any deviation in the physique for an individual and community. Usually birth weight and height are routine practice in the majority of countries developed and developing. The growth rate and the attained size are reliable indicators for the living conditions and health service. Anthropometry of the elderly, as well is a practical approach to evaluate their nutritional and health status, directing attention towards terms preserving good prolonged health sharing in the community. Anthropometry of the adult mature sector of the community is as well needed for various important and needed objectives. Beside the biological and health aspect, anthropometry of a human population serves in the production of suitable, easy utilized and optimal products whether clothes, instruments, machines...etc. It was one of the objectives of the NRC to organize and prepare research teams to characterize the Egyptian population anthropometrically. This objective was fulfilled to a reasonable extent as shown in the tables presented.

**Technique and Technology: Guidelines for the Role of
Technology in Medical Science**
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Technology can effectively treat diseases and enormously and very effectively assist in the performance of medical operations, but it cannot treat, or more precisely, personally care for a person. Technology can treat the disease, but cannot care for the patient as person, whereas human (medical) technique can care for and treat the person as patient. In this paper firstly we supportively and positively review some of the major current advances in Technology in relation to Medical Science. Secondly, after a background study in the phenomenology of human technique, we develop suggested guidelines for the role of Technology in Medical Science based on this critical distinction between Technique and Technology.

Key terms: Care, Disease, Medical Operations, Medical Science, Phenomenology, Technique, Technology, Treatment.

Strengthening the Capacity of Research Ethics in Arab World Lessons from National Research Center Workshop, Egypt

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Background: It is important to enhance the capacity of researchers in developing countries to conduct ethically acceptable research involving human participants. Enhancement of the research ethics in Arab countries is very important especially that ethics should respect the culture diversity in this region, which is affected by norms, traditions and religion. Training workshops are one of the most effective means to disseminate the awareness of the principles and regulations of research ethics among researchers and physicians. One such workshop was the "Medical Research Ethics in the Arab World", which was organized by the National Research Center (NRC) Cairo, Egypt in collaboration with a NGO, Arab Society of Medical Research, under the patronage of the Arab League.

Objectives: This paper describes the development, implementation, evaluation, and lessons learnt from this workshop.

Methodology: Need assessment: First, we conducted a needs assessment to identify appropriate content and structure of the training program. A focus group conducted by the Arab society of Medical Research in NRC to assess: Who will participate? , how to contact them? and What are their training needs?. Trainers: six trainers developed the workshop, all of them are certified trainers of the Health Research Ethics Training Initiative in Egypt (HRETIE). Trainees: Seventy two staff members from Egypt, Sudan, Jordan, Syria, Libya and Morocco participated in this 4-day workshop held between Dec 30th 2007 to Jan 2nd 2008. They were physicians, pharmacists, nurses, dentists and biological scientists. Curriculum: The content of the workshop included history and principles of research ethics, what makes clinical research ethical?, informed consent, subject vulnerability, analysis of risks and benefits, roles and functions of research ethics committee (REC) in Arab countries, ethics of animal research, and how to perform ethical review of a clinical research. Activities: The training was in the form of lectures, group work, reviewing research proposals and interactive discussions. Learning materials: CDs were distributed, including the international guidelines of research ethics, articles, presentations and checklists of protocol review.

Results The evaluations showed that 90% of trainees believed that they gained valuable knowledge from the workshop, 95% favored the group work and reviewing research protocols, 100 % enjoyed exchanging the experience between Arab countries.

Conclusion: The training improved participants' knowledge of principles of research ethics, international guidelines and regulations and operations of RECs. It thus provided an opportunity for research ethics capacity development among academic staff in Arab Countries. We believe that the development and implementation of our workshop may serve as a model for teaching and training physicians and researchers in the era of research ethics in the region.

Recommendations: Continuous education is needed, teaching ethics in Arabic language is recommended with a great need for having a law for research ethics in the Arab countries.

Child Health

Thinking About Quality for Health Care

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Few services affect the lives of people so directly and personally as those offered by health care professionals. For this reason, quality has always been a primary concern in the health care field.

Quality now has a direct impact on organizational success. It was found that the same organizational practices that attract and retain customers contribute to more empowered employees, higher revenue, and lower costs. These practices are ongoing processes generally referred to as Total Quality Management (TQM), or continuous quality improvement.

Philosophy of TQM includes Customers standards, Culture quality, and Counting "Measurements". Organizations succeed when they have customers who are willing to use and pay for their services. Higher quality offers an organization two avenues to increasing revenue attracting new customers and charging premium prices to reflect superior quality.

Children and Television

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Television had become an art which shines like a torch of hope in a troubled world. Many would now question whether television has lived up to his grandiose dreams, but most would agree that the scale of those dreams is not misplaced. Television is an enormous and growing presence in the lives of today's, children.

Children spend an average of 3-6 hours per day with TV and other screen media. In 1961, the average age at which children began to watch television was 2.8 years; today it is 9 months. Whether it is infants watching the new 24 hour 'Baby's first TV' channel or teenagers text messaging while they watch tv shows on their ipods, we are technologizing childhood in a way that is unprecedented.

The digital divide used to separate rich from poor, now it separates parents from their children. Adults are often clueless about the media-saturated world their children inhabit and pediatricians have been accused of being clueless too. This article will attempt to summarize a few of the major effects television is believed to have on children across the age span.

Using of Non-Antibiotics Supplementation (Probiotics, Prebiotics, and Synbiotics) Is Safer For Human Health

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Advances effect of antibiotics residues on human health:

Immune system vital organs, Fetal development, Male Fertility, carcinogenic, Overall live cost, reduced productivity and economy

Types of non-antibiotics supplementation

Probiotics: is a live microbial supplement that beneficially affects the host animal by improving its intestinal microbial balance

Prebiotics, is a nondigestible that beneficially affects the host by selectively stimulating the growth, activity, or both one or a limited number of bacterial species already resident in the intestine

Synbiotics, The live microbial addition (probiotics) may be used in conjunction with specific substrates (prebiotics) for growth

Benefits and importance of non-antibiotics supplementation

Acute Gastroenteritis in Children: Role of Synbiotic

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Diarrheal disorders in childhood account for 18% of childhood deaths. The World Health Organization (WHO) suspects that there are > 700 million episodes of diarrhea annually in children less than 5yr of age in developing countries. While global mortality may be declining, the overall incidence of diarrhea remains unchanged at about 3.2 episodes per child / year. Rotavirus infections account for at least 35% of severe fatal watery diarrhea episodes.

Early repeated episodes of childhood diarrhea during periods of critical development, especially when associated with malnutrition, co- infection and anemia may have long term effects on linear growth, physical and cognitive functions.

The broad principles of management of acute gastro- enteritis in children include oral rehydration therapy enteral feeding and diet selection, zinc supplementation and additional therapy as the combined utilization of prebiotics & probiotics (synbiotics). Probiotics favorably affect the host by total and/ or immune- modulation pathways. In the gut, the probiotics agents compete with pathogens for nutrients. They produce bacteriocins which act as local antibiotics against pathogens. They also produce lactic and acetic acids that can inhibit pathogen growth by lowering luminal pH. These mechanisms contribute to both prophylactic and therapeutic management of acute infectious diarrhea in children decreasing its incidence and duration.

Food Allergy

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Adverse reactions to food are any abnormal clinical response attributed to ingestion, contact or inhalation of any food, a food derivative or a food additive. They can be toxic or non-toxic, the latter can be allergic (IgE and non-IgE mediated) or non-allergic. Any food may cause a food allergic reaction.

The prevalence of food allergy is greatest in the first few years of life and declines over the first decade. Children with atopic disease are more likely to have food allergies. Children developing IgE-mediated food allergies may be sensitized by food allergens penetrating the G.I. barriers, Class 1 food allergens, or by partially homologous allergens, such as plant pollens, penetrating the respiratory tract, class 2 food allergens. Any food may cause class 1 food allergies, but egg, milk, peanuts, nuts, fish, soy and wheat account for about 90 % of food allergy up to the teenage years. IgE-mediated food-related disorders can be manifested in the skin as acute urticaria and angioedema, in the gastrointestinal tract as oral allergy syndrome (OAS) which is a form of contact urticaria confined to the lips and oropharynx, and most commonly occurs in patients with allergic pollenosis, in the respiratory tract as allergic rhino-conjunctivitis and asthma; following food challenge testing, however, respiratory symptoms in the absence of skin or gastrointestinal symptoms are rare. It can be manifested as anaphylaxis as food allergy is one of the most common causes of anaphylaxis: in addition to gastrointestinal symptoms, individuals may experience urticaria, angioedema, asthma, rhinitis, conjunctivitis, hypotension, shock and cardiac arrhythmias, caused by the massive release of mediators from mast cells and

basophils. Non-IgE-mediated food allergic disorders (some appear to be T-cell-mediated) can be manifested in the gastrointestinal tract as dietary protein enterocolitis syndrome, dietary protein proctocolitis, dietary protein enteropathy and coeliac disease. In the skin as dermatitis herpetiformis and in the respiratory system as food induced pulmonary haemosiderosis (Heiner's Syndrome).

The diagnosis of food allergy is based upon thorough history, physical examination, and diagnostic testing, followed by food challenge and elimination diet. Diagnostic testing includes allergy skin testing (prick, scratch and intradermal) and estimation of serum specific IgE.

Managing the patient with food allergy includes non-pharmacologic management: strict avoidance of the offending food allergen(s) is the only proven therapy.

Symptomatic reactivity to food allergens is often lost over time, except for: peanuts, tree nuts, fish and shellfish, and pharmacologic management: epinephrine is the treatment of choice for severe reactions to food. Less severe reactions (usually localized skin or gastro-intestinal symptoms) may be treated with oral antihistamines.

Keywords: Food allergy, IgE-mediated, class I food allergens, class II food allergens, non-IgE-mediated, urticaria, anaphylaxis, skin testing, serum IgE, epinephrine, antihistamines.

Is Balanced Diet have an Effect on Epileptic Children and Adolescents

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Background/Objectives: There are many potential causes of seizures. Those related to nutrition are hunger, hypoglycemia, hypocalcemia, nutritional imbalances, alcohol intoxication and alcohol withdrawal. It is essential to try to remove these possible problems. This work aims to study the effect of balanced diet with antiepileptic drugs on the cognitive functions, growth measurements, and some biochemical changes.

Subjects & Methods: This study was carried on 100 epileptic children and adolescents of both sexes, their ages ranged between 11 up to 14 years. All cases were grouped into two groups, 50 cases were under special balanced diet program (Group I), and 50 cases were left on their regular diet (Group II). All cases of both groups were subjected to complete general & neurological examination, as well as some anthropometric measurement (weight, height and body mass index "BMI"). Psychometric studies for behavior using Revised Behavior Problem Checklist (RBPC). Biochemical assessment for serum calcium, zinc, copper, and hemoglobin were done.

Results: A significant increase was noticed in conduct disorders, socialized aggression and anxiety withdrawn scale in epileptic adolescents of group II compared to scores achieved by patients of group I. A significance difference was found between both groups with higher frequency in group I regarding distractability & restlessness while regarding the psychomotor retardation & depression group II showed higher frequency in comparison to patients of group I. Patients of group II shows highly significant decrease in levels of hemoglobin, copper, zinc & calcium (10.49 ± 0.79 g/dl., 104.25 ± 5.67 µg/dl., 90.2 ± 2.15 µg/dl., and 2.01 ± 0.02) respectively, in comparison to patients of group I (11.72 ± 0.65 g/dl., 109.4 ± 6.05 µg/dl., 96.2 ± 3.08 µg/dl., and 2.63 ± 0.05) respectively. A highly significant increase is noticed in weight and BMI in patients of group I (56.45 ± 4.5 Kg., 24.8 ± 2.03 Kg./m²), as compared to patients of group II (49.63 ± 2.3 Kg., 20.04 ± 1.9 Kg./m²).

Conclusion: Children and adolescents with epilepsy are often more sensitive to the world around them than others, therefore it is important to ensure that their nutrition is as well balanced as possible, for better life and better effect for antiepileptic drugs.

Keywords: Epilepsy, Nutrition, Cognition.

Metabolic Syndrome: A Reality in Obese Children and Adolescents

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Background/Aim: The aim of the present study is to contribute to the understanding of metabolic syndrome (MS) risk factors during childhood by examining the diagnostic patterns of MS in obese children.

Patients and Methods: thirty one obese children and adolescents with BMI \geq 95th percentile were recruited and investigated as group I, in addition to 22 matched age and sex children and adolescent were served as control group II. Anthropometric measurements as well as blood pressure were measured. Plasma cortisol, ACTH and suppression test were assessed in all patients. Fasting plasma glucose, insulin, C peptide and lipids profile in addition to glucose tolerance test were analyzed. The metabolic syndrome in children was classified according to modified version of the National Cholesterol Education Program's Adult Treatment Panel III (NCEP-ATP III). The degree of insulin resistance was determined with the use of a homeostatic model assessment: insulin resistance.

Results: Out of the 31 patients assessed, 25.8% of the patients met the diagnostic criteria of metabolic syndrome. Forty percentage of the females and 6.25% of the males had 3 or more risk factors. No one of the non-obese control subject met the criteria for the metabolic syndrome.

Conclusions: Metabolic syndrome is already a reality for many children. Furthermore, there is an urgent need for a clinically useful consensus definition of pediatric metabolic syndrome and national guidelines for proper screening, evaluation and treatment of children at risk for metabolic syndrome.

Key words: obesity, metabolic syndrome, insulin resistance, HOMA-IR.

Psychological Health of Mothers Caring For Mentally Disabled Children in Qatar: A Comparative Study

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Objective: The study aimed to compare the prevalence of psychiatric morbidity among mothers of mentally disabled children and mothers of non-disabled children and to identify the determinants associated with psychiatric morbidity.

Material & Methods: A comparative cross-sectional study was conducted in Qatar during 2005 to compare prevalence of psychiatric morbidity by using GHQ-12 among 195 mothers of mentally disabled children selected as a study group and 139 mothers with non-disabled children as a control group.

Results: The prevalence of psychiatric morbidity was higher among mothers caring for mentally disabled children than mothers of non-disabled children in the control group. The study found the following predictors for developing psychiatric morbidity: having more than one disabled child, mentally disabled child less than five years of age, disabled child is first in order of birth, presence of chronic illness beside the mental disability, and presence of other type of disability besides the mental one, while educating mothers in caring for disabled child has a protective effect on developing psychiatric morbidity.

Conclusion: Mothers of mentally disabled children have poorer psychological health than mothers of non-disabled children. Shifting the rehabilitation services from child centred to family centred services through providing supportive services was recommended.

***Maternal Fetal Medicine
and Prenatal Diagnosis***

Introduction to Maternal Fetal Medicine and Genetic Disorders Course

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Background: Most women seek consultation and care by specialist in the field of maternal and fetal medicine because she is considering becoming pregnant or already pregnant and worried about pregnancy or fetal complications. Hence, prenatal diagnosis has become an important tool in obstetrics and perinatal care. The rapid advances in technology and data transfer have greatly changed the field of perinatology from simple diagnosis into screening and early intervention. These advances included genetic ultrasound (comprehensive U/S fetal examination, 3/4 D evaluation and markers), prenatal maternal and fetal biochemical markers, fetal tissue sampling, and confirmatory cytogenetic and molecular studies.

Goal and Objectives: The PND FM department aims to establish a continuous education material and scientific relation with physicians working in the field of maternal fetal medicine in Egypt, Arab countries, Africa and the Middle East. This includes geneticists, obstetricians, pediatricians and Neonatologists.

Upon completion of the course, attending physicians will be able to understand and demonstrate the following:

- (1) the systemic approach to pregnancy and fetal evaluation
- (2) the common screening techniques (U/S and biochemical)
- (3) the systemic approach to fetal scanning using 2 and 3/4 D technology
- (4) the different techniques of fetal tissue sampling
- (5) the cytogenetic and molecular studies in prenatal diagnosis of abnormalities

The Prevalence of HIV/Aids in Pregnant Sudanese Women

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Objective: The prevalence of HIV/AIDS in the Sudan is 1.6-6.0. With the advent of peace, the disease is expected to be on the rise. The objective of the study is to assess the prevalence of HIV/AIDS in pregnant Sudanese women so as to prevent Mother-to-Child Transmission.

Methods: In a pilot study conducted at antenatal clinics in 5 Sudanese Teaching Hospitals, five teams were trained in the basic skills of counseling, diagnosis and management of HIV/AIDS. Rapid Test (Uni-gold HIV-1/HIV-2), Serodia HIV-1/2, and Western blot (INNP-LIA HIV-1/2 SCORE) tests were used. The prevalence of HIV/AIDS was found to be 0.8%.

This pilot study led to establishment of seven Antenatal clinics for prevention of mother-to-child transmission in different parts of the country. Qualified teams composed of an Obstetrician, Paediatrician, pharmacist, Social worker, Health visitor, midwife, Laboratory Technician and a counselor provided counseling, testing and management for pregnant women and children of HIV-positive mothers.

Results: 57793 pregnant women attended antenatal clinics during the period August 2007-August 2008. Out of these 25941 (44.9%) were counseled; however only 5961 (23.0%) accepted to be tested for HIV. 39 positive cases were found, making the prevalence rate of 0.65%. Patients were managed and the babies were given antiretroviral treatment. Breast feeding was advised.

Conclusions: Although the prevalence of HIV/AIDS is about 1.6-6 % in the country, it is still low in pregnant women. A great effort should be done on Voluntary Counseling and Testing (VCT); and effective preventive measures should be taken.

Prenatal Screening for Preeclampsia Using Maternal Plasma Angiogenic Markers

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Recent work suggests a key role of circulating angiogenic factors in the pathogenesis of preeclampsia. Our objective was to determine whether circulating angiogenic factors are altered early in pregnancy and thus can be used to identify women at risk for subsequent development of preeclampsia. Setting: Prenatal Diagnosis and Fetal Medicine Clinics, NRC, Egypt. Study Design: A case-control study was designed with stored maternal plasma. The study groups consisted of: 15 pregnant women who developed gestational hypertension (GH), 18 pregnant women who developed PE, 33 normotensive pregnant women matched for gestational age and sample storage formed the control group. Demographic and clinical data including age, parity, blood pressure and gestational age were recorded. Gestational age was established on the basis of menstrual date and/or ultrasonographic examination prior to 20 weeks of gestation. Laboratory tests: Samples were examined in duplicate and the mean values of individual samples were used for statistical analysis. Results: Vascular endothelial growth factor and PIGF levels were significantly lower and sEng levels were significantly higher in plasma of women who developed hypertension or PE compared with those in controls. No statistical significance was observed in comparing VEGF or PIGF levels between women who developed GH and those who developed PE. On the other hand statistical significant increase in plasma sEng levels were observed in women who developed PE in comparison with those who developed GH. VEGF at a cutoff value of 31pg/ml yielded a sensitivity of 94.4% & specificity of 78.8%. PIGF at a cutoff value of 49pg/ml yielded a sensitivity of 77.8% & specificity of 89.6%. sEng at a cutoff value of 7ng/ml yielded a sensitivity of 94.4% and a specificity of 89.5%. Conclusion: Circulating levels of PIGF and VEGF decrease and is accompanied by an increase in the level of sEng before the onset of GH or PE. Measurement of these markers may be useful to identify women at risk of hypertensive disorder of pregnancy helping in reducing a large percentage of maternal and perinatal morbidities and mortalities.

QF-PCR for Prenatal Diagnosis of Common Aneuploidies in Egyptian Women

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Introduction: Quantitative fluorescent polymerase chain reaction (QF-PCR) has recently entered the field of prenatal diagnosis to compliment the traditional karyotyping or overcome the need to culture fetal cells, hence to allow rapid diagnosis of some selected chromosomal anomalies. QF-PCR might play a major role and be considered a valid alternative to the full karyotype. Being less expensive, and almost entirely automated, more women could undergo invasive prenatal diagnosis without significant increase in health expenditure. **Methods:** DNA extraction was performed on the fetal cell obtained from 5-10 ml amniotic fluid from 90 samples. A single tube multiplex PCR was carried out by STR markers specific for chromosome 21, 18, 13, X and Y. Four markers used for each chromosome and the addition markers were added to test samples found to be homozygous, or ambiguous result. The karyotypes of all amniotic fluid samples were performed previously by conventional cytogenetic analysis. **Results:** Our results show that 88 (97.8%) were normal and two (1.1%) had trisomy for chromosome 21. One samples were found to have sexually chromosomal abnormality 45,X. Three cases ambiguous results were obtained and the QF-PCR was unclear, addition markers were used to clarify the uninformative results, and also have been confirmed by the cytogenetic analysis. There was no discordance between the results of QF-PCR and cytogenetic analysis in all our cases. **Conclusion:** QF-PCR approach as the current method of choice for rapid aneuploidy testing. QF-PCR was shown to be a reliable and accurate prenatal diagnosis method, that when used as an adjunct to conventional cytogenetics can help reduce the anxiety of the couple concerned.

The Egyptian Experience of Prenatal Diagnosis of Duchenne Muscular Dystrophy and Phenylketonuria

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Introduction: In Egypt, Duchenne Muscular Dystrophy (DMD) and Phenylketonuria (PKU) are among the most common genetic diseases. The incidence of DMD is 1/3500 live male births and of PKU is 1/8000. Various deletions and point mutations in different exons in the dystrophin gene cause DMD. As for PKU over 528 different mutations in the phenylalanine hydrolase gene are responsible for the deficiency of phenylalanine hydroxylase.

Methods: Fifty two pregnant mothers with previous histories of a genetic disorder sought prenatal diagnosis at the prenatal clinic at National Research Center in Egypt (33 mothers with DMD and 19 mothers with PKU). Complete genetic history was taken from the mothers; detailed ultrasound and amniocentesis were performed. DNA was extracted from the amniotic fluid; multiplex PCR and PCR followed by restriction enzyme digestion and direct sequencing were pursued.

Results: Fifteen out of thirty two fetuses with a family history of DMD had deletion mutations in the dystrophin gene. Seven out of nineteen suspected fetuses with PKU were diagnosed to carry a mutation.

Conclusion: Molecular diagnosis of the aminocytes was successful in all cases; it is an important tool for preventive medicine and for providing proper genetic counseling. With the rising awareness of genetic disease and its recurrence risk prenatal diagnosis is becoming an important informative tool for worried mothers.

Preliminary Report on Genetic Amniocentesis: Single Operator Experience

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Aim: To analyze the experience of the Prenatal Diagnosis Clinic with genetic amniocentesis and to determine its procedure related complications rates. Design: Retrospective analysis of case- records from June 2001 to May 2004. Setting: Prenatal Diagnosis Clinic- Prenatal Diagnosis and Fetal Medicine Department- NRC-Cairo- Egypt.

Methods: Data from 469 consecutive women who had genetic amniocentesis were collected. Amniocentesis procedures were performed between 15-18 weeks of gestation, by a single operator. The results from 418 cases who accepted the procedure and followed up were available. The maternal age at time of the procedure ranged between 19-47 years.

Results: Among the 469 referred cases, 89.1% accepted to perform the test. Acceptance rate varied depending on the risk factor for referral. Of these 45% were under 35 years (Group 1) and 55% were in the age range 35-47 years (Group 2). The acceptance rate for amniocentesis was significantly higher in group 2 (93.2%) compared to 84% in group 1. An inherited disorder in a previous pregnancy represented the main motive for referral (28.6%). In term of maternal age, the main indication for referral was an inherited disorder in the family (28.8%) in group 1, and a positive biochemical screen test (32.2%) in group 2. The procedure was performed between the 15th and 16th weeks of gestation in 56% of cases. Multiple needle insertion was recorded in 1.7% of cases. Trans-placental amniocentesis was performed in 9.1% of the cases. Bloody tap occurred in 7 cases. Procedure-related amniotic fluid leakage and vaginal bleeding were reported in 0.5 and 1.7% of cases respectively. Procedure-related fetal loss occurred in 0.2% of cases.

Conclusion: The results suggest that genetic amniocentesis is a safe pre-procedure and demonstrates that procedure-related fetal loss rate is low in our clinic. Such figures should be available to the couple and obstetrician to assist them in their decision making.

Pathology

Oxidative Precipitation of Transthyretin-A Clue to Elucidate Amyloidosis

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Background: Common precipitation of amyloid proteins occurs in amyloidosis such as dementia and prion diseases. The precipitates are characteristically stained with congo red, although it is not yet known why this occurs. We have found a kind of amyloid protein, transthyretin (TTR), S-sulfonated at the residue of cysteine in blood from patients with deficiency of molybdenum cofactor, which is essential to sulfite oxidase. The S-sulfonated TTR was easily stained with Congo red, whereas TTR itself was not. Further, the S-sulfonated TTR slowly made fibrils from precipitates, which is well known as a common characteristic in amyloidosis. It seemed an important clue that S-sulfonation is as starting reaction to induce the precipitation of the protein. Another clue is chinoform (or, clioquinol), which is effective for patients with dementia. The mechanism was assumed that metal ions such as copper and iron involved in oxidative precipitation of the proteins were masked with chinoform. In 1970, I found that in green urine from a patient with subacute myelo-optico-neuropathy called as SMON disease was identified a chelate compound of chinoform with ferric ion. This finding led to the resolution of SMON disease caused by excess dose of chinoform.

Method: We have studied reaction products from TTR and its synthetic octapeptide around the cysteine residue under moderate conditions by mass-spectrometry and estimated the reaction mechanism. Cysteine-S-sulfonic acid as a main product was used to precipitate with protein at the presence of metal ion and/or chinoform.

Results: Cysteine residue of TTR and model peptide was oxidized to cysteine-S-sulfonic acid via dehydroalanine. The synthesized cysteine-S-sulfonic acid made precipitates with albumin, immunoglobulin and TTR in the presence of Fe, Cu or Zn, which chinoform inhibited.

Conclusion: Cysteine-S-sulfonic acid is a good reagent to start with precipitation of protein to amyloidosis. Chinoform will be a leading compound to find remedy.

Metastasis-Related Genes Protein Expression in Colon Carcinoma

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Tumor invasion and metastasis are considered to be the major causes of death in colorectal carcinoma patients. Recent studies have focused on discovery of molecular markers that can help in identifying the patients who have a higher risk of developing an aggressive tumor phenotype or metastases in order to adjust patients' treatment accordingly. This work aimed to study the expression of nm23-H1 and metalloproteinase-2 (MMP-2) proteins in normal mucosa, adenomatous polyps and adenocarcinoma of the colon. Also it aimed to evaluate their expression as prognostic factors against established clinicopathological variables in colon carcinoma.

In this study, nm23-H1 and MMP-2 expression was studied on tissue samples from 10 cases of adenomas and 44 cases of invasive colorectal adenocarcinoma and was correlated with histologic grade, lymph node metastases and clinical stage.

No significant correlation was found between nm23-H1 expression and histologic grade, lymph node metastases, liver metastases or tumor stage. MMP-2 expression was significantly correlated with histologic grade, lymph node-positivity and tumor stage.

In conclusion, Nm23-H1 does not behave as a metastatic suppressor gene in colon carcinoma. In the contrary metalloproteinase was related to established measures of colon tumor aggressiveness, so it may be used as a promising prognostic candidate for colon carcinoma.

Key words: Colon adenoma- Colon carcinoma- Immunohistochemistry- Nm23-H1- Metalloproteinase.

Immunohistochemical Study of iNOS in Peritoneal Tuberculous Granuloma

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Background/Aim: Nitric Oxide (NO) is important in host defense against *Mycobacterium tuberculosis* in rodents, but the presence of high-output NO production in human tuberculosis has been controversial. This work aimed to investigate iNOS expression by peritoneal macrophages in TB peritonitis and to gain insights into the structural properties of peritoneal TB granuloma.

