CONFERENCE ABSTRACTS

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Plenary Lectures

نحو إستراتيجية قومية لمكافحة السرطان في مصر

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حجم المشكلة :-

السرطان مشكلة صحية عالمية وكذلك قومية في مصر حيث يعد ثاني أسباب الوفيات بعد إمراض القلب والأوعية الدموية . وتشير إحصائيات منظمة الصحة العالمية إلى أن المرضى في تزايد مستمر في العالم كله ويعتبر سرطان الرئة هو الأكثر شيوعا بين الرجال بينما يمثل سرطان الثدي العدو رقم واحد للسيدات.

ورغم أن أمراض السرطان هي أكثر شيوعا في اوروبا والولايات المتحدة حيث تبلغ نسب الحدوث ٣٠٠-٥٠٠ حاله جديدة كل عام لكل١٠٠٠٠٠ نسمه مقارنه بالدول النامية في أفريقيا واسيا حيث تبلغ نسب الحدوث من ١٠٠-٢٠٠ حاله جديدة كل عام لكل ١٠٠٠٠٠نسمه. إلا أن هذه النسب ستنعكس خلال السنوات القادمة مما يوضح تفاقم المشكلة في دول العالم النامي ومنها مصر .

ورغم أنه لايوجد تسجيل قومي للسرطان في مصر حتى الآن إلا أن إحصائيات منظمة الصحة العالمية وكذلك بعض الإحصائيات المحلية مثل الموجودة في محافظة الغربية تشير إلى حدوث حوالي مائه ألف حالة سرطان جديدة كل عام موزعه بين الرجال والسيدات وتبلغ نسب حدوث الأورام في الأطفال ٦-٨% من الإعداد الكلية لحدوث المرضى .

الوضع الحالي لمكافحة السرطان في مصر :-

١- المعهد القومي للأورام جامعة القاهرة وهو اكبر مركز لعلاج الأورام في مصر وإفريقيا والشرق الأوسط وتبلغ طاقته الاستيعابية ٥٣٢ سريرا ويعمل به حوالى ٢٤٨١ عاملا منهم ٥٣٨ يمثلون طاقم الأطباء يعالج به حوالي ٧٠% من المرضى بالقسم المجاني الممول من ميزانية الدولة (ثلاثون مليون جنيها سنويا) والتبرعات (٢٥ مليون جنيها سنويا) بينما يعالج الباقي بوحدة العلاج بأجر الممولة أساسا من العلاج على نفقة الدولة والشركات والهيئات والتأمين الصحي . ويستقبل المعهد حوالى ١٨٠٠٠ حاله جديدة ســـــنويا (للتشخيص والعلاج بالمعهد) .

٢- مراكز علاج الأورام التابعة لوزارة الصحة وعددها ثمانيه موزعه على إنحاء الجمهورية في دمياط ، طنطا ، دمنهور، مدينة السلام ، معهد ناصر ، المنيا ، سوهاج، وأسوان ويعالج المرضى أساسا من ميزانية العلاج على نفقة الدولة وكذلك التأمين الصحي.

٣- أقسام علاج الأورام كجزء من كليات الطب بالجـــامعات المصرية (حوالي ١٥ قسم لعلاج الأورام).

٤- القطاع الخاص بما فيه من مستشفيات خاصة ، هيئات حكومية واهليه.

أوجه القصور الحالية فى مجال مكافحة الأورام فى مصر:

١- عدم وجود تسجيل قومي للسرطان في مصر لتحديد حجم المشكلة بدقة .
٢- عدم وجود استراتيجيه واضحة لمكافحة الأورام على المستوى القومي وذلك للأسباب الاتيه :
أ- قصور في مجال الوقاية والاكتشاف المبكر للأورام بشقيه الاعلامى، والعلمي مع أهمية الوقاية والاكتشاف المبكر في ارتفاع نسب الشفاء وخفض تكلفة العلاج حيث إن القضاء على التدخين والبلهارسيا وفيروس سى سيؤدى الى خفض الاصابه بالسرطان بنسبة ٤٠% .
ب- قصور في تعميم برتوكولات موحده لتشخيص وعلاج الأورام على مستوى الجمهورية .
ت- عدم وضوح اليه تدريب كوادر الأطباء الشبان في مجال الأورام ورفع المستوى المهني لديهم وكذلك توحيد الشهادات الأكاديمية المطلوبة للسلك الوظيفة الخاص بهم .
ث- عدم وجود نظام للمتابعة ومراقبة الجودة .
ج- قصور في البحوث العلمية الخاصة بمواجهة المشكلات ذات الصبغة القومية وذلك لعدم وجود خطة بحثيه واضحة المعالم .
٣- نقص وعشوائية الميزانيات الخاصة بعلاج المرضى