Patients and Methods: Peritoneal biopsies were obtained from 28 undiagnosed cases of ascites and examined histopathologically by H&E stain. Accordingly, specimens proved to be TB peritonitis were then immunohistochemically stained for iNOS, the macrophage marker CD68 and CD3 and CD20 as markers of T and B lymphocytes respectively. Eight control cases of normal peritoneum were included.

Results: TB peritonitis was diagnosed in 16 cases. TB granulomas were found in 9/16 cases (56%) and a diffuse granulomatous reaction was found in the remaining 7/16 cases (44%). Immunoreactivity to iNOS and CD68 were intensely expressed in macrophage rich TB granuloma and in the diffuse granulomatous TB reaction. Most Langhans cells (multinucleated giant cells) showed strong reactivity to both CD68 and iNOS. In TB granuloma, CD3⁺ cells were found at the periphery with few CD20⁺ cells in its center. Control cases showed complete negativity for iNOS, CD3, very small number of CD68 and/or CD20 cells.

Conclusion: In TB peritonitis, an increased local expression of iNOS in granuloma associated macrophages of untreated patients indicating excess NO production in the active stage of this form of Tuberculosis. Further studies are needed to test the therapeutic implications of NO in different forms of TB.

Key words: Peritoneal TB granuloma, immunohistochemistry, iNOS, CD68, CD3.

Efficacy of Some Herbal Preparations as Hepatoprotective Agents

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Background/Aim: In folk medicine, there are many herbal preparations used for their hepatoprotective activities. The aim of the present study was to evaluate the possible protective effects of *Peumus boldus* (leaves), *Cichorium intybus* (root) and *Nigella sativa* (seed) on liver damage induced by CCl₄ in rats.

Material & Methods: One of the most common recipes consists of equal parts (w/w) of decoction of (10% concentration): *Peumus boldus* (leaves), *Cichorium intybus* (root) and *Nigella sativa* (seed) (Recipe 1). *Glycyrrhazia rhizome* (root) replaced *Cichorium intybus* in (Recipe 2) or added to the Recipe 2 to form (Recipe 3). Three groups of normal albino rats were orally administered 1.5 ml / 100 g of Recipe 1 (group1), Recipe 2 (group 2) or Recipe 3 (group3) and the control group (group 4) was given 1.5 ml/ 100 g distilled water daily for 30 successive days. Second set of experiments, three groups of carbon tetrachloride-hepatic damaged rats were given the three recipes in the same above mentioned oral doses 2 weeks before carbon tetrachloride and continued for another 2 weeks after induction of the hepatic damage. A fourth group received CCl₄ for 4 weeks and served as control.

Results: Results for normal groups of rats revealed that Recipe 1, Recipe 2 & Recipe 3 decreased plasma γ -glutamyl transferase (GGT): by -6.1, -26.7, -31.5%; ALT: by -3.8, -13.2, 17.6%; AST: by -5.9, -6.8 -21.5 %; triglycerides: by 1.8, 0, -13%; cholesterol: by -2.4, -1.2, -1.9 % and increased sleeping time : by 0.5, 1.4 and -0.9 %, respectively, vs. control values. The results indicated that there were significant decreases in GGT: (-70, -74.5, -82.0 %); ALT: (-30.1, -36.8, -49.0%); AST: (-9.9, -33.3, -43.8 %); triglycerides: (-11.8, -10.5, -17.0%); cholesterol: (-17.4, -16.4, -24.4%) and sleeping time: (-24.0, -25.1, -37.9 %), respectively, vs. carbon tetrachloride-hepatic damaged rats. Histopathological study revealed that the three recipes exhibited greater hepatoprotective effects in CCl₄-induced liver injury by preventing development of hepatic lesions, include liver centrilobular inflammation, cell necrosis, fatty change, ballooning degeneration as compared to the 4th control group CCl₄-intoxication. As well as there was an improvement of DNA contents.

Conclusion: The administration of *Peumus boldus* (leaves), *Cichorium intybus* (root) and *Nigella sativa* (seed) reduced CCl₄-induced hepatic damage in rats, probably by exerting protective effect against hepatocellular necrosis by its free radical scavenging ability. The modified recipe 3 was found to be more potent than recipe 1 or 2.

Key word: *Peumus boldus*, *Cichorium intybus*, *Nigella sativa*, *Glycyrrhazia rhizome*, rat, hepatoprotective, histopathology.

Histopathological Features of Chronic Hepatitis C in Egyptian Patients

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Background: Chronic liver disease including that caused by the hepatitis C virus progresses in stages. It can range from inflammation, to fibrosis to end stage liver disease or liver cancer.

Objective: To study the histopathological features of chronic hepatitis C infected Egyptian patients followed-up at National Hepatology and Tropical Medicine Research Institute, Cairo, Egypt.

Methods: The study included 4267 liver biopsies from patients with serological and virological diagnosis of chronic HCV with no other identifiable cause for liver disease, signs of hepatic decomposition, or other significant non-hepatic disease. All biopsies were fixed in formalin, embedded in paraffin, and sectioned by microtome with a thickness of 5 μ m. Routine specimen processing involved staining slides with hematoxylin and eosin (5 levels) and Masson's trichrome stain (5 levels), for a total of 10 levels per specimen. All levels were screened by two pathologists to ensure the histological abnormalities. Ishak scoring system was applied for assessment of fibrosis and necroinflammatory injury. The percentage of hepatocytes involved by fatty changes was used to score the grade of steatosis. The relations between the histopathological findings, age and sex of the patients were carried out.

Results: The studied group (n = 4267) involved 3268 males and 999 female, with age ranging from 21 to 60 years and a mean of 41.7 ± 9.7 years. Necroinflammatory activity of the virus was minimal in 17.88%, mild in 56.41%, moderate in 22.24% and severe in 3.47%. No fibrous tissue deposition was seen in 21 patients (0.49%), 27.32% of the patients had portal and periportal fibrous expansion, 27.91% had fibrous extensions with occasional thin fibrous tissue bridge, 36.28% had frequent broad fibrous tissue septa, while 7.99% of the studied group of patients had cirrhosis. Steatosis was absent in 52.45% of cases, mild in 39.75%, moderate in 7.19% and severe in 0.61% of patients. Non-specific granulomatous reaction was detected in 11 liver biopsies (9 males and 2 females). Fibrosis and necroinflammation were more frequent in older patients. No significant difference between males and females regarding fibrosis, but females were more exposed to higher grades of necroinflammation ($p < 0.001$).

Conclusion: Chronic hepatitis C infection is a common and serious health problem that progresses to fibrosis, cirrhosis, liver failure, and hepatocellular carcinoma. Portal lymphoid infiltrate and minor hepatocellular necrosis were present in almost all cases. Necroinflammatory activity was mild in nearly half of the cases. Steatosis was detected in 47.55% of the patients. Fibrosis and necroinflammation were more frequent in older patients. Non-specific granulomas were rarely encountered in association with hepatitis C.

Key words: *Chronic hepatitis C, Hepatitis Activity Index, Hepatic fibrosis, Steatosis, Hepatic granuloma*

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Scaly Scalp in Different Dermatological Diseases: A Scanning and Transmission Electron Microscopical study

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Scanning electron microscope (SEM) and Transmission electron microscope (TEM) examination of the scales in different scaly scalp disorders reveal the importance of alteration in the stratum corneum of the diagnosis of these disorders. Each disease has its own characteristic scale features that are distinguished from other scaly disorders. Specimens from 20 patients with different scaly scalp conditions were randomly taken and examined by both SEM and TEM. Each scaly scalp disorder expressed its characteristic SEM and TEM findings. These findings may pave the way for further understanding of the differences between scaly scalp disorders that may look alike or slightly different in their clinical presentation.

Histological and Histochemical Studies on the effect L -Carnitine and Melatonin Reverse CCl₄ Induced Liver Fibrosis in Rats

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Carbontetrachloride (CCl₄) is closely related chemically to chloroform and likewise in hepatic poisons. This study was designed to evaluate the effects of carbon tetrachloride on liver of male rats and the reversing effects of L-carnitine and melatonin on established liver fibrosis. A total of 72 adult male albino rats were used in this study. The animals were divided into six groups. Group (I) animals of the first group were kept as control and treated with paraffin oil twice weekly for eight weeks. Group (2) rats of the second group were injected with CCl₄ intraperitoneally at 0.15 ml per rats (diluted 1:1 in liquid paraffin) twice weekly for eight weeks to produced liver fibrosis. Group (3) following establishment with CCl₄, which induced liver fibrosis, the rats, were treated with L-carnitine at a dose level of 50 mg/kg for four weeks. Group (4) rats with liver fibrosis were injected intraperitoneally with melatonin at dose level of 10 mg/kg for four weeks. The fifth and sixth groups were given L-carnitine and/or melatonin at a dose level of 50 mg/kg and 10 mg/kg respectively for four weeks.

Histological changes in the liver of rats treated with CCl₄ including liver fibrosis, architecture distortion and appearance of many pseudolobule. The fibrous tissues run in septa between the nodules. The liver damage varied from one area to another and varied from moderate fibrosis to cirrhosis.

Quantitative measurement of the severity of liver fibrosis (area damage) was achieved by using computerized image analysis (Leica image) showed that highly significant increase in area of fibrosis was recorded in the case of rats treated with CCl₄ only.

Quantitative DNA image analysis showed that 3% of aneuploid cells could be noticed in liver of rats treated with CCl₄ only. Histochemical results of rats treated with CCl₄ showed highly significant increase in grey level of mucopolysaccharides and protein levels. No histological and histochemical changes could be noticed in the liver of rats treated with either L-carnitine or melatonin only. Both L-carnitine and melatonin were found to reverse CCl₄ induced liver damage.

Keywords: L-carnitine, melatonin, carbontetrachloride, liver fibrosis, rats, histological, histochemical.

Hormones I

Hydrogen Sulfide (H₂S) – Gaseous Effects on Ion Channels

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Objective: Hydrogen sulfide (H₂S) – a gas that is well known for its peculiar odor and for its toxicity has now been found to be also produced endogenously in cells and to exert physiological functions. H₂S is present in relatively high concentration in the brain and is implicated in the regulation of several neuronal functions such as transmitter or hormone release or vasorelaxation. In the present study we investigated the effects of H₂S on large conductance calcium-activated potassium (BK) channels

Material and Methods: Electrophysiological techniques for membrane current measurements in the whole cell mode and single channel recordings were employed. Experiments were performed using cultured GH3 pituitary tumor cells which express BK channels.

Results: Application of H₂S, produced from NaHS, to the bath solution increased channel activity in a concentration-dependent manner. H₂S induced a reversible increase of open probability (Po) of BK channels by 213±14%. The amplitude of single-channel currents remained unchanged. H₂S enhanced the activity of BK channels in a voltage-dependent manner, however, independent of intracellular Ca²⁺. The H₂S effect was not caused by a change in osmolarity, which is also known to affect BK channel activity. Since the activity of BK channels is regulated by the redox state of critical sulfhydryl groups in the channel protein we used reducing (dithiothreitol, DTT) and oxidizing (thimerosal) agents added to the intrapipette solution. DDT completely prevented the increase of Po by NaHS. In the presence of the oxidizing agent thimerosal the increase of Po by H₂S was more pronounced compared to controls. Application H₂S to the bath solution in whole cell experiments hyperpolarized the membrane potential associated with a decrease of membrane resistance.

Conclusion: Our results show that H₂S increases the activity of BK channels and this effect can be linked to its reducing action on sulfhydryl groups of the channel protein from the cytosolic side of the channel. The data stress H₂S as an important endogenous mediator in cellular regulation which will have implications in pathophysiology and pharmacology.

Ameliorative Effect of Grape Seed Extract against Rotenone-Induced Neurotoxicity in Adult Male Albino Rats

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The present study was investigated the ameliorative effect of oral administration of *Vitis vinifera* (grape seed extract) against neurotoxicity in rats administered with rotenone. Rats were orally administered with grape seed extract (GSE) at a dose of 75 mg/kg body wt. once a day for 20 days before an oral administration of rotenone (2.5 mg/kg body weight.). Dopamine (DA) and Norepinephrine (NE) contents in cerebral cortex, striatum and cerebellum were determined at 40, 55 and 70 days of administration. Also, the striatum Na⁺/K⁺-ATPase activities, serum and striatum nitric oxide (NO), lipid peroxidation, reduced glutathione (GSH), total antioxidant capacity (T.A. Capacity), and serum testosterone level were evaluated. In addition, histopathological study of striatum was examined. The present results revealed that rotenone administration for 50 days led to significant increase in striatum and serum lipid peroxidation and NO level, while, significant decrease in DA in striatum and NE & DA in cortex. Also, striatum Na⁺/K⁺-ATPase activities, serum and striatum GSH, T.A. capacity levels and serum testosterone level were significantly decreased at the end of experiment. The neurotoxic effect of rotenone may be explained by Complex I inhibition, which led to an increase in the formation of reactive oxygen species (ROS), creating oxidative damage in lipids, DNA, and proteins along with decrease levels of GSH. The treatment with GSE showed a good effect against rotenone-induced neurotoxicity where improve the most of specialized biochemical markers as well as histopathological features so it may be possible to use the GSE for the prevention of neurotoxicity caused by exposure to pesticide or environmental neurotoxins in general.

Key words grape seed extract; rotenone; dopamine; norepinephrine; brain; rats

The role of Substance P in learning and memory

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Substance P (SP), an eleven amino acid peptide member of the tachykinin peptide family, which is a group of small neurotransmitters that are involved in a multitude of physiological processes due to their widespread distribution. Substance P is referred to as a tachykinin when describing the nonmammalian peptide, but is designated as a neurokinin when referring to mammalian peptides. Tachykinins function as pain transmitters in the periphery, while centrally, they act as neurotransmitters and neuromodulators in the brain and spinal cord. SP binds to three G-protein coupled receptors, neurokinin (NK) 1,2, and 3, with NK-1R being the receptor with the highest affinity. NK-1 mediates several physiological and pathophysiological responses and pharmacological antagonists of NK-1R have been used so far for treating diverse conditions, such as mood disorders (depression, anxiety and stress), nausea associated with chemotherapy, rheumatoid arthritis, and inflammatory bowel disease. A decreased concentration of substance P, accompanies brain aging in rats, as well as in humans. Substance P promotes memory in normal animals and can counter age related performance deficits. This article summarizes the role of substance P in learning and memory.

Role of cytokines in Alzheimer's disease

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Alzheimer's disease (AD) is neurodegenerative disorder characterized clinically by a progressive cognitive decline and dementia. AD brains are marked by amyloid plaques and neurofibrillary tangles, neuronal cell loss and a prominent activation of glial cells and innate immune responses. A growing number of studies in AD have reported alterations in systemic immune responses including changes in lymphocyte and macrophage distribution and activation, the presence of autoantibodies or abnormal cytokine production. Inflammation is associated with amyloid beta pathology in AD. It has been demonstrated that chronic stimulation of the immune response induces pro-inflammatory cytokines such as IL-1 beta, IFN-gamma and TNF-alpha which contribute to neurodegeneration. Moreover, neuroinflammation involves the contribution to activated microglia, reactive astrocytes and infiltrating inflammatory cells. Stress and various acute or chronic brain injuries stimulate the generation of free radicals and glutamate, triggering inflammatory pathways that lead to increase in chemokines, cytokines and prostaglandin. The cytokines class of inflammatory mediators is secreted by microglia and astrocytes surrounding β -amyloid neuritic plaques in Alzheimer patients.

A Study of Herbs in Ancient Egypt and Their Medical Uses until the End of the New Kingdom

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The interest in herbal remedies has grown steadily in the past decade. This interest has been fuelled by concerns over the growing numbers of antibiotic-resistant micro-organisms which conventional treatments find increasingly difficult to tackle. In the West, people often cite the risk of side effects from powerful orthodox drugs as a reason for turning to gentler, plant medicines. This trend towards more natural medicine has gained added impetus from our growing concern with environmental issues.

Moreover, from ancient times, herbs have played a vital role in the healing traditions of many cultures including the ancient Egypt one.

This research consisted of three chapters.

The first chapter deals with medical texts that were recorded in medical papyri as the most important source of evidence on herbal medicine. The medical papyri represented a most reliable evidence of the diseases of ancient Egypt and provided the prescriptions necessary for the healing of these ailments.

Chapter two analyzes a variety of thirty one herbs that ancient Egyptians employed to cure different diseases and ailments until the New Kingdom. The reason of choosing these particular herbs was essentially because of their popular use throughout the ancient Egyptian history from the Pre-dynastic times till the New Kingdom and their surprisingly constant prominence and extensive use in our modern times.

The third chapter dealt with herbs and cosmetics and it included hair and skin care as well as perfumes and hygiene.

Key words, medical papyri, ancient Egyptian herbs, New Kingdom, herbs and cosmetics.

Physiology I

Negative Impact of Global Warming on Health

“Adaptation”

Overview

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The world's climate appears now to be changing at an unprecedented rate. Shifts in the distribution and behavior of insect and bird species indicate that biological systems are adversely responding to this change. Gases that trap heat in the atmosphere are often called greenhouse gases. The principal greenhouse gases that enter the atmosphere because of human activities are: Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Fluorinated Gases. When the climate changes extremely, this disrupts our natural bodily functions and can lead to sickness and even death. Also, the occurrence of certain diseases depends mainly on our climate. Climate changes will affect, in profoundly adverse ways, some of the most fundamental determinants of health (food, air and water). In addition to the burden of heat, stagnant conditions often develop during heat waves, with pollutants increasing in concentration near the ground and contributing further to public health problems during heat waves. The health sector must be at the forefront on climate change. The elderly population segment is the most vulnerable to the dangers of heat. The greatest number of heat-induced illnesses and fatalities usually peak two days after the maximum heat index values occurred. The most difficult change of all is a change of will. We should not be daunted by the size of the task.

Key words: Climate changes, greenhouse gases, Insect, heat waves, elderly population

Effect of Medical Ozone Therapy on Diabetes-Induced Cardiac Dysfunction

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Background and Aim: Diabetic metabolic dysregulation is accompanied by oxidative stress that could possibly lead to dysfunction in cardiac myocytes. The aim of this study was to elucidate the effect of controlled medical ozone therapy to diabetic rats on ischemia reperfusion insult in isolated rat hearts.

Methods: Both long-term (12 weeks duration) and short-term (20 days duration) treatment were investigated. Rats of each duration were divided into non-diabetic control group and streptozotocin-induced diabetic group, the latter group being further divided into two subgroups, namely, a group receiving medical ozone and the other remaining untreated.

Results: Long-term ozone therapy to diabetic rats improved myocardial depression before and after ischemia reperfusion, with reduction in ischemia reperfusion injury. Short-term therapy resulted in an attenuating effect on neutrophil adherence to coronary vascular endothelial cells after ischemia-reperfusion.

Conclusion: The present data shows the cardioprotective effect of medical ozone therapy on ischemia reperfusion in diabetic rats. The reduction in TNF-alpha and CPK levels at pre-ischemic stage may represent a mechanism for such protection. Prohibiting neutrophil-endothelial adhesion and transmigration may be useful in decreasing neutrophil-dependent post-reperfusion injury.

Key words: Medical ozone therapy; Diabetes mellitus; Ischemia-reperfusion injury; Neutrophil adherence.

Study of Serum Level of Some Trace Elements & Heavy Metals in Non Hodgkin's Lymphoma

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Objective: The purpose of the study was to compare serum concentrations of trace elements (Zinc[Zn], Copper[Cu], Magnesium[Mg] and Selenium[Se]) and non hodgkin's lymphoma patients with those of health subjects.

Methods: The study was conducted in 30 non-Hodgkin's lymphoma patients and 50 age – and gender matched healthy volunteers. Energy dispersive X-ray Flouresence (EDXRF) technique was employed to analyze serum trace elements concentrations.

Results: Zinc recorded in control group (0.097 ± 0.025), in before treatment group (0.054 ± 0.023), and in after-treatment (0.093 ± 0.006). Copper recorded in control group (0.110 ± 0.005), in before treatment group (0.159 ± 0.026), and in after-treatment (0.109 ± 0.008). Magnesium recorded in control group (1.566 ± 0.017), in before treatment group (1.115 ± 0.364), and in after-treatment (1.531 ± 0.049). Selenium recorded in control group (0.197 ± 0.025), in before treatment group (0.097 ± 0.035), and in after-treatment (0.179 ± 0.027). Lead recorded in control group (0.025 ± 0.005), in before treatment group (0.026 ± 0.008), and in after-treatment (0.038 ± 0.050). Mercury recorded in control group (0.327 ± 0.014), in before treatment group (0.293 ± 0.118), and in after-treatment (0.314 ± 0.094).

Key Words: Serum, trace elements, non-Hodgkin's lymphoma

Effects of exercise training and vitamin E on cardiac performance in aged rats

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Background: Aging is characterized by impaired contractile function in the heart. Meanwhile during senescence the hearts faces a high risk of free radical injury which may be a reason for development of myocardial dysfunction in the aged heart.

Aim: Effects of exercise training and vitamin E supplementation for 2 weeks on age-associated cardiac dysfunction were investigated in female Wistar rats.

Methods: Rats were divided into a) control group. B) exercise-trained group C) vitamin E treated group. Isolated hearts were studied in a Langendorff preparation for their intrinsic properties, and their responses to β -adrenergic stimulation. After recovery the isolated hearts were subjected to global ischemia followed by reperfusion.

Results: The results showed that the exercise program adopted showed enhancement of time to peak tension response of aged hearts to β -adrenergic stimulation. Following ischemia/reperfusion (I/R), such program enhanced half relaxation time. Treatment of the aged hearts with vitamin E maintained coronary blood flow & improved the inotropic cardiac reserves. Vitamin E proved to be cardioprotective against the toxic doses of catecholamines as well as the injury of post I/R on the heart. Coronary effluent from hearts of vitamin E – treated rats had the significant highest level of nitrate compared to the other two groups when measured at 3.46 μg dose of isoproterenol and at 30 min of reperfusion.

Conclusion: Vitamin E enhanced cardiac responsiveness to β -adrenergic stimulation, and protected the aged heart against I/R injury. Preservation of NO from being transformed to peroxynitrite by antioxidant action of vitamin E could play a significant role.

Keywords:

Exercise training, Vitamin E supplementation, Cardiac dysfunction, Aged heart, I/R injury.

Carbon Monoxide as an Endogenous Modulator of Synaptic Transmission

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Objective: Carbon monoxide (CO) is endogenous gaseous transmitter which participates in regulation of various cellular processes such as smooth muscle relaxation, regulation of neurotransmitter and neuropeptide release, long-term potentiation. CO is produced by heme oxygenases (HO), which cleave heme into CO and biliverdin. In the present study we investigated the effects of exogenous CO and HO-2 inhibitor ZnPP-IX on transmitter release at the frog neuromuscular junction and we revealed the presence HO-2 in skeletal muscle.

Material and Methods: Experiments were carried out on neuromuscular preparation of frog cutaneous pectoris muscle using microelectrode technique. To examine cellular localization of HO-2 immunohistochemical staining was performed using rabbit anti-HO-2 antibodies.

Results: CO application increases acetylcholine (ACh) release in dose-dependent manner without changes in presynaptic Na^+ and K^+ currents. The effect of CO on ACh release was decreased by prior application of guanylate cyclase inhibitor ODQ and prevented by cGMP analogue 8Br-cGMP. Pretreatment of the preparation with adenylate cyclase inhibitor MDL-12330A completely prevented the CO effect, whereas elevation of intracellular cAMP mimicked and eliminated the CO induced increase of ACh release. Application of cGMP-activated phosphodiesterase-2 inhibitor EHNA did not prevent the CO action, whereas inhibition of cGMP-inhibited phosphodiesterase-3 by quazinson partially blocked the effect of CO. Using immunohistochemical methods we revealed that HO-2 is expressed in skeletal muscle fibers. ZnPP-IX depressed the ACh release suggesting a tonic activating effect of endogenous CO on presynaptic function.

Conclusion: We conclude that facilitating effect of CO on ACh release is mediated by elevation of intracellular cAMP due to activation of adenylate cyclase and decrease of cAMP breakdown. We suggest that endogenous skeletal muscle-derived CO mediates a tonic retrograde up-regulation of neurotransmitter release at the frog neuromuscular junction.

Oro-Dental Medicine

Evaluation of Osseous Response to Bioglass/Dextran Composite in Induced Mandibular Defects: an Experimental Study

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Purpose: This experimental study was made to evaluate the osteogenic potential of Bioglass/dextran composite clinically, radiographically and histologically in induced mandibular bone defects in 12 mongrel dogs and **Materials and Methods:** In the right mandibular side, 1st molar was removed followed by localized alveolectomy then the site was compressed with the composite graft while in the left side, a rectangular defect was surgically induced with dimensions 20 x 10x 5 mm just below the inferior alveolar canal then compressed with the graft material. Both grafted defects were compared with the control animals along intervals 3, 6 and 12 weeks postoperative periods clinically, radiographically, histologically and histomorphometrically.

Results: the current study proved that this composite is bioactive, has high osteogenic potential and could be used effectively in large osseous defects without any adverse inflammatory, allergic or cytotoxic reactions. In addition, this composite could be used in alveolar ridge augmentation procedures as it caused a statistically significant increase in rate and density of bone formation in these defects compared to the control animals.

Conclusion: Bioglass/dextran composite is an effective osteoconductive and osteostimulatory graft material that could be used in large osseous defects and in ridge augmentation procedures especially with the use of barrier membrane.

Key words: bone graft, alloplasts, Bioglass/Dextran composite

A Comparative Study of the Effect of different Irrigating Solutions on Smear Layer Removal of Root Canal Prepared by GT Hand and GT Rotary System

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Background/Aim: to compare the effect of different Irrigating Solutions on Smear Layer Removal of Root Canal Prepared by GT Hand and GT Rotary System.

Materials and methods Forty freshly extracted human permanent, maxillary anterior teeth (incisors and canines) were randomly divided into 2 main groups (20 each) Group "A" and Group "B" according to preparation technique. The samples of each group were then subdivided into 4 subgroups (5 each) according to the irrigating solution used as final rinse as follows: Group (A): Root canals of this group were prepared by GT *hand* files. Group (B): Root canals of this group were prepared by GT *rotary* files. Subgroup1: irrigated with saline during preparation plus final flush with saline in both groups (A and B). Subgroup2: irrigated with 2.6% NaOCl during preparation plus final flush with 17% EDTA. Subgroup3: irrigated with 2.6% NaOCl during preparation plus final flush with MTAD. Subgroup 4: irrigated with 2.6% NaOCl during preparation plus final flush with Ozonated water. All roots were examined under SEM at coronal middle and apical thirds. The data were collected and statistically analyzed using analysis of variance (ANOVA), Duncun's and student's "t" tests with the level of significance set at 1%.

Results: The results revealed that 17% EDTA removed the smear layer at the coronal and middle thirds of the root canal surface with the formation of areas of erosion. At the apical third it was found that EDTA has minimal effect. MTAD removed most of the smear layer at the coronal, middle and even at the apical third of the root canal surface with minimal erosions. Ozonated water failed completely to remove the smear layer at the coronal middle or apical third. The amount of smear layer remained after the use of GT rotary files was less than that remained after the use of GT hand files.

In general the amount of remaining smear layer was more at apical third than the middle third followed by the coronal third.

Conclusion: MTAD showed the least mean amount of remaining smear layer at different thirds of root canal wall (coronal, middle and apical) and showed the highest percentage of open dentinal tubules, followed by EDTA. Smear layer remaining after preparation using rotary files was less than that remaining after reparation using hand files.

The Effect of Complete Mandibular Overdenture Abutment Designs on Denture Supporting Structures

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Background/ Aim: to compare the effect of three different overdentures abutment designs on denture supporting structures.

Materials and Methods: Fifteen male patients having only mandibular canines opposing completely edentulous maxillae were selected. All abutments were endodontically treated. Patients were divided into three. Group I: The abutments were reduced to "3mm" above the gingiva and received coping with short post. Group II: The abutments were reduced to "1mm" above the gingiva and they received coping with short post. Group III: The abutments were amputated and reduced 2mm below the level of alveolar crest.

Clinical evaluations: obtained by measuring gingival crevicular fluid (G.C.F) and pocket depth for group I & II. Radiographic evaluation: carried out by measuring bone height and bone density changes for the three groups.

Results: Clinical evaluations for group I and II showed significant increase in the amount of G.C.F measured in both groups. Pocket depth measurements revealed significant increase both groups. Radiographic evaluation showed bone height loss in the three groups being significantly higher in group III. Regarding bone density, group I and II showed significant gradual increase in bone density. On the other hand, group III "submerged" a decrease in bone density was detected.

Conclusions: 1. using submerged roots did not preserve alveolar bone. 2. Properly prepared abutments provided the most satisfactory results for preservation of alveolar bone. 3. Abutments coping length had no effect on the supporting structures except G.C.F which showed only slight increase at the end of the study.

Submerged Versus Non-Submerged Implants in Diabetic Patients

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Background/Aim: The increased prevalence of diabetes mellitus becomes a public health problem. Although un-controlled diabetes has been shown to interfere with various aspects of healing processes, but the results of several studies indicate that a high success rate is achievable when dental implants are placed in controlled diabetic patients, however, the selection of the surgical technique by which the implants will be installed has to be evaluated. Accordingly a comparison was performed clinically and radiographically between submerged and non-submerged implants supporting mandibular complete overdentures in diabetic patients.

Materials and Methods: Ten controlled diabetic completely edentulous male patients were selected and divided into two equal groups. The first group received complete overdentures supported by two submerged implants, while the second group received complete overdentures supported by two non submerged implants. The effect of both types of implants on the peri-implants supporting structures was evaluated and compared both clinically and radiographically at implant loading and during twelve months.

Results: There was insignificant difference between the effects of both groups on gingival index score, but there was a significant difference between the effects of both types as regard probing depth measurements. Concerning peri-implant marginal bone height and density, there was insignificant difference between the effects of both groups.

Conclusion: One stage approach for implant installation is as predictable as the conventional two stage technique for edentulous diabetic patients once the disease is controlled.

Keywords: Submerged, Non-Submerged Implants, Diabetic Patients

A Comparative Study of the Antibacterial Effect of Calcium Hydroxide Used As an Endodontic Medication

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Background: Complete elimination of the microbes in teeth with an infected dental pulp is a clear objective of root canal treatment. Cleaning, shaping and irrigation greatly reduce the cultivable numbers of bacteria. However, it is impossible to achieve a sterile root canal system in all cases by cleaning and shaping alone. Residual bacteria are most often located in inaccessible areas such as isthmuses, ramifications, deltas, accessory and lateral canals, and dentinal tubules. If bacteria persist in the root canal system at the time of obturation, there is a higher risk of failure. Hence, attempts to eliminate bacteria involve the use of an antibacterial intracanal dressing. This study aims to evaluate in vitro as well as in vivo the antibacterial effect of calcium hydroxide when used as an endodontic intracanal medication in three different forms.

Material and Methods: Forty freshly extracted human permanent single canaled teeth were selected for the in vitro study. After mechanical preparation and irrigation with saline solution, the teeth were autoclaved and α haemolytic streptococcus strain were introduced into the root canals in the form of suspension and incubated for 24 hrs. Samples were taken by paper points from all teeth to verify bacterial growth. The teeth were divided into four groups of ten teeth each. Gp 1: Hy-Cal MT was used, Gp 2: Multi-Cal was used, Gp3: pure calcium hydroxide powder mixed with distilled water (Analar) was used and Gp 4: The root canals were kept empty (control). The teeth were again incubated for 48 hours then the paste was rinsed out of the canals. Bacterial survival was evaluated and bacterial counts were then recorded for all teeth. In the second part of the study twenty four patients with necrotic single canaled teeth were chosen. The first root canal sample (S_1) was taken after access cavity opening. The second microbiologic sample (S_2) was taken after mechanical preparation with sterile saline solution and the prepared teeth were divided into 4 groups of six patients each using the same materials applied in the in vitro study. After 1 week the paste was removed and a post medication sample (S_3) was taken from the canals. Special colonial morphologies were determined by some biochemical reactivities. Total counts were expressed and comparisons were done between different groups.

Results: No statistically significant difference between the antibacterial effects of the three types of medication was found. The three different

forms of $\text{Ca}(\text{OH})_2$ used in vitro proved to have a strong antibacterial effect on the α haemolytic streptococci. The Hycal had the strongest antibacterial effect followed by the pure $\text{Ca}(\text{OH})_2$ powder mixed with distilled water (Analar) and the Multical respectively. Results of the in vivo study showed a decrease of the streptococcal and the staphylococcal counts in the third microbiologic sample (S_3) which was taken after 1 week of $\text{Ca}(\text{OH})_2$ application. The Hycal proved to have a stronger antibacterial effect against the streptococci followed by the Multical and Analar. The Hycal group also proved to have a strong antibacterial effect against the staphylococci followed by Analar group and Multical group.

Conclusions: The three forms of $\text{Ca}(\text{OH})_2$ used in this study had an antibacterial effect in vitro as well as in vivo against the tested bacteria. Further studies should be done on the antibacterial effect of Hycal when applied in pulp chambers only.

Keywords: Antibacterial, Calcium Hydroxide, Endodontic Medication

Enamelin /Ameloblastin Gene Polymorphisms in Autosomal Amelogenesis Imperfecta among Syrian Families

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Objectives: Recent studies have shown that the diverse clinical presentations of amelogenesis imperfecta result from the variable expression of the gene and consequently the involved mutations. This study was undertaken to investigate whether a single G deletion within a series of 7 G residues (cordon 196) at the exon 9-intron 9 boundary of the enamel gene ENAM and a tri-nucleotide deletion at codon 180 in exon 7 (GGA vs deletion) of ameloblastin gene AMBN could have a role in autosomal amelogenesis imperfecta AI among affected Syrian families.

Materials and Methods: A new technique 'Size Dependent Deletion Screening' was developed in Transplantation laboratory in the University of Manchester, UK, to detect nucleotide deletion in ENAM and AMBN genes. 12 Syrian families with autosomal dominant/recessive were examined.

Results: A homozygous/ heterozygous mutation in the ENAM gene (152/152, 152/153) was identified in affected members of three families with autosomal dominant and one family with autosomal recessive AI. A heterozygous mutation (222/225) in AMBN gene was identified. However, no disease causing mutations have been found.

Conclusion: The present findings provide useful information for the implication of ENAM gene polymorphism in autosomal dominant/recessive AI. Future work is still essential to identify other implicated genes responsible for the various clinical phenotypes of AI in Syrian families.

Long term follow up of some alternatives of formocresol for pulpotomy on primary teeth

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Aim of study: to evaluate the success rate of formocresol, ferric sulfate, and electrisurgery for the primary teeth pulpotomy after 30 months.

Materials & Methods: Formocresol 20%, ferric sulfate 15.5% and electrodurgical apparatus were used in this study. One hundred fifty three primary molars were treated and divided into three groups: Group 1 (50) primary molars were treated with formocresol pulpotomy. Group 2 (52) primary molars were treated with ferric sulfate pulpotomy. Group 3 (51) primary molars were treated with electrosurgical pulpotomy. The sample was assessed radiographically and clinically after 30 months.

Results: The success rate after 30 months were as follows: 84.8%, 80%, 50%, for formocresol, Ferric sulfate, electrosurgical pulpotomy respectively. No statistical difference was noted between formocresol a ferric sulfate pulpotomy. Whereas significant difference was noted between formocresol and electrosurgical pulpotomy ($P=0.024$), and between ferric sulfate and electrosurgical pulpotomy ($P=0.46$).

Conclusion: Pulpotomy by formocresol and ferric sulfate had better success rate than by electrosurgical pulpotomy after 30 months so ferric sulfate can be used as an alternative to formocresol in pulpotomy of primary teeth. Further studies were suggested for electrosurgical pulpotomy.

Anthropology I

Paleopathology of the Commoners at the New Kingdom Site of Tell Amarna, Egypt

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In the fifth year of his reign Akhenaten founded a new capital city - Akhet-Aten (Tell el-Amarna), on new land. Amarna was built, occupied, and then abandoned within a short time of 15 to 17 years. Akhenaten brought many of the nobility and some administrative functionaries and other persons of substance. These notables would have brought some tens of thousands of invisible builders, workers and servants. Amarna and the South Tombs Commoner's Cemetery are essentially single level sites representing a snapshot of ancient Egyptian life. The iconography of Amarna suggests a city blessed with bountiful food and a comfortable life. Objectively we also expect the capital of a great empire to have many resources. However, the analysis of 83 individuals already excavated suggests otherwise. At 159cm (5'2") for men and 153cm (5 foot) for women the Amarna adults are the smallest reported for ancient Egypt. Since these people grew up before Amarna, their heights suggest that life was bad before Akhenaten. A subadult anemia rate of 74% is similarly the highest, but suggests the diet was not good at Amarna. The frequent trauma appears associated with construction and carrying heavy loads. The surplus of teenage deaths (15%) is also unusual and suggests the possibility of epidemic disease as suggested by the historic record.

Porotic hyperostosis in ancient Egyptians from the Bahriyah Oasis, Greco-Roman period

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Porotic hyperostosis is a paleopathologic condition that characterized by small and localized perforations on the surface of cranial bones. It is now generally accepted that anemia, most probably an iron deficiency anemia, is the etiologic factor responsible for lesion production. One of our goals is to reconstruct the environmental living conditions of the ancient Egyptian populations during Roman Empire and to determine if the Roman period affected the biology of this population, particularly their alimentation and health status. Roman empire period was characterized by political, socioeconomic and cultural transformations with climate of tension. The present sample consists of 171 skulls (95 males, 59 females and 17 subadults). They were recovered from Bahriyah oasis and were belonged to Greco- Roman period (332 BC - AD 395). Cribra orbitalia and cribra cranii were observed in 45.5% and 53.9% of adults, respectively. Results show relationship between lesions on orbital roof and parietal bones. Males and females were equally affected. Comparative data from other Egyptian populations show similar patterns, however, they display a lower prevalence than the data from Bahriyah Oasis. The high prevalence of porotic hyperostosis in this population may be associated with general environmental stressors during this period.

Spinal Pathological Findings in Ancient Egyptians from the Greco-Roman Period Bahriyah Oasis

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Background and objectives: The spine can provide a large amount of information about the individuals' physical condition and possible lifework style through paleopathological investigations. The aim of this research was to study spinal diseases among Greco- Roman ancient Egyptians from Bahriyah Oasis and to compare them with those of old kingdom from Giza.

Material and Methods: The material of the study was formed of 809 single vertebrae and 77 sacra of adult ancient Egyptians from the Greco-Roman period (332-30 BC) which were excavated from Bahriyah Oasis. The spinal elements were examined for pathological conditions; degenerative diseases, trauma, congenital abnormalities, infectious diseases and neoplasms.

Results: The most common lesions of the spine were those due to degenerative processes. The articular facets showed more affection than the vertebral bodies. Compressed fractures of the bodies mostly due to osteoporosis were found in 1.44 % and 5.07% of thoracic and lumbar vertebrae respectively. 62.33% was the percentage of spina bifida among ancient Egyptians from Bahriyah Oasis while it was only 3.33% among those from Giza. Few cases of lumbar spondylosis and one case of DISH were recorded. No cases of infectious or neoplastic diseases were found.

Strontium Isotope Analysis of the Human Teeth from Bersenia: A Late Antiquity Site in Northern Jordan

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The archaeological site of Bersenia represents a model of mixed subsistence strategies in the late antiquity of Jordan. Opposed to the historians believe that the late antiquity economy was stagnated, archaeological evidence at the site of Bersenia point to wealth accumulation; local wine industry and trade. As the economic growth may enhance population dynamics, the study tests the population mobility at the site using strontium isotope ratios from the human tooth enamels. The study comprised 12 right upper third molars and 12 soil samples. The results show that all of the sampled individuals were local to the area (raised in the area) and probably consumed diets obtained from spatially restricted localities in the region.

Prevalence of the Big Joints Osteoarthritis in Ancient Egyptians from the Bahriya Oasis (Greco- Roman period)

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Introduction: Skeletons give a chance to document bone and joint diseases, which are major sources of paleopathological data. Degenerative osteoarthritis is the most common musculoskeletal disease which is multifactorial in etiology. Sex, body build, nutrition, endocrinal status and hereditary may all play a role, but physical activity and mechanical stress are the primary contributing factors.

Objectives: To detect prevalence of osteoarthritis (OA) of big joints among Greco-Roman ancient Egyptians from Bahriyah Oasis. The study also attempts to examine sex and side differences of affected joints in order to verify the distribution pattern of osteoarthritis.

Results: In males, knee was the most affected joint followed by shoulder, then elbow and hip joint. While in females elbow had the highest frequency, followed by knee and hip.

Conclusion, the present study suggests the potential role of each activity and age in the development of OA among ancient Egyptians from Greco- Roman period. Moreover, the difference in the distribution pattern of OA between males and females may be attributed to the variation in physical activity.

This study helps to understand the effect of different work and activities on the prevalence of osteoarthritis of the big joints.

Bioactive Natural Products I

Antiinflammatory Triterpenoids from Arabian Frankincense

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Despite the substantial progress in understanding the molecular mechanisms underlying chronic inflammatory diseases and the intensive search for new drugs, the current treatment options are still not satisfactory. Therefore the quest continues for both novel targets and compounds that combine therapeutic efficacy with a low profile of side effects.

The nuclear transcription factor NF- κ B is a key player in the development and progression of chronic inflammatory diseases, such as rheumatoid arthritis, inflammatory bowel disease, asthma, and atherosclerosis. Therefore, NF- κ B is considered a promising target for anti-inflammatory intervention. Some plant-derived compounds have been reported to interfere with the NF- κ B signaling pathway. Indeed, plants harbor a plethora of secondary metabolites that might serve as lead compounds for the development of novel therapeutic approaches. In traditional medicine, extracts from the gum resin from various *Boswellia* species, commonly termed frankincense, have been used as anti-inflammatory remedies. Such extracts have already been employed in small clinical pilot studies for the treatment of rheumatoid arthritis and inflammatory bowel diseases. After purification to chemical homogeneity, we have characterized the structural configuration of several acetyl-boswellic acids (ABAs) belonging to the family of pentacyclic triterpenoids; these compounds are believed to represent the active principle of the aforementioned phytopharmaceuticals.

Monocytes and macrophages represent essential effector cells in both chronic inflammation and in the host defense against bacterial infection. Using LPS as a potent activator of human monocytes, we found that acetyl- α -boswellic acid (A α BA) and acetyl-11-keto- β -boswellic acid (AK β BA) inhibit NF- κ B signaling. We identified specific inhibitory effects of ABAs on I κ B kinase (IKK), which is pivotal for the degradation of the NF- κ B inhibitor I κ B, as well as the phosphorylation of p65, two steps essential for NF- κ B activation and the subsequent cytokine expression. Using purified human recombinant IKK α and IKK β , we positively confirmed the direct effect of the A α BA and AK β BA on the IKK complex. The direct inhibition of IKK places A α BA and AK β BA apart from other plant-derived compounds, such as flavopiridol, ursolic and betulinic acid, which seem to exert their effects upstream of the IKK. We further studied the effect of AK β BA on the development of atherosclerotic lesions in apolipoprotein E-deficient (apoE^{-/-}) mice. Atherosclerotic lesion formation was enhanced by weekly injections of endotoxic lipopolysaccharides (LPS) in apoE^{-/-} mice. LPS alone increased atherosclerotic lesion size by

two-fold and treatment with AK β BA significantly reduced it by ≈ 50 %. Moreover, AK β BA potently inhibited the NF- κ B activation in atherosclerotic plaque tissues. AK β BA treatment led to a significant down-regulation of several NF- κ B-dependent genes such as MCP-1, MCP-3, IL-1 α , MIP-2, VEGF and TF. By contrast, AK β BA did not affect the plasma concentrations of triglycerides, total cholesterol, anti-oxidized LDL antibodies and various subsets of lymphocyte-derived cytokines. Thus, the inhibition of NF- κ B activity by plant resins from the *Boswellia* family might represent an alternative for classical medicine treatments for chronic inflammatory diseases such as atherosclerosis. This work was supported by the German Research Association and the Federal Ministry of Education and Research

Effectiveness of extracts and potential natural antioxidants from *Varthemia iphionoides* in the oxidative stability of Soybean oil and Beef tallow

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Antioxidant activity of ethanol, ethyl acetate and hexane extracts from the aerial parts of medicinal plant *Varthemia* (*Varthemia iphionoides*) were investigated *in vitro* using the accelerated oven storage method on soybean oil and beef tallow, the linoleic acid system, DPPH-radical scavenging activity and total phenolic contents. The antioxidant activity for all extracts was increased by increasing the extracts concentration in soybean oil. The ethanol extract exhibited significant antioxidant activity on beef tallow followed by ethyl acetate extract ($P<0.05$). The extracts exhibited a strong antioxidant activity in the linoleic acid model ($P<0.05$) by increasing the induction period for more than 20 days. A positive correlation between the total phenolic contents of the extracts and DPPH scavenging activity at concentration of 100 μ g/ml was observed. Bioassay guided fractionation of the ethanol extract and further purification of the pronounced radical scavenger led to the isolation and identification of 5,7,4'-trihydroxy-3,6-dimethoxyflavone (**1**), 5,7,4'-trihydroxy-3,3'-dimethoxyflavone and (**2**). The structures of these compounds were established by NMR, MS, and UV spectroscopy. The isolated compounds (**1** and **2**) at concentration of 100 μ g/ml exhibited considerable DPPH radical-scavenging activity with inhibition percentage of 48.5, and 61.4 respectively.

Keyword: *Varthemia iphionoides*, Antioxidant activity, Linoleic acid model, DPPH, 3-methoxyflavones

Phytochemical and Biological Investigation of *Silybum marianum* wildy growing in different ecosystems of Egypt

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Objective: *Silybum marianum* was found to be deficient in Silydianin (one component of biologically active raw material, Silymarin). This study includes investigation of several plant races of the plant collected from different locations in Egypt to find out any of which may containing silydianin. The study also includes biological investigation for all the prepared Silymarin (active principles from different samples).

Materials and Methods: Samples of *silybum marianum* fruits were collected from fourteen plant races throughout Egypt. The dried seeds were first defatted with pet. Ether followed by extraction with ethyl acetate. The ethyl acetate extract were separately evaporated in vacuum, weighed then dissolved in methanol and subjected for HPLC analysis. Also all were subjected for biological evaluation for their hepatoprotective activity on primary cultures of rat hepatocytes to achieved the following:- A. Determination of LD₅₀ of the extracts B. Evaluation of the hepatoprotective activity C. Determination of the effective concentrations that exhibit the biological activity in comparison with standard Silymarin (Madaus)

Results: HPLC analysis showed that samples collected from El wahat, Beni-suif gov. and Dakhla oasis contain silydianin in the ratios 18, 10, 14% respectively. While it was found to be absent from Agricultural road of Alexandria, Giza gov. (silydianin in control sample represents 20% of the total Silymarin).

Samples collected from El-Fayium showed the highest therapeutic index 100 followed by the desert road of Cairo/Alexandria 44 km and Asuit governorate and control sample showed therapeutic index of 20.

Conclusion: We recommend collecting samples from El-Fayium for further preparation.

Keywords: *Silybum marianum*, Asteraceae, Silybinin, Silychristin, Silydianin.

Biological Properties Overveiw on Three Cyperus Speceis

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Objective: Cyperus species known by its diversity uses in the traditional remedies. Three species from the mentioned genus viz. *C. rotundus*, *C. esculentus* and *C. papyrus* were selected to investigate its biological properties.

Materials and methods: Six different extracts were prepared separately from each tuber of the selected species, in addition to the whole plant of *C. rotundus* and the stem of *C. papyrus*. The prepared extracts subjected separately to the general toxicity pre-screening experiment using larvae of the brine shrimp of *Artemia salina* (1). The Micro-titer dilution bioassay was selected to examine the anti-microbial properties against six bacteria and two fungi (2). However, β -Carotene Bleaching (3) and DPPH Radical Scavenging (4) chemical assays were selected to examine the anti-oxidant properties.

Results: The hexane extract from *C. rotundus* tuber recorded the highest toxicity against *artemia salina* larvae. However, both of the hexane extract from *C. papyrus* tuber and water extract from *C. esculentus* tuber showed good bactericidal activity against *Bacillus cereus* [MBC: 250, 500 μ g/ml respectively]. Concerning the anti-oxidant activity, the study recorded three of the *C. papyrus* extracts that immediately decolorized DPPH and detected strong activity where four of *C. rotundus* extracts recorded moderate anti-oxidant activity.

Keywords: Cyperus; screening methods, toxicity; anti-tumor; anti-microbial; anti-oxidant; Egypt

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Anti-inflammatory Triterpenes from *Styrax benzoin*

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Objective: evaluation and validation of Anti-inflammatory Triterpenes from *Styrax benzoin*.

Material & Methods: The lupeol epilupeol (**1**), four dammaranes dipterocarpol (**2**), dammarandiol-II (**3**), dammarenolic acid (**4**), eichlerianic acid (**5**) and the oleanane type asiatic acid (**6**) were isolated from the chloroform extract of the gum resin of *Styrax benzoin* (Styracaceae). The data of ^1H and ^{13}C NMR chemical shifts for dammarenolic acid (**4**) [20S-hydroxy-3,4-seco-4(28),24-dammaradien-3-oic acid] were already reported before, however, the complete assignments have never been revealed. All known compounds were identified by spectroscopic methods and isolated from the family Styracaceae for the first time.

Results: These compounds show significant inhibitory effects on superoxide anion generation by human neutrophils in response to fMLP/CB. On the other hand, these compounds have minor inhibition of nitric oxide formation in lipopolysaccharide-induced RAW264.7 macrophages.

Conclusion: This is the first study showing anti-inflammatory activity of these compounds.

Keywords: *Styrax benzoin*; Styracaceae; resin; triterpenes.

The Lipid and Volatile Oil Constituents of *Blackiella Inflata* (Allen) Growing In Egypt and Their Biological Activity

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The family Chenopodiaceae is one of the largest families of the flowering plants. It is represented in Egypt by only 25 genera and 300 species. The most important genera are *Ambrosia*, *Beta*, *Suaeda*, *Halocnemum* and *Blackiella* ⁽¹⁾. The occurrence of flavonoids in several Chenopodiaceae species has been reported ⁽²⁾. Also coumarins, alkaloids and terpenes were detected in several species ⁽²⁾. Nothing was reported about the phytoconstituents of *Blackiella inflata* growing in Egypt. The lipid contents of *B. inflata* were studied. The unsaponifiable fraction was identified by GLC. A series of hydrocarbons ranging from C₉ – C₁₇ in addition to cholesterol, stigmasterol and triterpenoid β – amyrin were identified. GLC analysis of the fatty alcohol fraction revealed the presence of 7 fatty alcohols, also GLC analysis of the fatty acid methyl esters revealed the presence of 9 acids in which stearic acid (28.3 %) represents the main component. The constituents of the volatile oil of *B. inflata* were identified by using GLC analysis. Twenty one compounds were identified which represent (71.5 %) of the total composition of the oil. The unsaponifiable, fatty acid and volatile oil fractions showed a strong antioxidant activity in the DPPH assay, also the pet. Ether and volatile oil fractions at a concentration of 0.1 mg / ml showed strong activity against tomato mosaic virus (ToMV).

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The lipids and the Fixed oil constituents of the seeds of *leucaena glauca* (L.) Benth Growing in Egypt and Their antioxidant activity

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Leucaena is a genus of about 24 species of leguminous trees and shrubs, distributed from Texas U.S.A. to Peru and spread in Egypt¹. It belongs to the family mimosaceae. *Leucaena glauca* is one of this genus and the plant can be used for several purposes as livestock folder green manur , fire wood crops . Its seed can be used as beads. The crop can be raised as a charcoal source and for energy. Extract from its seeds have anthelmic medicinal quantities in Sumatra and Indonesia². Also the bark is eaten for internal pain, a decoction of the root and bark is taken as contraceptive, ecboic also its found that *L.glauca* has hypoglycemic effect similar to the hypoglycemic affect of Daonil³. The present work deals with the study of the lipid and fixid oil constituents of *L.g auca* growing in Egypt and evaluation of their antioxidant activity, using the DPPH free radical assay. The unsaponifiable fraction was identified by GLC. A series if hydrocarbons ranging from C₇ – C₂₈ in addition to campasterole , stigmasterol, β- sitosterol and triterpenoids α – amyryne and β- amyryne were identified . GLC analysis of the fatty alcohol fraction revealed the presence of 8 fatty alcohols, also GLC analysisi of the fatty acids methyl esters revealed the presence of 10 fatty acids. the constituents of the fixid oil of the seed of *L.glauca* were studied in which 17 compounds were identified by using GLC analysis. The unsaponifiable fraction and the fatty acid methyl esters showed a strong antioxidant activities in the DPPH assay , compares to Trolox (standard antioxidant compound).

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Phytochemical Investigation and Antiviral Activity of *Duranta repens* L. (var. *vareigata*)

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24-ethylcholest-5-en-3- β -ol (β -sitoserol) 1, naringenin 2, 3,4-dihydroxy-bphenethyl-O- α -rhamnopyranosyl-(1 \rightarrow 3)-4-O-caffeoyl- β -D-glucopyranosid (acteoside) 3, lamiide 4, α -glucopyranosyl (1 \rightarrow 2) β -fructopyranoside (sucrose) 5, α -galactopyranosyl(1 \rightarrow 6) α -glucopyranosyl-(1 \rightarrow 2) fructopyranoside (raffinose) 6 were isolated from *Duranta repens* Linn. var. *variegata* (Verbenaceae) and identified by spectral analyses. Antiviral activity against Hepatitis A virus was studied. The total ethanol extract showed 76% inhibition, while the ethylacetate/methanol fraction of celite column showed 88% inhibition of the virus by the plaque reduction assay. Compounds 2, 5, and 6 were reported for the first time from this species. Also the petroleum ether extract of was studied. Both the unsaponifiable fraction and fatty acid methyl esters were subjected to GLC for identification of their constituents. The unsaponifiable fraction was found to be amixture of hydrocarbons ranging from C15-C27. The fatty acids methyl esters composed of 15 fatty acids in which palmitic acid represent the main component 46%.

Keywords: acteoside, antiviral activity, β -sitoserol, *Duranta repens*, lamiide, naringenin, raffinose,

Phytochemical and Biological Investigation of *Echium sericeum* (Vahl) Growing in Egypt

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Echium genus is represented in Egypt by seven species¹ in which a number of naphthaquinones have been isolated from certain *Echium* species^{2,3}. The flavonoid constituents of certain *Echium* spp. have been studied and a number of flavonoids were identified⁴, also several pyrrolizidine alkaloids have been isolated from certain species⁵. From the medical point of view, many of *Echium* species are used in traditional Iranian medicine as tonic, tranquillizer, diaphoretic, cough suppressant and a remedy for sore throat⁶.

The present work deals with the study of the flavonoidal constituents of *Echium sericeum* and evaluation of their insecticidal activity against *Spodoptera littoralis* (Boised) as well as the anti-oxidant activity of both the total extracts and the isolated compounds, using DPPH free radical.

About 1 kg of the aerial parts of *Echium sericeum* were dried, powdered and extracted with pet. Ether and then with 80 % ethyl alcohol. The ethanolic extract after partition with chloroform, ethyl acetate and n-butanol yielded crude extracts containing flavonoids. The previous extracts were subjected separately to preparative paper chromatography (3 MM, developed with 15 % acetic acid) and the main flavonoidal bands were cut and eluted separately with 90% methanol. The eluted fractions were further purified by using Sephadex LH-20 column. The isolated flavonoid compounds were identified as apigenin, luteolin-7-O-rutinoside, apigenin-7-O-rhamnoside and quercetin-3-O-rhamnoside. Their identity was proved by TLC, PC, m.p, UV, ¹H-NMR, MS, FAB mass spectrum.

The ethyl acetate and butanol fractions showed a strong antioxidant activity, using DPPH, while the four flavonoidal compounds isolated from the plant showed marked antioxidant activity. The pet. ether extract of *E. sericeum* showed insecticidal activity against *Spodoptera littoralis* (Boised), causing 71.5 % mortality. On the other hand, the butanol and 80 % alcohol fractions had a marked effect causing 62.5 and 52 % mortality; respectively by using 2.5 % concentration.

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Cytotoxic Activity of some Cucurbitaceous plants

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Objective: The aim of the present study was to evaluate the antitumor activity against different tumor cell lines of different crude cucurbitacins from cucurbitaceous plants such as *Luffa cylindrica*, *Ecballium elaterium* and *Cucumis prophetarum* and two isolated ones D and E.

Material and Methods: Three cucurbitaceae plants (*Ecballium elaterium*, *Luffa cylindrica*, *Cucumis prophetarum*) were extracted for their cucurbitacins content as total in alcohols extract. Their major cucurbitacins were isolated from the crude extract by PTLC using different solvent systems and tested for their antitumor activity against several cell lines carcinoma by the -(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) assay .

Results: The results revealed that total cucurbitacins of *Ecballium elaterium* and cucurbitacin D lead to significant changes of the proliferation rate of Hep. G2 compared to control cells. In addition, the tested *Ecballium elaterium* cucurbitacins inhibited the cell viability of colon and breast carcinoma, treatment with *Luffa* cucurbitacins lead to a dose-dependent increase in the growth of lymphoblastic leukemia cells.

Conclusion: The total cucurbitacins from *Ecballium elaterium* was the most potent one against different carcinoma cell lines but the *Luffa* cucurbitacins exhibited a proliferative stimulatory activity of immune cells lymphocytes.

Key word: Cucurbitacins, *Ecballium elaterium*, *Luffa cylindrica*, *Cucumis prophetarum*, antitumor activity.

Biopharmaceutical stability and teratological study of Biphenyl dimethyl dicarboxylate solid dispersion in ternary system

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Background: The present work is an extension to the previous investigation on the effect of solid dispersion biphenyl dimethyl dicarboxylate in ternary system (DDBIIS) on solubility, dissolution and bioavailability profile of solid dispersion of biphenyl dimethyl dicarboxylate (DDB) with new formula in comparison with the commercial product. DDBIIS was subjected to biopharmaceutical stability study after stored at a room temperature on shelf for one year in order to investigate the influence of stability problems on the therapeutic response on the product. DDB has been shown to exert a hepatoprotective effect against various types of liver injury.(Kim et al., 1999a).According to Yousef, (2007) the bioavailability of DDBIIS was better than that of DDB commercial product. The present study is undertaken to compare between the teratogenic effects of new formula of biphenyl dimethyl dicarboxylate (DDBIIS) and commercial product of DDB on the pregnant rats and their fetuses

Material and methods: Adult male and female rats were used to determine the pharmacokinetic properties of fresh and stored DDBIIS. Three groups of pregnant rats (each was 10) were used to study the teratogenic effects of DDBIIS on the development of rats and compared it with commercial product. DDBIIS or commercial product was administered to the pregnant rats with therapeutic dose 2.7 mg/kg/day from the 1st day to 20th day of gestation.

Results: No significant change was recorded on the physical properties, DTA thermogram and dissolution properties. Statistical analysis of the pharmacokinetic data obtained from the animal studies between fresh and stored formula DDBIIS indicated no significant difference between all parameters. The results show some effects for DDBIIS and the commercial products more than the control groups. DDB causes increase the high percentage of abortion and resorption, growth retardation, hematoma, paralysis in the fore and hind limbs. There are some lesions in the liver of fetuses in groups treated with commercial products more than that of group treated with DDBIIS.

Pharmacology Symposium

Over The Counter Drugs and Kidney Damage

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Drugs are introduced into the market without a clearly defined adverse drug reaction profile, recognition and reporting of potential adverse drug reactions, including nephrotoxicity. The kidneys are more sensitive to toxicity than are many other organs of the body. Drug-induced renal failure (DIRF) is a serious, and often preventable, disease associated with significant morbidity and high health care costs. Drugs are often the culprit, and they range from commonly used over-the-counter analgesics to immunosuppressants and chemotherapeutic agents. Determining the incidence of DIRF is even more difficult, particularly in the community, because mild changes in renal function often go unrecognized and unreported. Furthermore, in-hospital occurrence rates are low, due to both underrecognition and underreporting. Not all hospitals actively report adverse drug reactions, and most data, if collected, remain unpublished. In USA the DIRF occurs in 18% to 27% of hospitalized patients with ARF, and 20% of hospital admissions for ARF are reportedly caused by drugs, particularly nonsteroidal anti-inflammatory drugs (NSAIDs). The mortality rate for patients with ARF is 23% to 80%. More than 60% of people cannot identify the active ingredient in their brand of pain reliever. Additionally, about 40% of Americans believe that OTC drugs are too weak to cause any real harm. Eight analgesic preparations with approved indications for acute pain were among the top 200 drugs prescribed in the United States in 2006. In addition, an estimated 36 million Americans use over-the-counter (OTC) analgesics daily. Given this volume of use, it is not surprising that a number of drug interactions involving analgesic drugs have been reported. The most serious interactions usually involved other interacting drugs with low therapeutic indices or chronic and/or high-dose use of an analgesic and the interacting drug. Australian parents used over-the-counter medications to reduce childhood fever was common (91%): 94% of parents reported using paracetamol and 77% reported using ibuprofen. A few (3.7%) used homeopathic remedies. The belief that these medications were harmful was overridden by fears of harmful outcomes from fever. Most parents reported over-the-counter medications as potentially harmful (73.2%), citing liver (38.2%), stomach (26.4%) and kidney (18.6%) damage. In EGYPT, there was no reported data about OTC drugs and kidney damage. Acute renal failure (ARF) is defined as a rapid loss of renal function due to damage to the kidneys. Patients with ARF are often asymptomatic and are diagnosed by observed elevations in blood urea nitrogen (BUN) and serum creatinine (SCr) levels. Populations most at risk include the elderly and those with underlying renal insufficiency as in bilateral renal artery stenosis, cirrhosis, nephrotic syndrome, or congestive heart failure. Drugs which cause ARF were

classified as drugs induce interruption of renal perfusion and glomerular filtration rate such as NSAIDs and angiotensin-converting enzyme (ACE) inhibitors results in renal hypoperfusion, drugs most often implicated in the development of interstitial nephritis include certain antibiotics, antivirals, and immunosuppressants, drugs induced renal tubular injury such as amphotericin B upset the balance between oxygen demand and supply, other drugs such as aminoglycosides, radiocontrast media, and heavy metals, become concentrated in the kidney and cause a direct toxic effect, usually in a dose-dependent manner and drugs such as acyclovir and methotrexate can cause crystal deposition in the tubules, which can occur when a patient is dehydrated. Drugs with low solubility may form crystals, causing obstruction of urine output and subsequent renal failure. Prevention is the treatment of choice for ARF, as well as DIRF. Patients should be counseled on concomitant medications that might cause ARF and the risk of dehydration, proper hydration, and certainly preventing dehydration in the elderly, may help lower the risk of drug-induced renal disease or nephrotoxicity (DINF). Improved labelling of OTC analgesics may help consumers distinguish common analgesic ingredients in a wide variety of preparations and facilitate informed decisions concerning the use of OTC drugs. The FDA released a comprehensive statement in 2007 committing to a new initiative focusing on drug safety, including improving methods of surveillance to identify unforeseen drug toxicity.

Comparative Evaluation of the Protective Effect of Selenium and Garlic against Liver and Kidney Damage Induced by Mercury Chloride in the Rats

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The present study was designed to compare the protective effect of selenium and garlic against liver and kidney damage induced by IP injection of 0.5 mg/kg mercury chloride (HgCl_2) in rats. Thirty-six Sprague-Dawley rats were used in the present experiment and divided into six groups: one group was orally given (1 ml) saline and served as control group; two groups of rats given either selenium (0.1 mg/kg) or garlic (63 mg/kg) alone, once daily oral dose for 30 successive days; other two groups of rats were given either selenium or garlic alone, once daily dose for 15 successive days prior to HgCl_2 injection and other 15 successive days simultaneous with HgCl_2 injection; and the last group of rats injected IP with HgCl_2 for 15 days and at the end of the experiment (which lasted 30 days), blood samples were obtained from all rats after being lightly anaesthetized with ether for the biochemical analysis, and specimens of kidney and liver were removed and prepared for histochemical study. Computer image analysis was applied on liver and kidney tissues to evaluate the DNA density and DNA ploidy pattern in different groups. The results revealed that the rats injected with HgCl_2 showed a significant increase of levels of blood urea nitrogen (BUN), serum creatinine, alanine aminotransferase (ALT), aspartate aminotransferase (AST) by 29.3%, 62.5%, 29.46% and 30.61% respectively, while alkaline phosphatase (ALP) showed significant decreased by 22.6% as compared with saline control group. Rats that were given selenium in combination with the HgCl_2 injection showed significant decrease of BUN, S. Creatinine, ALT and AST levels, while ALP showed significant increased in its level as compared with HgCl_2 group. Also rats that were given garlic in combination with HgCl_2 injection showed significant decrease of BUN, S. Creatinine, ALT and AST levels, although ALP serum level showed increase of its level as compared to HgCl_2 group. Rats that had been orally administered Selenium or garlic alone did not showed any significant changes of the serum level of BUN, S. Creatinine, ALT and AST but there was significant decrease of ALP level as compared with saline control group. The cytometric results revealed that injection of HgCl_2 induced an increase in the DNA density in kidney tissues with an increase in aneuploid cells and decrease in diploid cells. However, DNA density decreased in liver tissues with mild decrease in diploid cells and little percentage of aneuploid cells. We can conclude that oral administration of either selenium or garlic produce a significant protection in liver and kidney damage induced by the HgCl_2 injection, but garlic appears to be more protective.

Effect of Certain Natural Antioxidants in Experimentally Induced Renal Damage in Rats

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The aim of the present study is to investigate the possible protective and therapeutic effects of the natural antioxidants namely green tea, lycopene and their combination in experimentally induced kidney damage in rats. Kidney damage was induced by subcutaneously (s.c) injection of a single dose (15mg/kg) potassium dichromate (PD). Rats were divided into 11 groups 12 rats each and treated daily for 14 days with green tea (600 mg/kg), lycopene (4mg/kg) or combination of green tea+ lycopene either alone or before or after PD injection as follow: normal rat groups which subdivided into:- group I: control group received saline ,group II: lycopene control group received corn oil ,group III, IV and V: rats received green tea, lycopene and its combination respectively, group VI: rats injected s.c with PD and served as kidney damaged group, VII, VIII and IX :Rats received green tea, lycopene and its combination respectively before PD injection, group X, XI and XII: Rats received green tea, lycopene and its combination after PD injection. The following parameters, were measured 2 & 14 days after drugs administration:- (body weight, urine volume, serum creatinine, blood urea nitrogen ,total protein in urine, malondialdehyde (MDA), reduced glutathione (GSH),catalase (CAT), superoxide dismutase (SOD) in kidney. The results showed that PD injection did not cause any significant change in body weight of rats after 2 and 14 days, significant increase of urine volume after 2 days without any change after 14 days of induction, significant increase of serum creatinine, blood urea nitrogen (BUN) and total protein after 2 and 14 days, significant decreased creatinine clearance (CCr) after 2 days without any change after 14 days of induction, significant increase of malondialdehyde (MDA)& significant decrease of kidney GSH content after 2 and 14 days of induction as compared with the normal control group. While the pre-treatment of animals with green tea and/or lycopene significantly reduced the urine volume after 2 days with no change after 14 days of kidney damage induction, significant reduction of serum creatinine, BUN and total protein in urine after 2 and 14 days, significant increase of CCr after 2 days without any significant effect after 14 days of kidney damage induction , significant reduction of kidney MDA content &significantly increased GSH activity after 2 and 14 days of kidney damage induction as compared with the kidney damaged animals, only the pre-treatment of animals with green tea alone and in combination with lycopene significantly increased CAT activity, However pretreatment of animals with lycopene alone, did not induce significant change in the CAT activity after 2 and 14 days of kidney damage induction, as compared with the kidney damaged group. In conclusion, the results obtained, in the present study, demonstrated that, green tea and/or lycopene have a nephroprotective effect against glomerular and tubular dysfunction as well as anti-oxidative activity against PD induce kidney damage in rats.

Saccharomyces Cervisiae and Probiotec Bacteria Potentially Inhibit Aflatoxins Production in Vitro and In Vivo Studies

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Saccharomyces cerevisiae (SC) and tow strains of Lactic acid bacteria (*Lactobacillus rhamnosus* GG and *Lactobacillus rhamnosus* LC705) potentially inhibited *Aspergillus flavus* growth and aflatoxins production in YES liquid media.

The biologically active microorganisms (SC, LGG & LC705) had no toxic effects in rats when orally administered single doses of SC (10^{11} CFU ml⁻¹) and LGG & LC705 (10^9 CFU ml⁻¹). Moreover, daily treatments for 15 days with the three microorganisms in saline concomitant with Aflatoxins in corn oil (2 mg/ml AFB1), produced by *Aspergillus flavus*, exhibited significant reduction in serum ALT, AST, GGT, creatinin, and BUN compared with the positive control group (*A. flavus*). Results indicated that no death occurred in any combined treatment with aflatoxins, otherwise the mortality rate reached 30% deaths in rats administered aflatoxins alone at 10 -12 days of experimental period.

Blood glutathione (GSH) level significantly increased in groups treated with single-treatment of SC, LGG & LC705 or with Aflatoxins containing media. However, Aflatoxins- treatment severely depleted GSH level than other treatments. The best results found in SC > LGG > LC705 -YES media containing Aflatoxins. Many histopathological changes were observed in liver of rats treated with AFB1 such as necrosis vacuolar degeneration, with loss of normal architecture, mild fibrosis and fatty changes. As well as, renal tissues showed vacuolar degeneration, cellular swelling and pyknotic nuclei of proximal convoluted tubules. Combined treatment with AFB1 plus (SC, LGG or LC705) lead to significant improvement in both histopathological and biochemical alterations induced by AFB1-administration. DNA content decreased significantly in liver and kidney tissues by AFB1-administration, these findings were ameliorated by probiotec bacteria and *S. cerevisiae* treatment.

Conclusion: the tested microorganisms are safely to use as food additives or preservative due to their antioxidant activities. Our study needs further continuation in this respect.

Keywords: *Saccharomyces cerevisiae*, Probiotec bacteria, Aflatoxins, *Aspergillus flavus*, rat, ALT, AST, GGT, creatinin, BUN, GSH, histological examination of liver and kidney tissue.

Environmental and Physiotherapy

Health Effects from Electromagnetic Field (EMF): Cell Phones and Mobile Base-Stations

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Cell phones or mobile telephones devices are the major public source of Radiofrequency EMF. Communication between a mobile telephone and the nearest base-station is achieved by microwave emissions from the antenna. It should also be pointed out that in order to conserve power the battery is pulsed and this gives rise to Extreme Low Frequency EMF.

The results of the epidemiological studies involving RF exposures are contradictory. Some demonstrated an increased risk of all types of brain tumors among ever users of cellular phones, especially in relation to ipsilateral exposure. Others refused these results, and attributed the findings to other confounding factors. Moreover, some studies recognized that mobile phones appear to cause a variety of symptoms in some individuals; in form of burning feeling or dull ache mainly occurring in the temporal, occipital or auricular areas. Contradictory, other studies attributed these symptoms to stress.

In the present work different opinions about the health effects from EMF results from mobile base-station and the use of mobile phones will be discussed. In addition, the standards for safety will be recognized.

Keywords: Cell phone, mobile base-station, health effects, and standards for safety.

Hazardous Effects of Electromagnetic Radiations Emitted by Mobile Phones on Brain and Cochlea of Albino Rats: Role of Melatonin and Vitamin C

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Background/Aim: The wide spread of mobile communication raises questions about the effects of electromagnetic fields (EMFs) emitted by them on the human body.

Objectives: The objective of this study was to examine effects of exposure to radio frequency electromagnetic fields (REFs) emitted by mobile phones on the brain and cochlea and to investigate the role of melatonin and vitamin C on these effects in adult rats.

Material & Methods: Forty two adult male albino rats were used and were randomly grouped into 7 groups (six rats each) as follows: Group I (Negative control), Group II (Sham-operated without exposure to EMR), Group III(rats treated with melatonin) , Group IV (rats treated with vitamin C), Group V (Exposure group, rats exposed to 900 MHz EMR), Group VI (Exposure + melatonin group) and Group VII(Exposure + Vit C group). A 900 MHz EMR was applied to groups V, VI and VII for 60 min/day, for 30 days using an experimental exposure device. Glutathione (GSH), superoxide dismutase enzyme (SOD), gamma-aminobutyric acid (GABA) and norepinephrine (NE) levels in brain tissue were estimated. Also, GSH and SOD in erythrocytes hemolysates and serum corticosterone levels were estimated. Histopathological examination of brain tissue and cochlea (organ of Corti) was also performed.

Results: The results of the study revealed that exposure to mobile phone radiations induced significant decrease in the levels of GSH, SOD enzyme and GABA and increase in NE in brain tissue. Also, significant increase serum corticosterone was detected, while exposed group with co-administration of melatonin or Vit.C throughout the exposure period showed significant increase in the levels of GSH, SOD enzyme and GABA and decrease in NE in brain tissue and significant decrease in serum corticosterone compared to exposed group. Brain of exposed rats revealed small dispersed neurons with dark nuclei in undifferentiated layers of the cortex, Purkinje cells of cerebellum and cells of the dentate gyrus. Complete destruction of all cells of the organ of Corti and neurons of spiral ganglion was noticed in the exposure group. Furthermore, brain and organ of Corti of rats exposed to mobile phone and was given melatonin showed nearly normal structure. And the group of rats that was given Vit.C showed mild improvement.

CONCLUSIONS: Mobile phone radiations induced deleterious effects on the brain and organ of Corti both biologically and histopathologically, these effects were significantly reversed nearly to normal with co-administration of melatonin while mild reversal with co-administration of Vit. C. **It is recommended** to use antioxidants for mobile phone users especially those who use it for long periods. Also, heavy users of mobile phones should decrease the calling periods as much as possible.

Key words: Mobile phone, brain, cochlea, melatonin and Vit. C.

Ultrasound Effects on Lens Protein and Its Membrane of Rabbits Eye

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Objectives: In the present work, the effect of ultrasound (US) therapeutic doses on the rabbit's eye lens protein and its membrane was studied. The characteristics of eye lens protein are studied at the power intensities of 0.5 & 3 W/cm² at frequencies of 2.8, 4.5 and 10.8 MHz for exposure durations 10, 20 and 40 minutes. All the studied groups have their own controls.

Materials and Methods: Na⁺ - K⁺ ATPase activity of the eye lens membrane, total soluble protein and electrophoretic fractionation for the eye lens proteins were carried out for the studied groups.

Results: The obtained results showed that there is a noticeable decrease in ATPase activity which was a function of power intensity, frequency and duration of US exposure which reached to -38.37% at the power intensity 3W/cm², at frequency 10.8MHz and exposure time of 40 minutes. Also, total protein content decreased by increasing the power intensity, duration of US exposure and the frequency. It reaches -11.1% at the power intensity 3W/cm², frequency 10.8MHz and duration of exposure of 40 minutes.

The electrophoretic separation indicated completely change after US sonification with different used power intensities at different frequencies and exposure times. Electrophoretic patterns showed a decrease in the intensity of high mobile fractions accompanied by an increase in electrophoretic mobility of low mobile ones. The patterns showed also an aggregation of lens proteins of low mobile fractions after exposure to 10and20minutes but at 40 minutes, there was an increase in the mobility of all fractions. .In addition, electrophoretic patterns showed a remarkable shift of all fractions, after 20 & 40 minutes of exposure to US towards low molecular weights.

Conclusion: The damage in the eye lens protein is a function of the absorbed US dose in the eye tissues, frequency and exposure time.

Key words: Ultrasound, Ophthalmology, eye lens protein, lens membrane.

Psychometric Evaluation of the Caring Assessment Tool

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The implementation of professional practice models in health care institutions has proliferated in recent years as hospitals are rushed to obtain magnet status. Caring relationships have been preliminarily tied to selected patient outcomes. Despite this surge in caring-based professional practice, efficient, theoretically sound evaluation of caring, remains problematic.

Although many instruments have been developed to measure caring, few measure caring from the patient's point of view are efficient and have established psychometric properties.

This research has 2 purposes:

1-To identify how many theoretical factors are needed to accurately explain the caring and 2- To develop a short instrument that reliably measures caring from the patient's point of view. Using a cross-sectional descriptive study of 500 adult patients from 2 university hospitals, a factor analysis and reliability statistics were used to evaluate the caring assessment tool.

The findings provide insight into patient's assessment of caring in nursing and offer a baseline evaluation of the psychometric properties of the tool. The reliable, validated caring assessment tool by its easily understood language and ease of administration can assist in assessment of caring practice of nurses as perceived by patients and also to measure nurses caring competence, to monitor improvements in nursing practice and to correlate caring with patient outcomes.

Finally the factors emerging from the study add to the knowledge base of nursing and provide a more explicit understanding of the concept of caring.

Intermittent Cervical Traction in Cervical Spondylosis

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30 patients (20 female, 10 male) that clinically diagnosed as cervical spondylosis, were treated by intermittent cervical traction, in the form of 6 sessions, every other day.

All patients undergo a comprehensive clinical assessment pre and post treatment, including (pain score, dermatome , myoetome and reflexes affection)

By clinical examination and by using (1 test) at spoint level of significant. There is an improvement in their sings and spondylosis.

So, intermittent cervical traction is an effective therapeutic method in treatment of cervical spondylosis

Influence of Regular Closed Chain Exercises for Lower Limbs on Bone Mineral Density of Femoral Neck in Stroke Patients

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Background and objective: Stroke patients have high prevalence of osteoporosis. Over activity of the unaffected side, asymmetrical weight distribution with a shift in the body's center of pressure towards the unaffected side unload the skeleton at affected hip. These factors may result in an early hip fracture. The purpose of this study was to investigate the effect of regular closed chain exercises on bone mineral density in stroke patients.

Materials and Methods: Thirty male hemiplegic patients with mean age of 59.8 ± 3.2 years participated in this study. They were assigned into two equal groups (study and control). Both groups received conventional physical therapy program (tone reduction, trunk control, mobilizing, coordination and strengthening exercises) for ten months as five sessions per week. The study group received additional closed chain exercises program. Bone mineral density (BMD) of femoral neck was measured by dual x-ray absorpiometry (DXA) pre and post treatment for both groups. In addition, body weight distribution during standing was assessed.

Results: The study group demonstrated improvement in body weight distribution and BMD values post treatment as compared to the control group.

Conclusion: This study provides clear evidence that redistribution of weight bearing and relearning of loading response on paretic side by using closed chain exercises in addition to conventional program are effective in minimizing bone loss post stroke.

Key words: Bone density- Stroke- Closed and open chain exercises

Complementary Medicine

Herbal Remedies for Digestive Problems

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Good digestion is considered as central for good health. Dysfunction not only starves the body of nutrients; but also leads to buildup of toxins.

In Chinese medicine, the digestive organs are associated with many other organs and bodily processes; including the blood supply, energy circulation, mental activity, and muscles. Imbalance here can be linked with a wide range of physical and emotional symptoms.

In west, herbal medicine has also long focused on digestive functions.

Herbs can provide an impressive array of tonics, stimulants, carminatives, and relaxants to ensure healthy functions.

Good digestion depends as well on the nervous system to stimulate acid or enzyme production and gut motions .Many digestive herbs act on the nervous system and can help stress –related problems like colitis.

We shall deal with constipation, diarrhea, gastritis, cholecystitis, haemorrhoids, indigestion, acidity, irritable bowel syndrome, colitis, nausea, vomiting and liver disorders.

Role of Medical Nutrition Therapy in Diabetes

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Diabetes is one of the most common chronic diseases, with no cure. Type 1, or autoimmune diabetes accounts for more than 95 % of cases in children and adolescents (Cabezas et al; 2007). Type 2 DM, occurs most frequently in people who are overweight, inactive, and older than 40 years of age. Over the last decade, there is a disturbing trend of increasing cases of type 2 DM in children all over the world, mirroring increasing rates of obesity (Arslanian; 2002) .

It is a growing global health problem. By 2030, more than 380 million people around the world will have this chronic, incurable disorder (IDF, 2005).

Some 246 million people worldwide have diabetes in 200. It is now one of the most common non-communicable diseases globally. Diabetes is the fourth or fifth leading cause of death in most developed countries and there is substantial evidence that it is epidemic in many developing and newly industrialized nations (IDF, 2003).

An important role of nutrition in diabetes is determining a meal plan that is appropriate for an individual that works together with insulin therapy And an exercise regimen to obtain blood glucose levels in an optimal range.

Key Words: Medical nutrition –Diabetes –Role –Therapy.

Nutrition and Osteoporosis

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Osteoporosis is a medical condition characterized by a lack of bone density, which affects women in particular when they reach old age. Symptoms of osteoporosis can be ostensibly visible particularly with there usually being deterioration in a person's vertebral support. As the person's spine decreases in bone density leading to spinal curvature, a person can appear more hunched over. The resulting weakened bones caused by osteoporosis can also leave sufferers more vulnerable to bone fractures.

As with most diseases, prevention is the ideal way to combat osteoporosis. Some measures people can take to prevent this disease include being mindful of one's diet. A sufficient intake of calcium helps in growing and maintaining healthy bones. Calcium supplements may be required if a person is not getting their recommended daily dosage of about 1000 mg of calcium. A sufficient intake of Vitamin D is also handy to help prevent osteoporosis. Vitamin D facilitates the process of calcium absorption in the body. Without enough of this vitamin, the body will absorb calcium from the bones instead.

A regular exercise routine is beneficial to bone health as well as one's overall fitness. People who engage in regular exercise during their childhood, adolescent and early adult years are most likely to reach maximum bone density than inactive people.

Nutritional Intervention in Alzheimer's disease

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The precise cause or causes of Alzheimer's disease are unknown, but research has revealed a number of interesting clues. Many of them point to nutritional deficiencies. For example, people with Alzheimer's tend to have low levels of vitamin B12 and zinc in their bodies. The B vitamins are important in cognitive functioning, and it is well known that the processed food that make up so much of the modern diet have been stripped of these essential nutrients.

Hormones II

Comparative Effect of Organic and Inorganic Forms of selenium on Diabetic Rats

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Objective: To study the effect of both organic and inorganic forms of selenium as hypoglycemic agent.

Material and methods: Nutritional experiments were performed for four weeks using twenty-four male albino rats weighting (190-192 g.). Rats were injected by alloxan solution 120. mg/kg b.w to induce hyperglycemia then were divided into three groups (8 rats each). The first group was fed the basal diet and considered as a control group. The second and the third group were fed the basal diet and daily given selenium yeast by the dosage of 30 day 60 ug/kg. b.w respectively.

Results: Our results indicate that the addition of selenium yeast by the dosage of 60 ug/kg b.w showed significantly decrease of blood glucose, Triglycerides and low, density lipoprotein, (LDL) cholesterol in diabetic rats compared to control group. While the levels of high-density lipoprotein (HDL) cholesterol, glutathione peroxidase and activity of superoxide dismutase showed highly increased compared to control group.

Conclusion: our study revealed that addition of selenium, as organic form was more effect than inorganic form as hypolygemic agent.

Hormones away and toward Alzheimer disease

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Alzheimer's disease (AD) is an irreversible, progressive neurodegenerative disorder that occurs gradually and results in memory loss, unusual behavior, personality changes and a decline in thinking abilities. Because there can be other causes of memory loss, definitive diagnosis of AD requires postmortem examination of the brain, which must contain sufficient numbers of plaques and tangles to qualify as affected by AD. Various mechanisms have been proposed to explain the pathway by which Amyloid β peptide induces neuronal cell death, including intracellular calcium accumulation, reactive oxygen species and nitric oxide production, decreased membrane fluidity and inflammatory. *Melatonin* has two different mechanisms of action as it functions as: an anti-amyloidogenic molecule and an anti-oxidant agent. *Estrogen* could prevent the formation of Amyloid β peptide by promoting the non-amyloidogenic α -secretase processing of Amyloid precursor protein. Several studies have identified androgens as endogenous regulators of Amyloid β peptide. The mechanism(s) by which androgens regulate Amyloid β peptide is not known, but presumably involves one or more of three general pathways; direct actions through androgen receptor-dependent pathways, indirect actions through estrogen pathways via testosterone aromatization to estradiol and indirect actions through gonadotropin pathways via testosterone modulation of the hypothalamic–pituitary–gonadal axis.

Keywords: Hormones, alzheimer disease

Impact of locomotion restraint during the neonatal period on some hormonal aspects and emotionality in male rats

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Background/Aim: This study was designed to investigate the impact of restraint stress during the early stage of life from the 21st day of the postnatal life to the 42nd day in rats. This period is considered crucial for the development and differentiation of the nervous system and any impairment in the neuro-developmental aspects may result in a life-long modification of the behavior and emotionality.

Methods: At the age of three weeks, young rats were exposed to 21 days of locomotion restraint for 6 h/day after which, the rats of both the control unstressed group and those that were exposed to the stressful regimen were subjected to the behavioral assessments using the exploratory (number of approaches) and aggressive behavior tests. After completion of these tests, the rats were sacrificed to determine the tissue brain cortex content of acetylcholinesterase (AChE) and total protein. In the serum, the levels of glucose, total cholesterol, testosterone, luteinizing hormone (LH), prolactin (PRL), thyroid stimulating hormone (TSH), thyroxine (T₄), tri-iodothyronine (T₃) in addition to the plasma levels of adrenocorticotropin (ACTH) were estimated.

Results: The present findings revealed that rats exposed to restraint stress exhibited significant shortcomings in the exploratory test with high rates of emotionality and excitability as revealed by their aggressiveness. These behavioral deviations were concomitant with disturbances in the endocrine balance as indicated by a decline in the levels of serum T₄, PRL, testosterone, LH and the rise in plasma ACTH as well as serum glucose and cholesterol levels.

Conclusion: The present studies explicitly indicate that exposure to stress during the early stage of life results in long-lasting behavioral and neuro-endocrine alterations in the adult rats.

Biochemical studies of autistic disorder

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Autism is a condition presenting in early childhood characterized by marked abnormalities in communication and social interactions as well as a restricted range of interests with aggressive and self-injurious behavior. Most individuals with autism also manifest mental retardation, typically moderate mental retardation with intelligence quotients (IQs) between approximately 35 and approximately 50. Autistic disorder is most common in males where four males are diagnosed with autism for every female. The etiology of autistic disorder is unknown hypotheses include; genetic abnormalities, exposure to toxic agents and prenatal, perinatal and postnatal infections. There are several biochemical studies to diagnose autistic patients by determination of androgens, neurotransmitters and heavy metals levels. In autistic disorder, if hydroxy steroid transferase (HST) enzyme is blocked by high mercury, this results in production of more testosterone and testosterone breakdown products. The elevated rates of testosterone result in neuronal cell apoptosis which results in neurodevelopmental disorders including autism and increasing serotonin transporter mRNA levels which leads to hyperserotonemia and decreased levels of brain serotonin which is important for normal fetal brain development.

Endemic Diseases

Ophthalmomyiasis Update

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This article is a review on research perspectives in this subject. Ophthalmomyiasis is the term applied to the infestation of the eye by larvae (maggots) of flies of the Order *Diptera* familyb OestridaeOn the basis of site of infestation, ophthalmomyiasis may be classified as External, Internal and Orbital ophthalmomyiasis. The likelihood of human ocular myiasis is higher in persons living in close proximity with infested animals, and under conditions of poor hygiene. Various species of flies are able to provoke ophthalmomyiasis. *Oestrus ovis* is the most common. Larvae most commonly attack the lids and conjunctiva. Diagnosis of ophthalmomyiasis based on patient history, clinical presentation and observation of the larvae Optic atrophy and visual loss in few cases however, may occur.

Oxidative Stress Status in Type 2 Diabetic Patients in Eastern Algeria

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Aim: The present study aimed to evaluate the oxidative status in Urban Algerian patients with type 2 diabetes mellitus (T2DM) treated with hypoglycaemic agents.

Material and Methods: This study has been conducted on 29 adult T2DM patients with a mean age 57.57 (ranged; 35-82) years compared to 11 healthy adult subjects (as control) mean age 49.80 (ranged; 27-73) years. Plasma glucose level and haemoglobin A1C (HbA1C) were determinations, as well as total antioxidant capacity (TAC) catalase (CAT) glutathione reduced (GSH) and lipid peroxides (MDA). Kidney function tests were also assessed for blood urea and creatinine.

Results: The result revealed that fasting plasma glucose level was a significantly higher ($p < 0.01$) and HbA₁C was marked increase ($p < 0.05$) in T2DM group compared to healthy subjects. Antioxidant parameters in T2DM patients versus healthy subjects have showed a disturbance. Patients revealed significant higher concentration of MDA ($p < 0.01$) than the matched controls. While, the activity of CAT showed a significant decrease ($p < 0.05$) in T2DM group compared to control ones. GSH and TAC concentrations were also found to be significantly decreased ($p < 0.001$) in the tested group than the healthy control ones. A negative correlation was found between (fasting plasma glucose levels, HbA₁C) and (TAC, CAT, GSH, MDA) in T2DM patients compared to healthy control subjects respectively. Results revealed no alteration in kidney functions as indicated by urea and creatinine laboratory methods.

Conclusion: We conclude that T2DM patients in our study undergo an important oxidative stress, even under hypoglycaemic control, they were considered to be poorly controlled.

Key words: Type 2 diabetes mellitus, Oxidative stress, total Antioxidant capacity, Catalase, GSH, MDA, Algeria

Testing Two Antimalarial Drugs on *Giardia Lamblia* in Experimentally Infected Hamsters

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This study aimed at testing the therapeutic effect of two antimalarial drugs, Artesunate and Mefloquine, singly and in combination on *Giardia lamblia* in infected hamsters. Forty golden Syrian hamsters, 100-120g, were infected each with oral administration of 20,000 *Giardia lamblia* cysts through an oesophageal tube. Infected hamsters were divided into four groups. One group was left as control infected untreated. Another group was treated with two successive oral doses of Artesunate 200 mg/kg body weight each, 24 hours apart. A third group was treated with a single oral dose of Mefloquine, 750 mg/kg body weight. The fourth group received combined doses of Artesunate 200 mg/kg body weight and Mefloquine 375 mg/kg body weight. Hamsters were given the appropriate drug, three weeks post-infection. Two weeks later stool analysis was performed and numbers of cysts/gm stool were counted and then all animals were sacrificed. The results revealed that high significant reduction was recorded in the group given double dose of Artesunate regimen when compared to the untreated control. The number of *Giardia* cysts was significantly reduced in the group given the single dose of Mefloquine regimen when compared to the respective untreated control. Assessment of cure was also performed by histopathological, transmission and scanning electron microscope examinations of the upper third part of the duodenum. Histopathological examination of the small intestine showed complete villus regeneration in the group given Artesunate regimen compared to the respective untreated control. Ultrastructural examination revealed that partial healing of the destructed intestinal cell projection by combined regimen, while complete healing could be detected in the group given Artesunate regimen compared with remarkable destruction of the intestinal cell projection by *Giardia* cyst in the control group. Scanning electron microscopic examination revealed disappearance of the vegetative forms (trophozoites) in the group given Artesunate regimen. The present study could be of value in endemic areas where people tend to develop drug resistance to the commonly used anti-giardiasis.

Key words: hamsters, *Giardia lamblia* cysts, intestinal giardiasis, Artesunate, Mefloquine.

In vitro antibacterial activities of rifampicin and Cinnamon on MRSA (Methicillin Resistant *Staphylococcus aureus*)

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Mixtures of cinnamon and rifampicin were tested for inhibitory activity against 45 *Staphylococcus aureus* isolates alone and in combination. The result indicate that MICs of cinnamon aqueous extract mixed with rifampicin for all tested *S. aureus* ranged between 16µg/ml of rifampicin plus 2mg/ml of cinnamon aqueous extract, that was compared with MICs of rifampicin cinnamon methanol extract combination, MICs of rifampicin and cinnamon hexane extract combination, rifampicin MIC and cinnamon different extracts MICs.

Time-killing curve of rifampicin in combination with cinnamon aqueous extract exhibit zero CFU after 10hrs incubation period at 37°C that was compared with time-killing curve of rifampicin in combination with cinnamon methanol extract, time-killing curve of rifampicin in combination with cinnamon hexane extract, time-killing curve of rifampicin and time-killing curve of cinnamon different extracts.

These results suggest that cinnamon aqueous extract combined with rifampicin is the best combination to be used for medical purposes as anti-staphylococcal infections.

Key word: Rifampicin, cinnamon, *staphylococcus aureus*, combination

Reproductive Medicine

Measurements of Intercellular Adhesion Molecules and Vascular Cell Adhesion Molecules in Pre-eclampsia

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Objective: To investigate the correlation between soluble forms of the intercellular adhesion molecule and vascular cell adhesion molecule and the severity of pre-eclampsia or its possible consequences for fetal growth.

Design: Prospective case-control study.

Setting: The Department of obstetrics and gynecology in Kasr El-Eini University hospital and the genetic research laboratory of the National Research Centre

Patients: Twenty women with uneventful pregnancy and thirty-nine women with pre-eclampsia divided into three subgroups: mild, severe and pre-eclampsia with fetal growth restriction.

Methods: ELISA-measurements of plasma intercellular adhesion molecule-1 and vascular cell adhesion molecule-1 were performed in a group of healthy pregnant women and three groups of women with varying degrees of pre-eclampsia.

Results: Serum intercellular adhesion molecule-1 concentration was higher in the pre-eclampsia group compared with the control group, but this difference was not statistically significant. Plasma concentration of serum vascular cell adhesion molecule was significantly greater ($P < 0.0001$) in all pre-eclampsia subgroups compared with the control group. Within the pre-eclampsia group, plasma concentration of serum vascular cell adhesion molecule-1 was significantly higher in the subgroup exhibiting fetal growth restriction ($P=0.03$) compared with mild pre-eclampsia.

Conclusion: The observed increases in plasma concentration of serum vascular cell adhesion molecule -1 suggest that measurements of this adhesion molecule may be useful in monitoring pregnancies with respect to the development of pre-eclampsia or fetal growth restriction.

Rapid Non-Invasive Fetal DNA Identification Test

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Background: The ability to detect cell-free fetal nucleic acids in pregnant women has greatly evolved over the past decade. Ample researches have explored the biology, kinetics, and clinical significance of cell-free fetal DNA in the maternal circulation. As a result, our overall understanding of fetal DNA trafficking has expanded. To date, two applications, gender determination and fetal Rh status, have translated into clinical medicine.

Objective: To be to amplify fetal short tandem repeat from circulating fetal DNA in maternal plasma as an aid in prenatal fetal DNA identification test.

Design: This is a pilot study

Patients: six pregnant women were recruited from the out-patient antenatal clinic of the medical services unit of the National Research Centre. All women were primigravidae in their first trimester with singleton baby.

Methodology: Women had an early ultrasound scan for dating. Fetal DNA was extracted and amplified from maternal plasma in their first trimesteric period using quantitative fluorescent polymerase chain reaction for nine autosomal loci and sex determined locus in all the cases. The paternal blood was also collected at the same time of maternal sampling for processing.

Results: The women age was more than 35 years with no family history of congenital abnormality or consanguinity among the couples. We have been able to extract fetal DNA out of the maternal plasma in all cases. No evidence of maternal DNA contamination has been observed. Half the cases had a female genetic make-up (XX) while the other had a baby boy genetic constitution as detected by amelogenin locus. Also, our results showed that it is possible to amplify the different nine autosomal loci and sex linked locus (amelogenin) in all the study cases.

Conclusion: This is the first trial to the best of our knowledge that has successfully been able to detect fetal DNA from maternal plasma to be used in prenatal diagnosis. This technique is a promising one as rapid non invasive fetal DNA identification test for aneuploidy. However, further studies are still needed with large numbers of cases.

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Prognostic and Predictive Factors of Breast Cancer among Egyptian Females

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Aim: The aim of this study was to address the prognostic as well as the predictive factors in the female Egyptian breast cancer patients to evaluate how much they affect the outcome; being free or had local recurrence or distant metastasis on follow up.

Methods: From January 1996 to December 2001, 4236 Egyptian women having breast cancer, with their prognostic factors which were: age, nodal status & number of affected lymph nodes, tumor size, tumor grade, hormone receptor status, surgical therapy that patients underwent (Modified radical mastectomy versus conservative breast surgery), and whether they received hormonal therapy or not, were analyzed retrospectively to detect their on the 5-year survival, using the patients' data sheets and pathology reports that were included

Results: Univariate analysis showed that, age ≤ 35 years ($P < 0.05$), mean number of affected lymph nodes ($P < 0.01$), or having > 4 affected lymph nodes ($P < 0.05$) RR 2.1 (95% CI; 1.13- 3.99), tumor size ($P < 0.05$), and tumor size of more than 2cm ($P < 0.01$) RR 18.8 (95%CI; 2.19-161.9) affected the 5- years survival rate significantly.

Conclusion: Lymph nodes metastasis, age less than 35 years and tumor size were the most significant prognostic factors affecting the breast cancer behavior among female Egyptian breast cancer patients.

Serum Progesterone in Preterm Labour

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Background: The process and timing of parturition are controlled by a complex cascade of hormonal signals between the fetus, placenta, and mother that ultimately converge to transform the myometrium from a quiescent to a contractile phenotype. In this context, progesterone is a key hormone. As its name implies, progesterone is a pro-gestation hormone; it promotes and sustains the pregnant state. The essential role of progesterone in maintaining pregnancy is unequivocal and commonly referred to as the hormone of pregnancy, and in all mammals studied to-date, no naturally occurring conditions have been identified in which pregnancy exists in its complete absence. Moreover, labor and delivery rapidly occur if progesterone synthesis or actions are disrupted

Aim: To evaluate the progesterone level as a marker for preterm labor

Patients and Methods: One-hundred pregnant patients between 28 and 37 weeks of gestational age were included in this study. They were divided into 2 groups: **Group A:** 50 patients with established preterm labor (C/P: efficient uterine contractions with cervical effacement and dilatation). **Group B:** 50 patients with no clinical symptoms or signs of preterm labor. Blood sample were taken and centrifuged serum for measurement of serum progesterone. All patients were between 20-35 years of age with history of preterm labor and carrying a singleton baby with unexplained preterm labour, eg.: cervical incompetence and their gestational age between 28 and 37 weeks. While, women were excluded from the study if they received tocolytic drugs or underwent cervical cerclage or the baby had intrauterine fetal death or major fetal congenital malformations. Furthermore, those women with over distension of uterus, e.g.: twins, poly-hydramnios, urinary tract infections or genital tract infections and uterine anomalies were also excluded from the study.

Results: The results of this study have shown that there was no statistically significant difference in serum progesterone levels at most gestational age groups between the cases of preterm labour and controls included in different gestational ages. However, serum progesterone reaches maximum level at 31 weeks of gestational age and that controls have higher serum progesterone levels than cases of preterm labor

Conclusion: The results of this study should be interpreted with caution. Despite the fact that there was no detectable significant difference in serum progesterone level in cases of preterm labour and controls in most of the gestational age groups, the effect of functional progesterone withdrawal has not be accounted for. The possibility that despite the normal serum levels of progesterone the withdrawal of its function may be brought about at receptor level rather than at serum hormone levels.

Self-Coherence, Coping, and Mood in Women Following Hysterectomy

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Disturbances in mood such as tension and depression are a problem for some women following a hysterectomy for benign or malignant conditions. A cross sectional design was used to examine the relationship between self-coherence, coping and mood in a convenience sample of 160 women who had hysterectomies for benign or malignant conditions. Subjects were recruited from women hospitalized on the Tanta Gynecology Department at Tanta University Hospital and El-Menshawly Hospital who were recovering from a hysterectomy for either a benign or malignant condition. The self Coherence Survey, the Coping Response Scale and the Profile of Mood States were administered three to five days after Surgery. Self Coherence survey included three factors (coherence, wholism, and introspection), Coping Response Scale included (cognitive coping, behavioral coping, and avoidant coping), and Profile of Mood States included six mood states (depression, tension, confusion, anger, vigor, fatigue) and total mood disturbance. The preliminary finding revealed that the majority of the sample had a hysterectomy for benign condition, married, illiterate/read and write, and their family income was enough for basic needs. There was a significant effect of nature of tumor (benign or malignant) on wholism and fatigue while the other variables have no significant relation with nature of tumor (benign or malignant). Conclusion: women who experienced more fatigue and have higher wholism were more likely to have had a hysterectomy for cancer.

Child Health Symposium

Transition to Adolescence: Introduction

Azza Abd El-Shaheed

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Adolescence is the life stage that bridges childhood and adulthood. In general, it represents the second decade of life. Many psychologists have begun to separate this life stage into several, including early adolescence (10-13 yrs), traditional or mid-adolescence (14-18 yrs), and late adolescence or youth (19-23 yrs).

The development of adolescents is characterized by continuity and discontinuity. **Physically**, adolescents are still influenced by their inherited genes, but now the inheritance interacts with new social conditions with family, peers, school, dating, and friendships. **Socially**, an adolescent has already spent years interacting with parents, friends, and teachers. Now, though, new experiences arise and relationships take on a different form, especially concerning dating and intimacy. And lastly, the **cognitive** development of adolescents involves thought processes that are more abstract and idealistic.

The major task of adolescence is to become 'your own person'. Adolescents learn to make choices and commitments, follow through with them, and stand up independently in the world. But teenagers swing back and forth between dependence and independence as they work on these tasks. False starts, mistakes, poor judgment, or impulsive action are part of growing up. To help adolescents grow up, parents need to be aware of these facts.

Problems and disorders frequently seen during this period include drug and alcohol abuse, juvenile delinquency, depression, eating disorders and adolescent pregnancy

Nutrition Related Disorders of Adolescents

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Concern for nutrition in adolescence has been rather limited, except in relation to pregnancy. Chronic malnutrition in earlier years is responsible for widespread stunting and adverse consequences at adolescence in many areas, but it is best prevented in childhood. Iron deficiency and anemia are the main problem of adolescents world-wide; other micronutrient deficiencies may also affect adolescent girl. Improving their nutrition before they enter pregnancy; could help to reduce maternal and infant mortality, and contribute to break the vicious cycle of intergenerational malnutrition, poverty, and even chronic disease. Food-based and health approaches will oftentimes need to be complemented by micronutrient supplementation using various channels. Promoting healthy eating and lifestyles among adolescents, particularly through the urban school system, is critical to halt the rapid progression of obesity and other nutrition related chronic disease risks. There are pressing research needs, notably to develop adolescent-specific anthropometric reference data, to better document adolescents' nutritional and micronutrient status. Related research of Child health department will be presented.

Behavioral and Psychosocial Problems in Adolescents

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Behavioral and psychosocial risks, including injuries, account for a substantial of both the utilization of health care services by adolescents and the causes of morbidity and mortality adolescents make fewer visits to physicians for ambulatory care than does any other age. Yet school age-children and adolescents are more likely than younger children to have unmet needs and delayed medical care. The health conditions having the greatest impact on the status of adolescent health in Egypt are, eating behavior and nutrition, psychosocial problems, injuries and substance use and abuse.

Health destructive behavior such as cigarette, bango and other illicit drug use are the leading causes of adolescent morbidity and mortality. Violent behaviors leading to deaths and injuries have a significant impact on adolescents, other psychological problems as withdrawal anxiety, depression as well as suicides will be discussed.

Spotlights on Behavior modification in Adolescents

Ihab Aid

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Behavior is the way an individual acts towards people, society or objects. It can be either bad or good. It can be normal or abnormal according to society norms. Society will always try to correct bad behavior and try to bring abnormal behavior back to normal. Behavior change is based on a simple idea of learning. It is based on the idea that behavior followed by reward is more likely to be repeated, or retained, than not.

On the other hand, behavior which results in an unpleasant outcome tends to be quickly dropped or disappear. Behavior modification is the use of empirically demonstrated behavior change techniques to improve behavior, such as altering an individual's behaviors and reactions to stimuli through positive and negative reinforcement of adaptive behavior and/or the reduction of maladaptive behavior through positive and negative punishment.

Today, behavior modification is used to treat a variety of problems in both adolescents and children. Childhood and adolescence disorders for which behavior modification has been successfully used include obsessive compulsive disorder (OCD), attention deficit/hyperactivity disorder (ADHD), phobias, enuresis (bedwetting), and separation anxiety disorder (SAD). The steps for dealing with problem behavior are identification of the problem, goal setting, establishment of the baseline, selection of intervention, and evaluation. These techniques have been used to treat a wide variety of disorders in children and adolescents, ranging from minor adjustment or developmental problems to autism.

Adolescent Fatigue: A Crossroad Symptom

Ola Ibrahim

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Fatigue is a common symptom in the community, with up to half of the general population reporting fatigue in large surveys.

Fatigue is the result of a more or less vague perception of a shift of balance and the need for rest to reestablish normal equilibrium. It ends up limiting physical, intellectual and psychic activity.

Fatigue may be a "normal" fatigue that appears after and proportionally to an effort. It is a healthy and necessary signal. This fatigue is momentary and it disappears with rest. IT may be also Morbid or "pathological" fatigue that is not related or is disproportional to any effort. This fatigue only slightly disappears and can even be accentuated with rest. When this fatigue cannot be explained by a medical condition such as chronic anemia, hypothyroidism, chronic heart disease, neoplastic disease, chronic infections, psychiatric illnesses, or drug abuse, it may represent chronic fatigue syndrome.

Chronic fatigue syndrome (CFS) has only recently been defined as a distinct disorder characterized by chronic (often relapsing but always debilitating) fatigue lasting at least 6 months (occasionally lasting much greater lengths of time), which causes impaired overall physical and mental functioning. Centers for Disease Control and Prevention (CDC) criteria have been broadly formulated in order to standardize research in the field, resulting in an operating framework that includes cognitive difficulties, pharyngitis, tender lymphadenopathy, muscle pain, joint pain, headache, sleep disturbance, poor sleep, and post-exercise malaise. Chronic fatigue syndrome is a common complaint among adolescents and is often attributed to hormonal changes during puberty, psychological struggles, and new educational and social demands

It seems likely that chronic fatigue syndrome is a heterogeneous disease with different pathophysiological disturbances that manifest with similar symptoms. Regardless of the pathogenesis, persons with chronic fatigue syndrome, like those with other chronic diseases, have a substantially impaired functional status that results in significant personal and economic morbidity.

Psychological factors seem to be of major importance in at least one third of adolescents with CFS, but their etiologic role remains primarily .Both in girls and in boys, higher depression and anxiety scores were related to higher fatigue scores. In addition highly sedentary or highly active independently increased the risk of persistent fatigue, suggesting that divergence in either direction from healthy levels of activity increases the risk for persistent fatigue. Mental health is important in the etiology of persistent fatigue. Fatigue severity was also related to unrefreshing sleep, muscle pain, and concentration problems. Headaches and tender lymph nodes were also significantly related to fatigue scores.

Interestingly, in girls, medication use, higher age, and lower age at menarche were associated with higher levels of fatigue.

Community Medicine

Linking Family Planning With Postabortion Services in Egypt

Nahla Abdel Tawaab

Regional Consultant, Population Co

Effective linkage between postabortion evacuation services and family planning is essential to reduce the incidence of repeat unwanted pregnancy and unsafe abortion. A collaborative study between FRONTIERS program of the Population Council, TAHSEEN / Catalyst Project, and Ministry of Health and Population in Egypt was conducted to test the feasibility and acceptability of integrating family planning with postabortion services in the Ob/Gyn ward through two models of integration. Model one provides family planning counseling to postabortion patients with referral to a family planning clinic, while Model two adds to counseling, the provision of family planning methods on the Ob/Gyn ward.

The study was conducted in six MOHP hospitals in Fayoum and Beni Suef governorates where staff received training on improved PAC services, a PAC brochure was provided to patients before discharge and family planning methods were placed on the Ob/Gyn ward. Sources of data included exit interviews with postabortion patients, provider interviews and follow up home interviews with the above women three months after discharge from the hospital to ascertain contraceptive use.

The study results suggest that both models were feasible and acceptable to providers, however, model I was easier to implement because it did not involve method provision. On the other hand, Model II was associated with improved quality of services. However, patients' acceptance of family planning methods before discharge was very low. The study concludes that every postabortion patient should receive adequate family planning counseling before discharge and should be offered a choice of receiving a family planning method on the ward or at a clinic near her residence.

Profile of Teenage Pregnancy in Hadramout, Yemen

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Objective: A cross sectional study was designed to collect socio-demographic and obstetric data about female teenagers who have pregnancy and visiting primary health care centers for antenatal checking.

Subjects and methods: Data were collected by a trained 60 medical students of the 6th level in Hadramout University during their post in primary health care centers from 20 May – 10 June 2008. A convenience sample of 237 teenagers who attending in the 12 PHC centers for antenatal care checking were constitute the study subjects.

Results: Fifty one out of 237 (21.5%) pregnant women are their age 17 years or less while most of them were from rural areas with statistically significant difference in both age groups (p-value <0.002). While most of the study teenagers are housewives (232/237 97.8%) but their husband jobs are mostly have nonprofessional jobs with significant difference between both age groups (p-value <0.005).

A high prevalence of anemia in teenager pregnant women were reported (76.7% of them had Hb level less than 11 g/dl) but their were no significant difference between mean Hb level in those at age of 17 years or less (9.9 SD=1) and those at age >17-<20 years (10.1 SD=1.18) p-value >0.05

About one third of pregnant teenagers were second or multigravida (81/237 pregnant women 34.2%) but only 66 of them were delivered before. The majority of second/multigravida were delivered normally (57 pregnant women 86.4%) while only 31 of them (47%) gets their births in health facility where LSCS was done for 9 pregnant women.

The outcome of the pregnancy in teenager multigravida are 67 children; three of them were stillbirth and other 6 babies were died within the first week of their life getting the total children died at perinatal period of 9 children ; so the perinatal mortality rate was very high in teenagers ($9/67 \times 1000 = 134/1000$ births).

Conclusions: Teenage pregnancy is common and accepted in Hadramout in Yemen; the main consequences are high prevalence of anemia and high perinatal mortality rate.

Key Words: Teenage pregnancy, Yemen

Athlete Triad among Adolescent Females

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Objectives: To estimate the prevalence of the female athletes' triad among adolescent female athletes. It also aimed at examining the interrelationships among disordered eating behavior, menstrual irregularity and low bone density among them.

Methods: This is a cross sectional study that included 215 female adolescent athletes in the age range 8-18 years participating in ballet (n=129) and swimming (n=86) sports. Subjects were asked to fill out a questionnaire which included personal and demographic data, menstrual history, training history, dietary history, osteoporosis risk assessment questionnaire and anthropometric measurements. Bone mineral density scan was performed to 32 of the ballet dancers, who were randomly selected.

Results: The mean age of the study group was 12.9 ± 3.1 . About 71% of ballet girls had $BMI \leq 18.5$ and seven of them were underweight and had $WAZ < -2SD$ (5.4%). The mean BMI of the ballet girls was significantly lower compared to the swimming group, ($P < 0.01$). The mean age of menarche was 12.8 ± 1.3 , with no statistically significant difference between the ballet and swimming groups ($P > 0.05$). Although a higher percentage of the ballet group was showing menstrual dysfunction than the swimming group yet the difference was not statistically significant, ($P > 0.05$). It was found that the majority of the studied athletes (61.9%) received $< 70\%$ of their required balanced diet. According to ISCD criteria only one case was showing osteopenia with decreased BMD at the hip (Z score $< -2SD$). However, according to WHO criteria 8 girls had osteopenia, 4 girls had decreased BMD in at spine and hip, 3 showed decreased BMD at hip only and one at the spine only. A significant + correlation was shown between Hip & Spine Z scores and years of training and BMI and between Hip Z score and age.

Conclusions: The prevalence of the 3 components of the triad collectively was not found in the present study. However a significant proportion of the athletes suffer from the individual components of the triad and this could be a warrant that a substantial number of the young athletes may be at increased risk for the full triad later on. Identification and health education to athletes at risk in this age group could decrease the incidence of long term deleterious consequences.

Keywords: female triad- athletes- adolescents - osteopenia- disorder eating- menstrual dysfunction.

Impact of Some Risk Factors and Climatic Treatment on Profile of Psoriatic Patients

Amani T. Abdel Hameed, W. Foad, M. Abdel Hamid, L. El Etreby, H. Emam

Objective: The aim of this work is to identify & study the role of some risk factors and effect of climatic treatment on psoriatic patients.

Methodology: A case-control study was conducted over a period of six months from March 2007 to August 2007 on a randomly selected sample of 105 psoriatic patients from different socioeconomic classes; 58 were treated in Safaga and 47 were attending the Dermatology Outpatient Clinic In National Research Centre (NRC). A control group of 138 males and females was randomly selected from different socioeconomic classes. Psoriatic patients were subjected to a self-administered designed questionnaire including demographic data, risk factors utilization of different types of treatment and anthropometric measurements. Clinical severity assessment of the disease was done by a dermatologist. The control group was subjected to another questionnaire where the clinical assessment and utilization of different types of treatment were excluded. Data entry and statistical analysis were done using the statistical software program SPSS under version 15.

Results: the mean age of cases group was 37.9 ± 17.1 and control group was 36.9 ± 14.0 with no significant difference ($P > 0.05$). Percentage of males and females among cases group were (73.3% & 26.7%) respectively, while in control group they represented (54.3% & 37.4%) respectively. Employees represented the highest category (41.0% & 58.7%) among cases and controls respectively. Psoriasis affected: males two times more than females (OR 2.3; $P < 0.002$), less educated than more educated ($p < 0.001$), smokers two times more than non smokers (odd's ratio 2, 67), obese more than non obese ($p < 0.001$), patients with positive family history than negative ones ($p < 0.001$). Regarding severity of psoriasis; severe cases were found more among: males than females, smokers than non smokers (odd's ratio=3.8, 4.5) respectively, patients with duration of illness from 10-19 years ($p < 0.05$) and those who used climatic treatment than other treatments (odd's ratio=5.2). There is significant difference between Safaga and NRC patients regarding: sex, level of education, smoking, family history, types and sites of psoriasis with p (< 0.01 , 0.04, 0.002, 0.01, 0.01, 0.03 and 0.04) respectively. 70.7% of psoriatic patients treated in Safaga showed improvement. Regarding client satisfaction with climatic treatment in Safaga 86.2% were satisfied ($p < 0.001$).

Conclusion: Smoking, sex, level of education, obesity, stress and family history were identified as important risk factors that have impact on psoriatic patients. Climatic treatment played an effective role in improvement of psoriasis lesions.

Recommendations: more studies about modifiable risk factors and life style were recommended to prevent and control the severity of the disease.

Development of a set of quality standards for haemodialysis units

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Introduction: End Stage Renal Disease [ESRD] represents one of the major health problems in Egypt. There is sufficient evidence that implementation of quality management in the Health sector will reduce the cost and provide higher quality.

Objectives: To develop a quality standards for haemodialysis units and to measure the compliance of measure the compliance for the developed set of quality standards and guidelines within this study with a sample of hemodialysis units.

Subjects and Methods: The study was carried out in four phases. In phase one a preliminary quality standards were formulated through reviewing of literature and a meeting with an expert of nephrology. In phase two a panel of experts in the filed of nephrology and haemodialysis was selected and invited to participate to come up with the final version of quality standards through the Delphi technique. In phase three description of each standard was written with its verification. In phase four field visits to haemodialysis units were conducted to assess the compliance of these units. Seven Hospitals from Cairo and nine Hospitals from Giza were included in the study. 160 patients were observed during their sessions of haemodialysis.

Results: The results included two parts, part one included the final version of the guidelines and standards for hemodialysis units. Part two included the analysis of the field visits. The results showed that the overall mean percentage of compliance among all hospitals was 59.3 ± 11.2 and the range was 43.8 to 83.4. The comparison between the overall mean percentage of compliance between cairo and Giza revealed no significant difference while there were significant differences between the two governorates regarding certain items which were infection prevention and control, and facility guidelines.

Conclusion: The overall compliance to the developed practice guidelines for hemodialysis units in Egypt is acceptable. It was evident that 25% of studies hemodialysis units were under the acceptable level i.e. the overall mean percent of compliance was less than 50%. Only one hospital experienced high acceptable level (more than 80%).

Keys: Quality, Delphi technique , Hemodialysis,

Evaluation of screening programs in cancers

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Screening, in medicine, is a strategy used in a population to detect a disease in individuals without signs or symptoms of that disease. Although, WHO guidelines for screening programs were published in 1968, they are still applicable today. The importance of screening is for early case finding enabling earlier intervention and management, assessing the magnitude of the disease. Screening could be also used as a part in surveillance program. Screening is very useful in certain types of diseases especially for cancers like cancer breast, cancer cervix and cancer lung. Types and characters of screening test should be clearly defined. There are certain characteristics that can differentiate the screening test from a diagnostic test. Evaluation of screening programs that are applied to cancers includes evaluation of input resources such as the type of screening test, the manpower and financial resources, evaluation of process, output and outcome measures of screening programs. There are some biases could be done changing the result of the screening program such as lead time bias, over-diagnosis bias, selection bias ..etc. so, they must be put into consideration to be avoided as much as possible.

Keywords: screening programs- evaluation- cancers

Molecular and Clinical Genetics

Terminal Excimer And Exciplex Fluorescence: A Sensitive Oligonucleotide Probes

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Reversible hybridisation of complementary polynucleotides is essential to the biological processes of replication, transcription, and translation. Physical studies of nucleic acid hybridisation are required for understanding these biological processes at a molecular level. The development of new sensitive, safe and easy to use exciplex probes system for the detection of DNA is of relevant important^{1,2}. The aim is to develop fluorescence based technique to work in homogenous and then heterogeneous assays systems. Exciplex signal with DNA hybridisation were determined in solution using fluorescence measurements and complementary fluorophore-labeled oligonucleotides. One oligonucleotide probe was labeled with a 5'-terminal pyrene, and the other was labeled with 3'-terminal naphthalene. The juxtaposition of the two labels in double-stranded complexes results in a strong exciplex signal at a longer wavelength (~480 nm) thereby providing the means to differentiate between single-stranded DNA from double-stranded DNA. Since measurements were based on fluorescence, DNA denaturation and association could be monitored routinely at low DNA concentration. The importance of the presence of various counter cations (Na⁺, K⁺ and Mg²⁺) on exciplex signal intensity was evaluated. The results obtained represent the first case of an oligonucleotide terminally located probe system based on exciplex fluorescence emission. Terminally located probes are selective enough to detect single base mutations with good sensitivity, thus could be used to detect mutations using an exciplex system.

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Most Encountered Genetic Disorders in Egypt: Classification and Registry

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Diseases with genetic bases have been a major health problem to every society. Heavy economic, social and health burdens are imposed on the afflicted family as well as the society. In general genetic diseases are relatively prevalent among the Arab population, and are a significant cause of morbidity and mortality in this population. Incidence of congenital malformations among Egyptians ranges from 1,16 to 3,17 %. This is probably due to the high consanguinity rate (20 – 40 %) among Egyptians. Early diagnosis of various genetic disorders and malformations with proper intervention (medical, hormonal, dietary, and interventional by stimulation of motor & cognitive development) will reduce the burdens of genetic disorders at the individual, familial and community levels. A comprehensive classification system is necessary for genetic diseases in order to provide a framework in which to scientifically study the etiology, pathogenesis and treatment of diseases in an orderly fashion. In addition, such system gives clinical geneticists a way to organize the health care needs of their patients. Classifications of various disorders were reviewed, to determine which classification to follow. We revised classifications adopted by Ismail (1996), Rimoïn et al. (2002), ICD-10 – CM (2003), and ICF (2004). However these classifications were based on the etiological diagnosis, pathological diagnosis, phenotypic diagnosis and / or mode of inheritance. Therefore, we established our own classification of genetic disorders, as a modification of the previous mentioned classifications. The main purpose of our classification is to include four major descriptive categories (axes), that geneticists consider to identify the genetic disorders. These axes are the phenotypic axis, the etiologic axis, the differential diagnosis axis, and the referral axis, which includes patients seeking genetic counseling. The Final Report of the study (1/7/2004 – 30/6/ 2007) included 3417 cases, of which 2686 cases (78.6 %) were referred from private sectors, self-referral and universities; while 731 cases (21.4 %) cases were referred from the selected hospitals and primary health care centers (PHCCs) of Ministry of Health and Population. Each patient was subjected to meticulous clinical examination, pedigree construction, anthropometric measurements, and differential diagnosis. We established an integrated classification for the genetic disorders referred to Genetic Clinic of NRC. This classification considers the etiological, phenotypic, differential diagnosis and referral categories (axes), and is entitled “Genetic/Diagnostic/Referral Classification”. It includes 18 disease groups. The results, discussion, and recommendations will be presented.

Molecular Characterization of Brain and Spinal Cord Neurogenetics Diseases

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Autosomal dominant neurodegenerative disorders are a large heterogeneous group of neuronal degeneration. Huntington's disease (HD) and Spinocerebellar ataxias (ADSCAs) are specific examples of this group caused by abnormal expansion of an unstable polymorphic CAG trinucleotide repeat, encoding glutamine, located in the coding region of the corresponding gene. HD and ADSCAs are characterized by movement, gait disturbance, cognitive, and behavioral abnormalities. Disease onset is typically around middle age (40-50 years). This presentation presents interesting, familial and sporadic, cases of juvenile forms of both diseases, in which juvenile Huntington disease (JHD) cases were originated from different parental sex without notable change in the size of transmitted alleles from either sex. Even though contraction of repeat number was shown in the first HD family extended from paternal origin. Families with Spinocerebellar ataxia type 2 (SCA2) showed in one of them early progressive clinical presentation started in infancy with marked CAG expansion and characteristic polyphagia. Polymerase chain reactions using long template Taq polymerase was the molecular tool used for the detection of all cases, normal or expanded. Our data predicts the multifactorial nature of neurodegenerative diseases and illuminates the potential role of individually determined, genetic and non-genetic factors in modifying neuronal susceptibility to degeneration, modulating disease liability and inducing either remarkable intergenerational clinical anticipation or obvious neuronal stability delaying disease's onset and progression.

Hereditary Spastic Paraplegia, HSPG is one of the common Autosomal recessive brain diseases, affecting the corticospinal tract and characterized by leg Spasticity and weakness. There are 4 known gene loci located on different chromosomes. Linkage analysis was the molecular methodology used to allocated the HSPG phenotype to its causative genes. Through this method an Egyptian family with HSPG was assigned to SPG11 located on chromosome 15. Sequencing analysis of SPG11 gene revealed a novel mutation, stop codon and premature termination of the protein.

We are looking through a more wide collaborative research to identify a specific phenotype correlated to specific gene mutation for subsequent early detection and management.

Chromosomal Abnormalities in a Referred Population for Karyotype, Role of FISH to Refine the Diagnosis

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The aim was to evaluate the cytogenetic findings in Egyptian cases referred for suspected chromosomal anomalies and to clarify the role of FISH to refine the clinical diagnosis. Cytogenetic study was performed on 4890 cases referred to Cytogenetic Department, National Research Centre. Referrals were grouped into 20 different categories of which genetic counseling represented the highest group 19,2% followed by short stature 12.4%, repeated abortions 10.2%, MCA/MR 10% Down syndrome 9.2%. Chromosomal aberrations were identified in 17.8% of cases; sex chromosome abnormalities represented 22% of the abnormal chromosomes. The most common autosomal abnormality was Down Syndrome 52%. In structural chromosome aberrations of autosome, deletion was the most common 6,8%, inversion 6% and translocation 5.2%. Different FISH probes were used when indicated, It was applied in 10% of referred cases as in cases of microdeletion syndromes, marker chromosomes, cryptic translocation, sex chromosomes identification and subtelomeric deletion. Accurate and refine cytogenetics and molecular cytogenetics diagnosis in our cases was the corner stone in proper genetic counseling.

Genetic Studies of Limb Reduction Defects

Samia A. Temtamy, Sawsan H. Abdel-Hady, Fadia A. Salem,
Mona O. El-Rouby, Rania H. Tomerak, Heba A. El-Awady

Limb reduction defects are an important group of congenital limb malformations that require thorough assessment. They can be isolated or associated with other malformations as a part of syndrome. Causes of limb deficiencies include single gene disorders, chromosomal abnormalities or teratogens. However, the etiology remains unknown in many cases. The present study aimed at the proper diagnosis and classification of cases with limb defects referred to the Limb Malformations Clinic, NRC in order to provide accurate and efficient genetic counseling. The study included 22 cases (14 males, 8 females) with limb reduction defects. Their ages at presentation ranged between 20 days and 16 years. Detailed history including teratogen exposure and affected family members, three-generation pedigree analysis, complete examination of different body systems with specific studies of different parts of the limbs documented by radiological examination, photography, and basic anthropometric measurements were conducted for all cases. Dermatoglyphic analysis, cytogenetic studies and other investigations were done whenever indicated. Cases were classified according to Temtamy and McKusick based on both anatomical and genetic considerations into 8 groups; isolated terminal transverse defects (n=5, cases 1-5=22.7%), terminal transverse defects as a part of syndrome (n=1, case 6=4.54%), isolated radial defect (n=1, case 7=4.54%), radial defect as a part of syndrome (n=7, cases 8-14=31.8%), isolated ulnar defect (n=2, cases 15, 16=9.09%), ulnar defect as a part of syndrome (n=3, cases 17-19=13.6%), pre- and post-axial defect (n=1, case 20=4.54%), and axial defect as a part of syndrome (n=2, cases 21, 22=9.09%). The results of this study have shown that limb absence or reduction defects are not an uncommon malformation among Egyptian children. Delineation of the exact cause, correct classification and proper diagnosis are needed to face this disabling chronic problem. Molecular studies are recommended for proper diagnosis, genetic counseling and understanding of the pathogenesis.

Key words: Limb reduction defects, terminal transverse defects, Holt-Oram syndrome, Oculo-auriculo-vertebral spectrum, EEC syndrome, Fanconi anemia, Ulnar-mammary syndrome, TAR syndrome.

An Overview of Genodermatosis Cases Presenting at the Clinical Genetics Clinic in Cairo Egypt

Ghada El-Kamah

Objective: Genetic diseases are relatively prevalent among the Arab population, and are a significant cause of morbidity and mortality in this population. We aim at reviewing genodermatosis cases frequenting the Human Clinical Genetics Clinic, classifying them and emphasizing how many rare disorders were disclosed.

Methods: Classifications were based on the etiological diagnosis, phenotypic diagnosis in addition to histopathological studies when needed.

Results & conclusion: Patients were classified clinically to several according to our system modified between dermatologists' as Rook's and Emery's clinical classification. They were classified into groups including; pigmentary skin disorders, chromosomal breakage syndromes, disorders of keratinization, vesiculobullous disorders, connective tissue disorders, Ectodermal dysplasias and others.

During establishing our classification many atypical phenotypes and rare cases were disclosed. In this overview and classification we emphasize the importance of dermatological clues for identifying some genetic disorders.

We also report the encountered rare disorders and phenotypic variability found during the study. Classifying patients is necessary for proper diagnosis, genetic counseling & consequently proper management decision.

Reporting rare cases and various phenotypes throws the light on such called orphan disorders and helps in their diagnosis and enhances referral to specialized genetic centers like ours which in turn helps better registry and statistical data.

Microcephaly, malformation of brain development and intracranial calcification in sibs: Pseudo-TORCH or a new syndrome

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We report on five sibs affected by congenital microcephaly, growth retardation, sloping forehead, bitemporal grooving and micrognathia. Generalized tonic-clonic seizures started very early in life. Postnatal brain computerized tomography (CT) presented cortical band-like calcification, calcification of basal ganglia and brain stem while brain magnetic resonance imaging (MRI) revealed abnormal gyral pattern, marked loss of white matter, dysplastic ventricles, polymicrogyria, hypogenesis of corpus callosum and cerebellar hypoplasia. No abnormalities of the internal organs, eye, or skeleton were found to be associated with this syndrome. Fetal Magnetic resonance imaging helped reaching the diagnosis in utero in one patient. Three patients died in the first years of life while the others within days after birth preceded by high fever and status epilepticus. These patients present many overlapping features with pseudo TORCH syndrome; however, the imaging findings are quite different. We propose that the distinct pattern in these sibs constitutes genetic disorder of microcephaly, developmental brain malformation and intracranial calcification of likely autosomal recessive inheritance

Bioactive Natural Products II

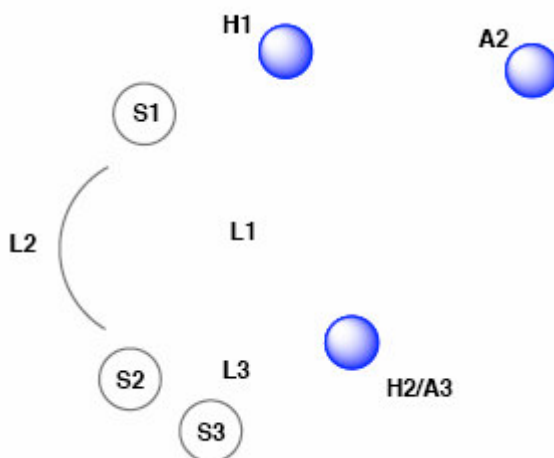
From Biologically Active Natural Products to Commercially Interesting Drug Candidates

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The talk will give an example of how potent and selective compounds with a commercial potential can be developed from the biologically active natural products obtained from screening programs, and illustrate how the possibilities at hand today may be utilized. In addition, it will discuss how to commercialize a scientific invention. The scientific part is about novel ligands for the benzodiazepine binding site of the GABAA receptor. GABA, γ -aminobutyric acid, exerts an inhibitory effect in the CNS by binding to three different classes of receptors: GABAA-, GABAB- and GABAC-receptors. GABAA- and GABAC receptors are both ligand gated chloride ion channels, while GABAB receptors are G-protein coupled receptors, and altering the effect of GABA is one of the most powerful therapeutic strategies in order to treat central nervous system (CNS) disorders. GABAA receptors are ubiquitous in the CNS and represent important therapeutic targets for anxiety disorders, cognitive disorders, epilepsies, mood disorders, schizophrenia and sleep disorders. GABAA receptors are membrane proteins that are assembled by five different subunits, which form a pentameric structure.



The study was made with the assumption that all ligands, independent of showing agonistic, inverse agonistic or antagonistic properties, share the same binding site. Furthermore, they concluded that a planar or close to planar geometry is required by a ligand for binding to the BZDR. In the pharmacophore model developed, shown above, H1 denotes a hydrogen-bond donating site whereas A2 is a hydrogen-bond accepting site. H2/A3-site is bifunctional with the ability to both donate and accept

hydrogen-bonds. L1-L3 designates lipophilic pockets and S1-S3 represents steric repulsive ligand-receptor interactions.

Our work was based on this model and on the fact that we discovered several flavone derivatives that had affinity for the benzodiazepine binding site of the GABAA receptor. From a systematic synthetic variation of the flavone scaffold, the pharmacophore model was refined and expanded, and eventually useful for the process of scaffold hopping that provided us with novel types of benzodiazepine binding site ligands.

New polyacetylene derivative and flavonoids from *Santolina chamaecyparissus*. L

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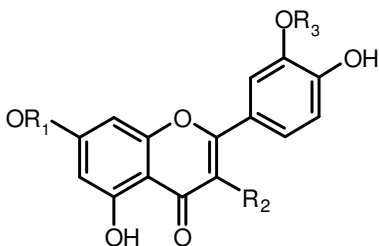
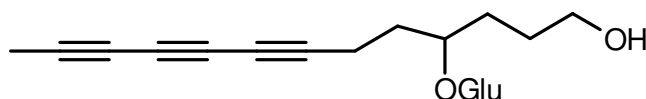
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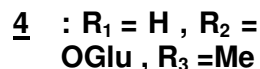
Santolina chamaecyparissus L. (Asteraceae) is an aromatic Mediterranean species, widely used in traditional medicine [1]. Several products (acetylenes, essential oils, flavonoids, sesquiterpenes) obtained from *Santolina species* have been investigated for their biological activities, both from *in planta* and callus cultures, albeit with lower yields in the latter *S. oblongifolia* have anti-inflammatory properties attributed to the action of apigenin, luteolin, quercetin, herniarin, scopoletin, scopolin and aesculetin [2]. The leaves and flowering tops of *Santolina chamaecyparissus* are antispasmodic, disinfectant, emmenagogue, stimulant and vermifuge [3]. The oil exhibit antiplatelet activity [4] and is also used in perfumery [5]. We present in this work the isolation from the ethyl acetate soluble part of the aqueous methanol extract, a new polyacetylene derivative: 4-*O*-glucosyl-trideca-7,9,11-triyn-1-ol **1** and three flavonoids : luteolin **2**, luteolin 7-glucoside **3** and isorhamnetin 3-glucoside **4**. The two latter compounds are described for the first time in the genus. The structure of the new compound **1** was established through SMIE, IR and RMN 1D and 2D experiments.



1

2 : R₁ = H , R₂ =
H , R₃ =H

3 : R₁ = Glu , R₂ =
= H , R₃ =H



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A New guaianolide and other constituents from *Achillea ligustica*

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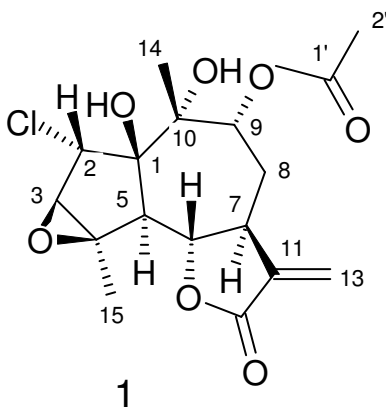
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The aerial parts of *Achillea* species are widely used in folk medicine [1-4]. As part of our ongoing program of research on medicinal plants of Asteraceae family [5-8], we report our results on *Achillea ligustica* All collected in June 2004 in Jijel in the eastern Algeria.

The literature survey showed that several previous studies on this species collected from different areas of Europe have been undertaken. These studies reported on essential oils [9-12], flavonoids [13] sesquiterpene lactones [14,15], piperidine amide [16], lignans [17] and biological activities of its methanolic extract [18].

The flowering aerial parts of *Achillea ligustica* All. (Asteraceae, Anthemideae) growing in Algeria afforded a new chlorinated guaianolide **1** named Algerianolide besides seven known compounds, including three monoterpenes, two sesquiterpenes, β -sitosterol and a flavonoid. The structures of the compounds were elucidated by extensive application of one- and two-dimensional NMR spectroscopy as well as by HREIMS. The structure of the new guaianolide was also established by X-ray diffraction analysis.



Key words: Algerianolide; Chlorinated guaianolide; *Achillea ligustica*;
Asteraceae;

Anthemideae.

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Wild Medicinal Plants and Human Health

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Wild medicinal plants are important health and economic components of the floras in developed as well as developing countries, because they contain many biologically active compounds. *Citrullus colocynthis* (L.) Schrader (Cucurbitaceae) is an example of these plants. It contains alkaloids, fixed oils, sterols and other components. The plant is purgative, exhibited antipyretic, antiinflammatory, antihypertensive and antitumor activities, used for the treatment of diarrhoea, anaemia, skin diseases, bronchitis and rheumatism. *Glycyrrhiza glabra* L. (Leguminosae) is another example of these plants. It contains triterpene saponin glycyrrhizin (6-13%) as potassium and calcium salts which have sweet taste, flavonoids, volatile oils, sterols and polysaccharides. Extract of the roots is used for hoarseness of voice, cough, respiratory ailments, gastritis, and abdominal pains and relax uterine muscles. The plant is febrifuge, emmenagogue, demulcent and expectorant. Boiled roots were used to facilitate the period due to the presence of oestrogenic hormones in enough amounts. Roots chewed for rheumatism, Addison's disease and various inflammatory conditions. Glycyrrhizin is cured chronic gastric ulcers orally, exhibited an antiviral effect against various viruses (e.g. HIV virus), effective in preventing diabetic complications; it has antiallergic and antiinflammatory actions and used in the treatment of peptic ulcer. Another important plant is *Rumex vesicarius* L. (Polygonaceae) that contains flavonoids and anthraquinones, is used for hepatic diseases, constipation, calculi and bad digestion. It is cooling, laxative, stomachic, tonic and analgesic agent. It is used for heart troubles, pains, and tumors, diseases of the spleen, cough, flatulence, asthma, bronchitis, piles, scabies, dyspepsia, leucoderma and toothache. The plant is also vomiting, appetizer and diuretic agent. Final example of these plants is *Tribulus terrestris* L. (Zygophyllaceae) which is antispasmodic, diuretic, tonic, anthelmintic, aphrodisiac, astringent, emmenagogue and is used for dysentery, pains of the bladder, abscesses, anemia and lumbago. Several studies were carried out to cultivate many wild medicinal plants using tissue culture techniques in order to increase the active ingredients qualitatively and quantitatively such as production of Harman alkaloids from cell suspension cultures of *Peganum harmala* L. (Zygophyllaceae), and ascorbic acid from cell suspension cultures of *Fagonia cretica* L. (Zygophyllaceae). There are many other medicinal plants will be discussed in the review.

Keywords: Wild Medicinal Plants, Human Health

Investigation of the biosynthetic origin of the diterpenes in gorgonian *Pseudopterogorgia acerosa*

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Objective: The main goal of this work was to investigate the biosynthetic origin of diterpenes in gorgonian *Pseudopterogorgia acerosa* and to investigate the possibility of diterpenes production by the coral associated bacteria.

Material and Methods: Live coral *Pseudopterogorgia acerosa* was treated with different antibiotics, specific for different bacterial groups. The treated coral homogenate was prepared and assayed for conversion of radiolabeled terpenes precursor (³H-GGPP) into radiolabeled diterpenes. Mixed bacterial cultures were started from different coral tissues. Cell free extract were prepared from the isolated mixed culture and assayed for radiolabeled diterpenes biosynthesis. Production of diterpenes by the mixed bacterial cultures was investigated using LC-MS analysis.

Results: Investigation of the effect of different antibiotics on live coral demonstrated that the biosynthetic capability of diterpenes by the coral homogenate, from ³H-GGPP, was reduced by the effect of antibiotics mixture which suggested bacterial origin of this diterpene in *P. acerosa*. Furthermore, coral treated with nalidixic acid (gram negative bacterial inhibitor) resulted in about three fold increase of the biosynthesis of the radiolabeled diterpenes by the coral homogenate which suggested that the diterpenes producer may be gram positive bacteria. The cell free extract of mixed bacterial cultures isolated from the coral tissues was able to convert the radiolabeled diterpenes precursor, ³H-GGPP, into diterpenes. Mixed bacterial culture, isolated from the coral, showed low level production of diterpenes

Conclusion: The results provided strong evidences that the diterpenes biosynthesis in *P. acerosa* is due to bacterial symbionts rather than the coral tissues.

Keywords: Natural products *Pseudopterogorgia acerosa*, Diterpenes, Marine bacteria, Symbionts

Surgery

Diabetic Foot Infection for Surgical or Medical Treatment: A 100 Case Review

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Background and Objectives: Foot infections are the most common problems in persons with diabetes. Several therapeutic strategies are used: medical treatment with antibiotics alone or combined with surgical treatment. Comparing medical and medical-surgical treatment in our patients with diabetic foot will be reviewed.

Patients and methods: one hundred diabetic patients with serious diabetic foot infection were treated at Vascular Surgery Unit, Al-Hussein Hospital. Careful assessment was done including clinical assessment, renal and liver functions, plain X-Ray and Duplex study. We divided our patients on basis of treatment into 3 groups: Group A treated medically without surgical intervention, Group B received intravenous antibiotics (IV-AB) plus surgical debridement in 1st 3 days and Group C received IV-AB plus aggressive surgical debridement in 1st 3 day.

Results: Comparing with antibiotic therapy alone, early surgical debridement or limited amputation in the fore foot combined with antibiotic therapy decreasing periods of hospital stay as well as the need for subsequent above ankle amputation. We consider aggressive debridement & limited amputation in the fore foot as a form of surgical intervention and not as treatment failure. Group A, who received antibiotics with no surgical intervention was associated with a higher rate of above ankle amputations. Our methods in dressing of diabetic foot wound after surgical intervention will be illustrated by photos and video presentation. **Conclusion:** early surgical debridement or limited amputation in the fore foot combined with antibiotic therapy help limb salvage.

Keywords: Diabetic foot, debridement, medical treatment

Inferior Vena Cava Filter: Prophylaxis & Treatment of Pulmonary Embolism

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Deep venous thrombosis (DVT) develops within the deep veins of the lower extremities, but it also can involve, or arise solely from, the veins of the pelvis or the upper extremities. The treatment of choice for DVT and pulmonary embolism (PE) is anticoagulant therapy. Inferior vena cava (IVC) filters have been developed to prevent PE in patients with venous thromboembolism who have a contraindication to anticoagulation or in patients considered to be at very high risk for PE.

Placing a barrier between the clot and the larger portions of the venous system to prevent migrations of venous clots toward the pulmonary circulation reduces, but does not eliminate, the risk of symptomatic PE in patients with proximal DVT in the short-term and does not prevent small PE. Insertion site thrombosis may also occur.

IVC filters may be permanent or retrievable filters. The filter should be able to trap most, if not all, thrombi to prevent new or recurrent PE. The filter should be nonthrombogenic and should maintain caval patency. The filter should be made of a biocompatible material that is durable and noncorrosive. The filter's shape and structural integrity should be maintainable for a long time. The filter's delivery system should have a low profile and allow easy placement. Clot trapping should be reasonably effective even if filter deployment is suboptimal. The filter should not migrate after deployment. No perforation of the IVC should occur. The filter should be nonferromagnetic to allow MRI to be performed after its placement. The filter may be retrievable.

Our Experience in Al-Azhar University Hospitals on retrievable IVC filter insertion for temporary protection in patients at high risk of pulmonary embolism will be discussed and illustrated by photos and video presentation in details.

Keywords: DVT, IVC filters, Retrievable filters

Endovascular management of primary varicocele

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Objectives: To assess the endovascular interventions for the treatment of varicocele and to examine causes of treatment failure.

Patients and methods: Of 154 patients with clinical varicocele associated with subfertility or other symptoms (pain/swelling), percutaneous transluminal interventions under fluoroscopic control were attempted in 20 patients. Venographic findings were defined in those patients whom had been chosen for coil embolization and/or sclerotherapy. Among subfertile patients, semen analyses had been done before and 3 months after the procedure in 15 patients (for purpose of comparison). Internal spermatic venography was done before and after the procedures. In 10 patients sclerotherapy was done, while coil embolisation was done alone in 4 patients and combined with sclerotherapy in 2 patients.

Results: Retrograde intervention was technically successful in 16 of the 20 patients. Two early failures were associated with venous spasm provoked by technical inexperience, while in the other 2 patients anomalous venous anatomy was accused. Sperms concentration improved significantly in 90% of patients undergoing embolization.

Conclusion: Endovascular intervention is an effective alternative to surgical ligation of varicocele, carried out under local anaesthesia as an outpatient procedure, it is cost-effective, associated with minimal morbidity and most patients are able to return to normal daily activities immediately.

Keywords: Endovascular intervention, varicocele, treatment

Role of Balloon Angioplasty in the Management of Critical Lower Limb Ischemia

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Background and aim: Untreated critical lower limb ischemia (CLI) most commonly leads to amputation. Successful revascularization will reduce the amputation rate in patients presenting with CLI. Two general techniques of revascularization exist: open surgical procedures and endovascular intervention. Endovascular revascularization is less invasive, less costly, needs no anesthesia and has a low incidence of complications. This study aimed to evaluate the safety and efficacy of balloon angioplasty as an option for revascularization of CLI patients.

Patients and Methods: Thirty Patients with critical limb ischemia treated with percutaneous treatment angioplasty (PTA) of the infra-inguinal vessels in vascular surgery unit in El-Hussein university hospital over one year according to clinical and angiographic findings. Clinical findings included rest pain, ulceration and /or gangrene while angiographic findings confirmed stenosis or occlusion in the infra-inguinal arteries. Ankle brachial pressure index was recorded.

Results: Technical success was achieved in 93.33% of patients while clinical success in the form of improvement of rest pain and increase in healing of ulcers was achieved in 21 Patients (70%). Complications of the procedure were low and in only 2 patients above knee amputation had been done.

Conclusion: According to our results, CLI patients with lesions categorized as TASC A and B, irrespective of their co-morbid conditions, should be considered for percutaneous treatment as a first line treatment. PTA as the first choice revascularization procedure for CLI is feasible, safe and effective for limb salvage, with low complications rate

Keywords: lower limb ischemia, revascularization, balloon angioplasty

Vascular Complications Occurring After Diagnostic Cardiac Catheterization and Percutaneous Coronary Interventions: Incidence and Management

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Objectives: This study was conducted on 48 patients (32 males and 16 females) with access site complications requiring vascular surgical consultation to evaluate the incidence and surgical management of arterial injuries resulting from diagnostic cardiac catheterization and percutaneous coronary interventions (PCI).

Patients and Methods: The work was done over 2-years period at the Chest Hospital, State of Kuwait. All patients were carefully evaluated by history taking, physical examination and routine laboratory investigations. Abdominal ultrasound and Duplex study were also performed whenever indicated. Suitable surgical vascular interventions were carried out

Results: The reported complications were: femoral artery pseudo aneurysm in 24 patients (50%), acute arterial thrombosis in 9 patients (18.7%), haematoma at the groin in 7 patients (14.5%), retroperitoneal haematoma in 2 patients (4.1%), intraperitoneal hemorrhage in one patient (2%), bleeding from the catheter puncture site in 3 patients (6.2%) and arteriovenous fistula (A/V fistula) in two patients (4.1%). Blood transfusions were needed urgently in 8 patients (16.6%) for patient's resuscitation before surgery due to massive blood loss. Surgical intervention include: fourteen patients (29.1%) underwent successful ultrasound guided pseudo aneurysm compression and 34 patients required surgical interventions. These surgical interventions were performed under local anaesthesia in 31 patients (91.1%), and under general anaesthesia in 3 patients (8.8%). Of ten patients (20.8%) with femoral artery pseudo aneurysm, 7 patients (14.5%) underwent primary arterial repair, in the remaining three patients (6.2%), saphenous vein patches were used. Groin haematomas were evacuated in 7 patients (14.5%). In 3 patients (6.2%) with severe catheter site bleeding primary repair was performed. In 9 patients (18.7%) with acute lower limb ischaemia, successful thrombectomy was performed in 5 patients (10.4%). In 2 patients (4.1%) thrombectomy was performed and the arteriotomy closed with saphenous vein patches. While in the remaining 2 patients femoro-popliteal synthetic bypass graft was performed. In two patients (4.1%) with A/V fistulas direct repair of femoral artery and vein were performed. In three patients (6.2%) with massive retroperitoneal haematoma and intraperitoneal haemorrhage, ileo-femoral bypass grafting were performed due to exsanguinating arterial perforation and extensive intimal dissections.

Conclusion: Diagnostic cardiac catheterization and PCI are associated with a low but significant risk of access site complications which is higher during PCI than with diagnostic procedures. Early recognition and management is very important to minimize the risk of these complications.

Keywords: cardiac catheterization, complications, arterial injuries

Foreign body inhalation in Babylon province` bronchoscope view

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This is prospective study of 48 case of F.B. inhalation in the tracheo-bronchial tree over 2 year from Jan 2004 to Jan 2006 at Hilla Teaching Hospital.

The majority of patients were children below 2 years of age, there were about 36 children (75%), about 10 of them (20.78%) between 2-5 years and 2 patients (4.2%) above 5 years, 32 patients were male and 16 female and male to female ratio was (2:1). Forty patients (83.3%) were located in the right main bronchus, in 6 patients (12.5%) in the left main bronchus and only in 2 patients it was impacted in the trachea (4.2%).

Regarding the type of F.B. was water-molen seed, in (30%) was peanut and the remaning was included beads plastic and metal objects (pin, needles) the wate molen was common in summer seson.

Regarding the radiological examination the majority of F.Bs were radiolucent, they were removed successfully with no mortality.

The complication includes cardiacarrest (2 patients), one child developed suxamethonium space and one had laryngeal oedema which required tracheostomy.

Dermatology

The use of DPC in Treatment of Alopecia Areata

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Diphenylcyclopropanone (DPCP, Diphencyprone DPC) has been described in the chemical literature since 1972 as a potent contact allergen comparable to DNCB & SADBE.

In 1983, Happle et al. first reported a therapeutic trial of DPC in 27 patients with extensive AA, obtaining a complete response in 67% of cases.

It has been used in the treatment of warts and melanoma.

DPC is neither mutagenic nor teratogenic.

DPC is extremely light sensitive and decomposes on exposure to both sunlight & fluorescent light in less than 2 weeks in acetone.

The powder has a shelf-life of more than one year, but when dissolved in acetone it can be stable for around 3 months (1-6 m) in 4-8 °C.

Unilateral scalp hair regrowth after unilateral treatment, with subsequent application and regrowth of hair on the entire scalp on entire scalp application argues against a simple placebo effect or spontaneous remission.

SADBE and DPCP have a success rate of about 50%-60% in hair regrowth in AA.

Their use should be restricted to more extensive disease (> 40% scalp involvement).

In a six months follow up of 19 patients successfully treated with DPCP, 10% had complete hair loss, 43% had developed patchy alopecia and 37% showed no hair loss (MacDonald-Hull and Cunliff, 1989).

Psoriasis and Insulin Resistance

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Background: Psoriasis as a chronic inflammatory skin disorder is characterized by a variety of immunologic and inflammatory changes that may predispose to peripheral insulin resistance and the development of type II diabetes mellitus (DM). In our study, we tried to detect the relation between impaired glucose tolerance (IGT), insulin resistance (IR) and psoriasis and their possible correlations to severity of psoriasis.

Materials and Methods: This study comprised 30 psoriatic patients and 30 controls. All cases were subjected to complete history taking, clinical examination including psoriasis area and severity index (PASI) score. Serum blood glucose levels (fasting and 2-h postprandial) were estimated and ELISA technique was applied in order to measure the fasting serum insulin levels. Impaired glucose tolerance (IGT) was estimated based on fasting and 2-h postprandial blood glucose levels. Detection of insulin resistance was achieved by evaluation of insulin sensitivity and beta cell function indices, which were applied on all patients and controls

Results: Results showed that 16.7% of patients had insulin resistance (IR) with *compensatory hyperinsulinaemia*, where as, 33.3% had impaired glucose tolerance (IGT) with *decline in beta cell function* in comparison to normal controls with no significant correlation to severity of the disease (measured by PASI score).

Conclusions: Our study demonstrated significant increase rates of both impaired glucose tolerance and insulin resistance in psoriasis. The detection of IR has an important value in reducing the risk DM and prevents its complications and other components of insulin resistant syndrome (IRS) in psoriatic patients

Key words: Psoriasis, Insulin resistance.

Prevalence of Hepatitis C Virus Infection in Egyptian Patients with Lichen Planus

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Background: Recently, hepatitis C virus (HCV) has been implicated in triggering lichen planus. The reported prevalence of HCV infection in patients with lichen planus shows wide geographical variations.

Aim: To investigate the prevalence of HCV infection in patients with LP in Egypt. **Methods:** A total of 50 patients with LP and 1042 controls were screened for HCV infection, using a third generation enzyme-linked immunosorbent assay and polymerase chain reaction.

Results: Twenty one of 50 patients (42%) with LP were found to be HCV positive, whereas 152 subjects (14.58%) in control group were found to be HCV positive ($p < 0.001$). The association of HCV and lichen planus carries significant risk nearly three times more than in control group (RR= 2.9, CI=2.0-4.1). Twenty-one patients with lichen planus had oral and cutaneous lesions and 29 patients had cutaneous lesions only. The prevalence of HCV in the group of patients with oral and cutaneous lesions (52.3%, 11 patients) was higher than in the group of patients with cutaneous lesions only (34.5%, 10 patients) but the difference is not statistically significant ($p = 0.3$)

Conclusions: The prevalence of HCV infection in LP patients is higher than in the controls supporting the view that the coexistence of the two diseases is probably more than coincidental and it is appropriate to screen all patients with LP for HCV infection.

Key words: Hepatitis C virus, Lichen planus

Evaluation of Heat Shock Protein 70 in Psoriasis

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Objective: Psoriasis is a common chronic, relapsing, noninfectious inflammatory skin disease. The concept that psoriasis has a genetic basis has been accepted for many years and it is commonly thought of as a complex trait. Heat shock proteins (HSPs) are group of proteins whose expression is increased when the cells are exposed to elevated temperature or other stress. These proteins can be induced by a range of cellular stressors including increased temperature, oxidative stress and nutritional deficiencies. Hsps have been proposed to play an important role in the pathogenesis of psoriasis. The aim of this work is to detect the expression of HSP70 in psoriasis and its correlation to the disease severity and to review potential role of HSP70 in pathogenesis and therapy of psoriasis.

Subjects and Methods: Skin biopsies were taken from 20 patients with different severity of untreated chronic plaque-type psoriasis and from 20 healthy volunteers. Antibodies to HSP70 were analyzed immunohistochemically. Immunoreactivity intensity distribution index (IRIDI) scores including the proportion of immunoreactive cells and their staining intensity were calculated in the basal, suprabasal, superficial as well as the whole epidermal layers of patients and controls.

Results of our study revealed that differential and total IRIDI scores for HSP70 expression showed highly significant higher values in psoriatic patients compared to controls. Statistical differences were found between the different groups of patients; according to their disease severity and controls. Positive correlations also existed between IRIDI scores of patients and disease severity.

Conclusion: Our study provides further evidence on the importance of Hsp70 in the pathogenesis of psoriasis and shows increased Hsp70 expression in psoriatic epidermis correlated to increased severity of psoriasis. To our knowledge no previous studies made correlation with HSP70 expression in psoriasis and disease severity. Finally, we are looking forwards to the application of a new therapy that targets Hsp70 or its receptor CD91 and helps in treatment of psoriasis.

Key words: Heat shock protein 70, psoriasis

Study of HLA-Cw6 in psoriatic patients

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Introduction: Psoriasis is a multifactorial disease, some studies showed that the inheritance of psoriasis is autosomal dominant with reduced penetrance, eight loci giving statistical evidence of linkage to psoriasis have been identified, PSORS1 locus resides within the major histocompatibility complex (MHC) on the short arm of chromosome 6, as predicted by HLA association studies.

The putative gene at PSORS1 is considered to be the major genetic determinant for psoriasis, perhaps accounting for 35-50% of the heritability of the disease.

HLA-C genes are considered as potential psoriasis susceptibility genes. Psoriasis has bimodal distribution of age of onset. The bimodal peak in disease onset could be taken as evidence for the existence of two pathogenetically distinct forms of the disease, similar to the model of diabetes mellitus. Thus, type 1 is hereditary, strongly HLA associated (particularly HLA-Cw6), with an early onset and more likely to be severe. Type 2 is sporadic, HLA unrelated, of late onset and usually mild. The aim of the work is to assess the association of HLA-Cw6 with psoriasis among Egyptian patients.

Material and Methods: This study included 30 patients with psoriasis vulgaris and 10 healthy volunteers as controls. The patients included 20 males and 10 females with age ranging from 20-60 years. They had psoriasis vulgaris with various degrees of severity. All patients were subjected to: Full history taking, clinical examination, PASI score calculation, skin biopsy and molecular study including DNA extract, PCR amplification for HLA-Cw6 alleles using Dynal SSP (sequence specific primer), detection of the amplification by agarose gel electrophoresis and lastly detection of Cw6 alleles.

Results: Patients with positive family history had an earlier age of onset.

Twenty six patients out of 30 for HLA-Cw6 Gene, 4 patients were negative.

HLA-Cw6 gene was positive in 4 persons. Significant difference was observed as ($P = 0.05$). Patients who are HLA-Cw6 positive had more severe disease.

Patients having the HLA-Cw6 gene tend to get the psoriasis at an earlier age than those who were negative for the gene.

Conclusion: HLA-Cw6 is strongly expressed in psoriatic patients. It has a strong influence on age of onset, extent of involvement and severity of the disease. However, its presence in non psoriatic patients suggests that psoriasis is a multifactorial disease. Patients with positive HLA-Cw6 and those with positive family history, tend to get psoriasis earlier in age. This may highlight the importance of the genetic factor in etiopathogenesis of psoriasis.

Key words: Psoriasis – HLA-Cw6.

Physiology II

Pranayam Breathing and Pulmonary and Cardiovascular Functions in Patients of Chronic Obstructive Pulmonary Disease (COPD)

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Objective: To examine whether Pranayam (Yoga) breathing, improves pulmonary function and hemodynamic parameters in patients with COPD.

Material and methods: 11 patients (mean age 43.91 ± 20.561 yr; mean BMI 21.9 ± 5.5) and 6 controls (43.5 ± 14.6 yr, BMI 25.4 ± 3.2) were taught Pranayam breathing technique. Their pulmonary (Medigraphics Elite Whole Body Plethysmograph) and cardiovascular functions (Task Force Monitor, Graz) and respiratory "well being" (VAS scale), were recorded before, and after an interval of Pranayam breathing practice. Respiratory parameters were expressed as % change of predicted values.

Results: Of the cardiovascular and autonomic parameters, only the peripheral resistance was higher in the controls ($p < 0.02$).. However, pre treatment respiratory parameters of patients were significantly lower than those of controls. In patients, Maximum Expiratory and Inspiratory respiratory pressures (MEP and MIP) did not improve with breathing exercise. The FVC, FEV1 and FEV1/FVC % increased slightly. The small airways airflow (FEF_{25-75%}) improved from 23.38 ± 7.96 to 25.75 ± 8.55 , as did the Peak Expiratory Flow Rate (63.38 ± 12.42 to 67.50 ± 7.09). The sympatho-vagal balance (LH/HF ratio) shifted slightly towards sympathetic activity ($0.48 \pm 0.21\%$ and $1.7 \pm 1.84\%$). The increase in the total peripheral resistance (TPR, dynes.sec/cm²) with a decrease in stroke volume complimented this shift. None of these trends were statistically significant. VAS scores for respiratory discomfort were inconclusive

Conclusions: Pranayam breathing tended to improve ventilatory function without betterment of the respiratory pressures. Many confounding factors are likely to have influenced the outcome. The sympatho-vagal balance, contrary to expectations, turned towards sympathetic.

Effect of Honeybee on CCl₄-Induced Hepatic and Renal Dysfunction in Rats

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Background/Aim: Honey, a natural bee product, serves as a source of natural antioxidant, which is effective in reducing the risk of heart disease, cancer, immune system decline, cataract, and different inflammatory processes. The aim of this study was to examine the effect of honeybee on CCl₄- induced toxicity in rat liver and kidney compared with those of silymarin.

Methods: Nitric oxide (a pro-oxidant product) and malondialdehyde (MDA , an index of lipid peroxidation) levels were used as markers of oxidative stress induced hepatic and renal impairment, hepatic and renal total antioxidant capacity were determined to evaluate the changes in antioxidant status. In addition, some selected indices of liver and kidney function were also done. The rats used in this study were divided into 12 groups (9 each) as follows: 1) control and each one of 2) CCl₄ (100mg /Kg twice weekly), 3) honey (5 ml/ Kg daily), 4) silymarin (20 mg /Kg daily), and 5) honey plus silymarin for two weeks, groups 6,7 and 8 were pretreated with either one of honey alone, silymarin alone or the combination of both for two weeks then given CCl₄ for other two weeks, group 9 was given CCl₄ for two weeks then lasted without treatment for other two weeks, groups 10, 11 and 12 were given CCl₄ for two weeks then treated with each one of honey alone, silymarin alone or the combination of both for other two weeks.

Results: Administration of CCl₄ to rats resulted in serious hepatic injury, where a significant increase in each of ALT, AST and ALP activities, relative to the control group, was observed. Kidney function was also affected .This appeared from the significant increase in each of urea, creatinine and uric acid levels were recorded. Moreover a significant increase in hepatic and renal MDA and serum NO was observed with concomitant significant decrease in TAC content in both liver and kidney. In addition, a significant increase in serum glucose was noticed. In contrast treatment with silymarin, honey and the combination of both silymarin and honey especially honey before or after CCl₄ intoxication reversed CCl₄-induced changes in the above mentioned parameters towards the normal values. It is worth-noting that treatment with silymarin or honey after CCl₄ intoxication was more effective than when administration before CCl₄ intoxication.

Conclusion: The present study clearly indicated that honey and silymarin attenuate liver and kidney dysfunction induced by CCl₄ in rats as an experimental model for hepatic and renal toxicity, Honey bee may exert its therapeutic role against oxidative stress produced by CCl₄ intoxication via its antioxidant properties.

Keywords: Honey bee, CCl₄ intoxication, liver function, kidney function

Protective Effects of *Ulva Lactuca* against Acetaminophen-Induced Kidney Injury

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Paracetamol or acetaminophen (APAP) is a popular over-the-counter analgesic and antipyretic that is used to treat fever and pain. It is safe and effective at therapeutic doses. However, in the case of overdose, kidney injury in addition to liver injury has been observed in humans and laboratory animals. The present study has been conducted to evaluate the protective role of the aqueous extract, polysaccharide and ethanolic extract of *Ulva lactuca* (UL) (marine edible green algae) on experimental acetaminophen-induced nephrotoxicity. Albino rats-administered acetaminophen (1g/kg body weight; three times orally/week for two weeks) were pre-treated with ulvan aqueous extract, polysaccharide and ethanolic extract of *Ulva lactuca* (100 mg orally/kg body weight) for two weeks and then injected orally with acetaminophen for another two weeks together with the algal extracts mentioned above. The acetaminophen-induced nephrotoxicity was evidenced by histopathological changes including intertubular fibrosis, degenerative changes in some tubules, hyperemic glomeruli and presence of inter and intratubular albuminous material as well as elevations in serum biochemical variables related to kidney dysfunction (creatinine, urea, uric acid and minerals). The pre-treatment of these acetaminophen-administered rats with ulvan aqueous extract, polysaccharide and ethanolic extract protected against acetaminophen-induced histological deteriorations of the kidney and elevations in serum creatinine, uric acid and urea as well as minerals including sodium, potassium and chloride levels to various extents. Concerning oxidative stress and antioxidant defense system, the kidney glutathione content and superoxide dismutase activity of acetaminophen-administered rats were increased as a result of pre-treatment with ulvan polysaccharide, ethanolic extract and aqueous extract. Lipid peroxidation was significantly decreased as a result of pre-treatment with ulvan aqueous extract and polysaccharide. The present results also indicate that while kidney catalase activity was markedly lowered in all pre-treated acetaminophen-administered rats, peroxidase activity was only significantly decreased as a result of aqueous extract pre-treatment. Kidney glutathione-S-transferase activity, on the other hand, was significantly increased and decreased as a result of pre-treatment of acetaminophen-administered rats with ulvan aqueous extract and polysaccharide respectively.

Taken these data together, it can be concluded that *Ulva lactuca* extracts and its polysaccharide could protect the kidney against acetaminophen-induced toxicity. However, further clinical studies are required to assess the safety, benefits and hazards of the ulvan polysaccharide and extracts in human beings.

Key Words: *Ulva lactuca* – acetaminophen – nephrotoxicity – albino rats – oxidative stress.

Green Tea Catechins as Hypolipemic Agent - Probable Mode of Action

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Background and Aim: The present study aimed ~~mainly~~ to elucidate the hypocholesterolemic effect of catechins (major constituent of green tea) and its mechanism of action. Cholestyramine, (quaternary resin) which has hypocholesterolemic effects was selected as a comparative drug.

Materials and Methods: In vivo and in vitro studies (mass spectrometry) were carried out ~~one~~. Experimental hypercholesterolemia was induced in experimental rats and classified to three groups. The first group ~~one~~ received catechins orally in a dose of 10mg/kg body weight daily, the second group received Cholestyramine orally in a dose of 100mg/kg body weight daily, while the third group received no drugs and served as control. 24 hours prior to the end of the study fecal residues were collected and its cholesterol contents was determined. Blood samples were taken and used for biochemical determination of total cholesterol (TC), Triacylglycerol (TAG) and amino transferase enzymes (ALT & AST). Liver samples were isolated and processed for determination of cholesterol content and histopathological examination In vitro studies and mass and mass spectrometry were carried out.

Results: (this sentence to Mat+Meth - Fecal cholesterol output was demonstrated significantly increased while other serum parameters (TC, TAG, AST and ALT) showed significant decrease.

Conclusion: From our in vitro and in vivo studies we ~~her~~ concluded that the hypocholesterolemic effect of catechins is predominately attributed to formation of an insoluble complex between catechins and cholesterol, thereby decreasing intestinal absorption and increasing fecal cholesterol excretion.

Keywords: Catechins, Cholestyramine, Cholesterol, Triacylglycerol, Amino transferase enzymes

Aging Of the Immune System

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As we age, our bodies begin to dysfunction more frequently. The immune system is one function of the body profoundly affected by aging and the ability to fight off infection and immunocompetence declines significantly. The immune system begins to lose some of its functions and cannot respond as quickly or as efficiently to stimuli. Age-related changes in the immune system have been observed at all levels ranging from chemical changes within the cells; to differences in the kinds of proteins found on the cell surface, and even to alterations in entire organs some of these changes may seem trivial, but when all of these changes are added up, they radically affect the overall health of the individual. One major change that occurs as the body ages is a process called thymic involution, also the functions of T-cells will be affected in a myriad of ways which will be discussed in detail.

Since the immune system interacts with every organ in the body a clearer understanding of the immunological changes due to aging is critical for designing effective health care for the elderly.

Key words: aging, thymus, T-cell, NK-cells, health care.

Anthropology II

Waist Circumference and Central Fatness of Egyptian Primary School Children

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Our objective is to test degree of correlation between waist circumferences measurements of children aged 6-11 years, with their adiposity. The study was cross-sectional included 1283 healthy children (681 boys, 602 girls). The sample was classified to normal, overweight and obese according to their BMI. Highly positive correlation was detected between waist circumference and BMI, body fat%, subscapular and suprailiac skinfold thicknesses; and their sum for both sexes. Central overweight and obesity were indicated except at age 6.5 ± 1 year for both overweight boys and girls; and obese girls. Conclusion: waist circumference is a good indicator for central fatness (overweight and obesity) in children aged 8.5 and 10.5 ± 1 year.

Key words: Waist circumference, central fatness, Egyptian school children.

Body Fat Distribution in Obese and Overweight Children

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There are two types of fat storage which represents about 80% of all body fat: *visceral* (surrounding organs) which is more pathogenic, and *subcutaneous* beneath the skin. The distribution of fat, differ according to sex and ethnicity. The android (male, or 'apple shaped') fat pattern is represented by relatively greater amounts in the upper body, while the gynoid (female, or 'pear') pattern is represented by greater amounts in the hip and thigh areas. However, these are the predominant patterns - but both 'apple' and 'pear' shaped distribution can be found in either gender. Female lower body fat is less metabolically active than that in the abdominal region, and is programmed to become mobilized during pregnancy and lactation. The changing sex hormonal levels during puberty contribute to the development of sex differences and large individual changes in fat distribution. Exercise seems to result in more subcutaneous fat loss. Diet alone results in more visceral fat loss.

Ethnic differences in fat distribution have been demonstrated in children. Percentage body fat appears to be lower in black; perhaps particularly black African children; compared with Caucasians. In contrast, many Asian races, and possibly also Hispanics, carry a higher percentage fat mass, particularly abdominal; than Caucasians

Obesity should be defined as pathological excess body fat or adipose tissue. In Egypt, the prevalence of obesity among school children is less than the figures in UK and USA. Different studies showed that obese children tend to accumulate SAF more than IAF, while in overweight children both SAF and IAF increase simaltinously in association with whole-body fat. Increased levels of body fatness in children leads to the decrease in the muscle mass which affect the children growth, and early occurrence of metabolic syndrome. It also tracks to adulthood obesity.

Although BMI is the most popular method for assessment of obesity, it fails to give an idea about body fat content. The abdominal fat is more important to be assessed than the total body fat. However, use of other anthropometric methods to assess body fatness are more informative, such as skinfold thickness and the equation derived from them to assess body fat, and waist circumference which is direct measure of abdominal girth. Combinations of skin fold thicknesses and circumferences can be modeled to yield relatively accurate estimates of IAF and SAF in the absence of direct measurement as imaging techniques.

Measurement of body composition in children and adolescents is becoming more widespread. The most practical of them are bioelectrical impedance analysis (BIA), and Dual-energy x-ray absorptiometry (DXA) .There are also computerized tomography (CT) and magnetic resonance imaging (MRI) which are more informative about body fat distribution. They image different sections in the body to illustrate the IAF as well as the SAF, but their use is limited to the research studies.

Similarity of treatment of trauma in workers and high officials of the pyramid builders

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The present work focuses on evidences of treatment for fractures and amputation in skeletal remains of the Old kingdom Giza (pyramid builders). Analysis takes in consideration the social class to test the hypothesis of applying the treatment for every body or to the elite only.

The material consist 271 skeletons from workers and high official skeleton were examined macroscopic and radiological for evidence of treatment of fractures and amputation.

The incidence of fractures was 43.75% and 26.41% in male and female workers respectively. While it was 20.73% and 16.66% in male and female high officials respectively. The most effected bone was the right ulna. All healed fractures were realignment.

Two cases of amputation showed healing. Healed fractures and amputation indicate medical intervention. There was no difference between the lines of treatments in both groups.

Relation of birth weight to maternal smoking

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As maternal smoking has been associated with a reduction in newborn birth weight, our objective in this study is to estimate how the pattern of maternal smoking throughout pregnancy influences newborn size. One hundred twenty pregnant smoking women were enrolled in a prospective study. Data were collected regarding maternal age, education, parity, body mass index and cigarette consumption. Cigarette use was defined as self-reported consumption before pregnancy, at the time of the study enrollment, and in the third trimester. Urine specimens for determining cotinine levels were collected. Statistical analysis was performed based on bivariate correlations and multiple linear regressions.

Of the smoking parameters examined, maternal third-trimester cigarette consumption was the strongest predictor of birth weight percentile ($r = -0.25$, $P < 0.001$). Pre-pregnancy smoking volume was not significantly associated with birth weight percentile ($r = 0.008$, $P = 0.32$). Additional factors contributing to birth weight include gestational age, maternal body mass index and parity. We conclude that maternal third trimester cigarette consumption is a strong and independent predictor of birth weight percentile. This supports the hypothesis that reductions in maternal cigarette consumption during pregnancy will result in improved birth weight, regardless of the pre-pregnancy consumption levels.

Medical Students Session

The Role of Nutrition in the prevention of Hepatocellular Carcinoma in Egypt

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The aim of this review is to evaluate the magnitude of one of the most prevailing cancer, in developed and under developed countries, which is the Hepatocellular carcinoma and to find out the effect of nutrients as it can be a cheap remedy acting as an adjuvant to the conventional treatment, or be a mere agent in the prevention of hepatocellular carcinoma. During the past decade, on the international level, Hepatocellular Carcinoma has been found to be the seventh most common cause of death in males, and the ninth in females. Meanwhile, on the national level, it was estimated to be the second most common cause of death in males, and the fourth in females. Hepatitis B & C were known to have significant role in its occurrence affecting 91% of the population in developing countries. Furthermore, some specific nutrients were proved to provide major opportunities for the incidence of hepatocellular carcinoma, whether preventing its occurrence in patients with chronic liver diseases, or increasing the probability of its development. It was found that certain nutrients did prove to be preventative against its de novo incidence, and onchotransformation of chronic hepatitis to hepato-cellular carcinoma Such as: Antioxidants, Vitamin K, Vitamin A, and unsaturated Fatty Acids However, some other nutrients stimulate the development of Hepatocellular Carcinoma such as: high iron intake, especially in hemochromatosed patients, and saturated fatty acids.

Egypt has achieved successful steps to overcome this problem, by programming progressive local strategies, including: Providing a lower cost for health care delivery; Besides, the Ministry of Health and Population informs chronic patients with specific nutritional recommendations, aiming to reduce the western lifestyle behavior as well as body fatness, and suggests the consumption of limited energy dense foods, serving red meat for supplying iron, and eating plenty of vegetables, legumes and fruits, no matter if some are fresh, tinned, frozen or dried, it all counts.

Progress in the global fight against hepatocellular carcinoma is delayed by a number of obstacles, concluded in: the inefficient data quality, lack of cancer registries, as well as poor utilization of its screening and the low public awareness of cancer. These obstacles cause the presence of gaps in the strategies programmed to overcome the problem, and further researches should be done to tackle these gaps both at the international and national levels.

Keywords: hepatocellular carcinoma, nutrition

Magnitude of Renal Disorders and Renal Failure in Egypt

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The prevalence of dialysis patients is presumed to have increased from 10 per million populations (PMP) in 1974 to about 165 PMP in 1995. Most patients are treated by haemodialysis while less than 10% are treated by intermittent peritoneal dialysis. This review aimed at providing figures for magnitude of renal disorders and renal failure. A hospital based study on the worldwide prevalence, etiology, and severity of acute renal failure (ARF) at 54 hospitals in 23 countries from September 2000 to December 2001, revealed that 5.7% and that the prevalence varied among countries from 2.1% to 22.1%. The epidemiology of end-stage renal disease (ESRD) in Egypt has never been examined on a national scale. Schistosomiasis, which is considered a common cause of renal failure in Egypt, is accused of being the cause of about 30% of chronic renal failure, most of which is due to obstructive uropathy and a small percentage is due to schistosomal nephritis. About 15% of patients with hepatosplenic schistosomiasis develop schistosomal nephritis. Diabetes, hypertension, cardiovascular disease and chronic kidney disease (CKD) represents a key integrated element in the setting. The percentage of diabetic patients in the dialysis population was 8.4% in 1993. While data regarding the prevalence of hypertensive nephrosclerosis in Egypt are inadequate, it is reported that one in four Egyptians is or will be hypertensive. Inadequate facilities, poor infrastructure, lack of awareness, the lack of access to essential drugs and equipment (such as dialysis machines and renal transplant therapy) aggravate the problem and mean that millions of patients in poor countries will die from kidney diseases unnecessarily.

For combating progressive renal diseases, development of strategies for the early detection and prevention of non-communicable diseases, including kidney disease, is the only realistic strategy to avert an imminent global health and economic crisis and enhance equity in health care worldwide. Finally, some of the following recommendations on future steps to implement prevention programs in emerging worlds has to be provided: to follow the steps that have been taken internationally to fight the disease, to do more studies on the problem on the local level to measure the problem and identify the causes of the problem; more efforts have to be done to make the clinical care more easier for those patients

Strategies for Cancer Bladder Prevention

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Cancer bladder is one of the most common cancers in Egypt; it's the 1st among males with median age 60 years and the 5th among females with median age 58 years. It represents 10% of all cancer cases and 86% of urinary tract cancers. The documented risk factors for bladder cancer are chronic bladder inflammation due to Schistosomiasis that is the main cause for increasing the risk of a squamous cell bladder cancer. Other risk factors are; smoking, chemical exposure to arsenic and chemicals used in the manufacture of dyes, rubber, leather, textiles and paint products, chemotherapy and radiation therapy, family history of cancer and old age (> 65 y). Bladder cancer can't be 100% prevented but there are many steps for decreasing hazards of its risk factors either through diet regulation with high vitamin (vitamins A and C), low fat and increased water intakes, avoid smoking and exposure to chemicals, body hygiene and physical activity. Also early detection of cancer bladder can help in early management of the tumor. Some chemo-protective agents may be used in high risk group of population.

The main local strategies in Egypt are management (diagnosis and treatment), cancer registry, education (training and degree- granting programs), research (basic science, population and clinical studies) and prevention and early detection. The frequency of cancer bladder is decreasing due to increasing actions to fight schistosomiasis and prevent bilharzial infection.

The obstacles facing those strategies include data quality, lack of cancer control strategies, weak infrastructure, and low public awareness of cancer bladder, poor utilization of cancer screening, Schistosomiasis infection and its complications. Smoking and tobacco burden, overburdened treatment centers, Lack of facilities and insufficient financial support are often obstacles. To overcome these gaps, it is recommended to enhance cancer screening programs for early detection of cancer bladder, increase public health and nutrition awareness programs, continue implementation of medical campaigns for schistosomiasis control and early treatment of patients. Anti tobacco campaigns and increasing the number of cancer management centers allover Egypt and supplying them with latest technologies and financial support through sponsors and donation.

Strategies for lung cancer prevention

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Worldwide, lung cancer is the most common cancer in terms of both incidence and mortality with 1.35 million per year and 1.18 million deaths with the highest rates in Europe and North America. In Egypt, lung cancer comes in the third position after bladder and breast cancer according to "National Cancer Institute" the percent of lung cancer cases in Egypt is 6.1% in males and 1.3 in females

Cigarette smoking is the main cause of lung cancer, But pipe and cigar smokers are still much more likely to get lung cancer than non smokers. (They are also much more likely to get cancer of the mouth or lip).A number of factors may increase risk of lung cancer. Whereas, some risk factors can be controlled, such as smoking, alcohol use and exposure to radon gases, other factors can't be controlled, such as age, sex or family history. Although, controlled risk factors are easy to be avoided, they are the main causes of increased number of morbidity and mortality globally. Almost 90% of lung cancer deaths are caused by smoking, asbestos also accounts for 2-3% of male lung cancer deaths.the risk to passive smokers goes up the more cigarette smoke they are exposed to. Breathing in second hand smoke at work can double lung cancer risk. Heavy exposure to second hand smoke in childhood can increase the risk of lung cancer in adulthood, at home increases risk by about a third.

Local health authorities put their strategies for prevention of lung cancer in the form of Anti tobacco campaigns and advertisements about healthy lifestyle. The main local strategies in Egyptian National Cancer Institute are Management (diagnosis and treatment), cancer registry, Education (training and degree- granting programs), Research (basic science, population and clinical studies) and Prevention as well as early detection.

Strategies for Cancer breast prevention

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During the year 2005, cancer killed approximately 42,000 people in Egypt, 31,000 of those people were under the age of 70. Breast cancer is the second leading cause of deaths in women today and it is the most common cancer among women worldwide. Breast cancer represents an important public health problem in Egypt.

Some risk factors for breast cancer, like person's age or race, can't be changed. Other probable changeable cancer-causing factors are linked to the environment, personal behaviors, such as smoking, drinking, and diet. Some factors influence risk more than others, and the risk for breast cancer can be changed over time, due to factors such as aging or lifestyle.

The most obvious strategies done by Egyptian national cancer institute, are based on working in different fields as management; cancer registry, education; training and degree-granting programs, Research; Basic science, Population, and clinical studies of national Interest, prevention and early detection. The network of cancer control in Egypt includes also besides the NCI, M.O.H. with its 8 cancer centres, Oncology departments of other 14 universities & Non Governmental Organizations. According to WHO Global InfoBase Source Metadata, in Egypt, the Age Standardized Incidence has been dramatically declined among females over time from 29 to 19 per 100,000 during the period from 2002 till 2005. However, many obstacles were found against the fight of breast cancer in Egypt, the most serious of them are low quality of data, lack of cancer registries, weak infrastructures, low public awareness of cancer and poor utilization of cancer screening. Accordingly, primary prevention should be given the highest priority in the fight against the disease. It is recommended that for facing such a threatening problem, first is to break the ice among the population as regards breast cancer through surveys, public health awareness, prevention programs among school children & teenagers & involving the media in awareness about such problem.

Zonotic and Parasitic Diseases

An Introduction to Pharmacogenomics in Veterinary Medicine

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Pharmacogenomics is the study of how an individual's genetic inheritance affects the body's response to drugs. Pharmacogenomic as expression comes from the words pharmacology and genomics; it is the interrelationship between pharmaceuticals and genetics. Pharmacogenomics combines traditional pharmaceutical sciences such as biochemistry with annotated knowledge of genes, proteins, and single nucleotide polymorphisms.

Pharmacogenomics holds the promise that drugs might one day be tailor-made for individuals and adapted to each person's own genetic makeup. Environment, diet, age, life style, and state of health all can influence a person's response to medicines, but understanding an individual's genetic makeup is thought to be the key to creating personalized drugs with greater efficacy and safety. P-glycoprotein plays an important role in ivermectin toxicity in animals especially in collie dogs. P-glycoprotein is a large protein that functions as a transmembrane efflux pump. P-glycoprotein transports a wide variety of drugs with diverse chemical structures, including chemotherapy drugs, immunosuppressant, antiparasitic agents, HIV-1 protease inhibitors, and corticosteroids. P-glycoprotein is encoded by the multiple drug resistance genes (MDR1). It is now clear that much individuality in drug response is inherited; this highlight potential of pharmacogenetic testing of the drugs to improve both the efficacy and safety should be considered.

Objective: This work is designed for two objectives: 1. To high the role of individual genetic inheritance affecting the animal body's response to drugs.

2. Discussing how is the genetic map specially affecting dog's body response to ivermectin as an example.

Keywords: Pharmacogenomics, Pharmacogenetics, Ivermectine Toxicity, P-glycoprotein

Echinococcosis/ Hydatidosis: A Zoonotic Parasitic Disease

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Echinococcosis/hydatidosis are a cosmopolitan zoonosis caused by adult or larval stages of cestode belonging to the genus *Echinococcus*. It causes public health problem in certain parts of the world beside the economic losses resulting from the condemnation of affected organs in animals.

The two major species of medical and public health importance are *Echinococcus granulosus* and *E. multilocularis* which cause cystic echinococcosis and alveolar echinococcosis, respectively. Both are serious and severe diseases of increasing public health concern. Two other species, *Echinococcus vogeli* and *E. oligarthus*, are responsible for polycystic echinococcosis. This review discusses aspects of the biology, life cycle, aetiology, distribution, transmission, clinical features, diagnosis, treatment, epidemiology, control and prevention.

E. granulosus still has a wide geographical distribution, although effective control against cystic echinococcosis has been achieved in some regions. Alveolar echinococcosis is almost always sylvatic so that efficient and effective methods for control are unavailable.

Zoonotic Importance of Some External Parasitic Infestation in Large Ruminants Concerning Egyptian Rural Regions

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Background/Aim: Ectoparasites are considered as the main vectors of zoonotic diseases. They play an important role for transmission of wide variety of diseases to human and vertebrates. The aim of this study is to identify the role of ectoparasites in some rural provinces in Egypt and how to be controlled.

Material and Methods: In this study a total 2417 of cattle and buffalos were subjected to clinical Investigations for the presence of ectoparasites; tick, lice and mite.

Results: Examination of cattle revealed that 200(14.36%) out of 1393 were suffered from ectoparasites; out of these cattle 168(12.06%) were infested with ticks; 139 (0.93%) with lice as well as 19 (1.39%) with mite. Also 554 (70.66%) out of 784 Buffalos showed ectoparasites infestation; 32 (4.08%) were infested with tick, 378 (48.21%) with lice as well as 144 (18.3%) infested with mite.

Tick infestation of cattle were; *Boophilus annulatus*, *Hyalomma anatolicum* and *Hipicephalus turanicus* with percentages 95.23, 4.16 and 0.59 % respectively. Cattle infested with lice; *Haematopimus eurysternus* and *Linognathus vituli* with percentages 84.6% and 15.3%. Ticks infestations among buffalos; *Hyalomma anatolicum anatolicum*, with percentages *Hyalomma anatolicum exavatum* and *Boophilus annulatus* with percentages 59.3, 37.5% and 3.1% respectively. Buffalos were infested with *Haematopimus tuberculatus* lice and *psoroptes ovis* mite. Treatment of tick, lice and mange infestation in this study was carried out with 4 acaricides, Dectomax, Cydectin injections Amitraz dip concentrate and Butox sprays. A significant decrease in the in the mean values of erythrocytic count hemoglobin percentage (Hb %) and Packed Cell Volume percentage (PCV %) in the mean values of leucocytic count, neutrophils and monocytes.

The important ectoparasites infested animals were reported and these animals were contact with peoples and veterinarians. These data are significant because of possible evaluation impact on the evaluation of the risks associated with the increased contacts of domestic's animals and people in these regions.

In summary, the results presented documents the infestation of domestic animals with ectoparasites in the Department of Zoonotic Diseases, National Research Center. Characterizing the host associated and distributions of ectoparasites of animals is fundamental to understand and control zoonotic diseases.

Keywords: Ectoparasite, cattle, Buffalos, Zoonotic, Egypt.

Zoonotic Impact of Sero-Prevalence of *Toxoplasma Gondii* in Naturally Infected Egyptian Kittens

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Background and objectives: *Toxoplasmosis* is typical world wide zoonoses caused by *Toxoplasma gondii* protozoon, which is an obligate intracellular coccidian that infects human being, warm blooded animals, and birds. The protozoan live cycle cannot be completed without passing in the feline species which shed millions of un-sporulated oocysts. The sporulated oocysts become infectious three days later on and contaminate the surrounding environment, leading to oral infection of final and intermediate hosts. The present aimed to updating the epidemiological data concerning in and outdoors Egyptian kittens. And the hazard played by those animals was evaluated as bio-indicator to what extent the degree of Egyptian environmental contamination by *T.gondii* oocysts.

Material and Methods: A total number of ninety seven kittens , '34 & 63' stray and house-hold cats respectively, were collected from different regions of Giza, Cairo and khalubia governorates' were reclassified to '72 & 25' to un-weaned and weaned kittens respectively. All cats were assayed serologically by using LAT and SFDT.

Results: the sero-positive percent of naturally infected Egyptian kittens was [70.6 & 50.8] while the shedding percent was [4.17 & 0] in un-weaned and weaned kittens respectively, Also significance difference was recorded between stray and house hold kittens and between male and females ones. **Conclusion:** oocysts environmental contaminations maximize human toxoplasmosis throw infection of edible herbivorous animals which harboring tissue cysts and will be slaughtered later on. So, it is straight away required to control urban outdoors cat inhabitants to reduce the risk of zoonotic diffusion of toxoplasmosis to other animal hosts and humans.

Workshops

Workshop 1

"التقنيات المختلفة لفصل المركبات الفعالة من مصادرها الطبيعية"

Different Strategies for the Purification of Bioactive Natural Products for Pharmacological Evaluation

Workshop Director

Prof. Ahmed A. Hussein

Prof. of Phytochemistry

Marine Natural Products Group, Centre of Excellence for Advanced Sciences.

Background: The systematic study of the natural sources for discovering bioactive natural products and related pharmacological studies have emerged as one of the most important part in modern drug discovery programs. And the isolation of bioactive compound in pure form for structural determination and different pharmacological studies is critical initial step to reach the final goal.

Objectives: This workshop divides into two parts:

- 1- Theoretical background on different types of natural products and their methods of isolation, including physical and chemical detection (e.g. terpenoids, flavonoids, proanthocyanidins, xanthones, coumarins,.....etc).
- 2- Practical training on the most important and sophisticated techniques in use for isolation of pure natural compounds (HPLC, MPLC, open column, and TLC) including: design, running and the practical tricks during the isolation process.

The over all goal of this workshop is discussing all parameters related to the isolation and the purity of the isolated compounds for pharmacological studies.

Workshop 2

"استخدامات وتطبيقات جهاز تحليل الصورة في بحوث الهستوباثولوجي"

Applications of Image Analysis System in Histopathological Research

Wafaa Abdel Aal

Background/Aim: Video-based analysis technique developed in the 1980, took advantage of the advent of microcomputers and digital image analysis software. These methods allow the relative rapid and semiautomatic measurement of histologic and cytologic slides, in more efficient manner than with older microspectrophotometric technique. An accurate analysis of biological events requires the analysis of sufficiently large numbers of samples with sufficient specificity, sensitivity and reproducibility. Image analysis makes it possible to distinguish morphological entities. Recent advances in computing and image processing technology, combined with proven methods of pathological, histological, cytological and histochemical staining, allow the reliable and rapid estimation changes in cells and tissues. The clinical applications for computer-assisted imaging can be applied to the detection of a wide range of proteins, carbohydrates, lipid, and nucleic acids sequence not only for diagnosis, but also for the assesement of treatment outcome monitored via surrogate endpoint biomarkers

Objectives: The main objectives of this workshop are the development and applications of image analysis systems in histopathology and histochemistry. This is achieved by:

- 1- Training on recent and advanced technology To improving the workers capabilities in the field of Pathology and Histology
- 2- To improve our understanding of interactive/automated analysis of tissue preparations and applications of the different techniques used by the image analysis system.
- 3- To help the researchers to do their different thesis & researches that based on using the Techniques of Image Analyzer.
- 4- To help in assurance of the pathological diagnosis of different tumors, which are referred, from external laboratories by using the advanced techniques of Image Analysis System to elucidate proper treatment of these tumors.

Who has to attend the traninig course?

- The workers in all Biology fields in all research centers
- All the stuff working in Histology, Pathology Department, Faculty of (Science, medicine, Pharmacy, Veterinary and Agriculture) in Egypt and Arab Countries
- New candidate who are willing to work in Histology and Pathology labs in Research Centers and Private Sectors

- All researchers who need the image analysis in the interpretation of their results specially in different fields of Physics, Chemistry, Geology, Polymer

Topics:

- Introduction and principals of image analysis
- Application of Image analysis in Morphometry in Human, animals and Plant tissues, Physics, Chemistry and Geology
- Application of Image analysis in Histochemistry (Enzymes, Lipids, Carbohydrates, proteins, etc.)
- Application of Image analysis in damaged areas and fibrosis in all tissues.
- Application of Image analysis in DNA ploidy and its role as a recent tool in diagnostic pathology

Workshop 3

"طب الأم و الجنين و الأمراض الوراثية"

Maternal Fetal Medicine and Genetic Disorders

Workshop Director

Prof. Khaled R Gaber

Head of Prenatal Diagnosis and Fetal Medicine Department (PNDFM), NRC
Head of Prenatal Diagnosis and Recurrent Miscarriage Clinics, NRC

Background: Most women seek consultation and care by specialist in the field of maternal and fetal medicine because she is considering becoming pregnant or already pregnant and worried about pregnancy or fetal complications. Hence, prenatal diagnosis has become an important tool in obstetrics and perinatal care. The rapid advances in technology and data transfer have greatly changed the field of perinatology from simple diagnosis into screening and early intervention. These advances included genetic ultrasound (comprehensive U/S fetal examination, 3/4 D evaluation and markers), prenatal maternal and fetal biochemical markers, fetal tissue sampling, and confirmatory cytogenetic and molecular studies.

Goal and Objectives: The PND FM department aims to establish a continuous education material and scientific relation with physicians working in the field of maternal fetal medicine in Egypt, Arab countries, Africa and the Middle East. This includes geneticists, obstetricians, pediatricians and Neonatologists.

Upon completion of the course, attending physicians will be able to understand and demonstrate the following:

- (6) the systemic approach to pregnancy and fetal evaluation
- (7) the common screening techniques (U/S and biochemical)
- (8) the systemic approach to fetal scanning using 2 and 3/4 D technology
- (9) the different techniques of fetal tissue sampling
- (10) the cytogenetic and molecular studies in prenatal diagnosis of abnormalities

Topics to be covered:

- 1) Introduction to congenital malformation and fetal dysmorphism
- 2) Genetic counseling for the obstetric provider
- 3) Biochemical screening in pregnancy: maternal and fetal implications
- 4) Advances in cytogenetic applied to prenatal diagnosis
- 5) Molecular techniques in prenatal diagnosis
- 6) Ultrasound evaluation of the fetus and fetal malformations
- 7) Live scan and hand-on (2D, 3/4 D ultrasound)

المؤتمر الدولي الثاني للجمعية العربية للبحوث الطبية
تحت شعار

البحوث الطبية في الوطن العربي
(أساليب التعاون و التقدم)

تحت رعاية

معالي السيد / عمرو موسى
الأمين العام لجامعة الدول العربية

رئيس المؤتمر

الأستاذ الدكتور / هاني الناظر
رئيس المركز القومي للبحوث - مصر
رئيس مجلس ادارة الجمعية

مقرر المؤتمر

الأستاذ الدكتور / كرم مهدى
امين عام الجمعية

سكرتير عام المؤتمر

الأستاذ الدكتور / عزة عبد الشهيد
نائب رئيس مجلس الادارة

١١-١٣ نوفمبر ٢٠٠٨

المركز القومي للبحوث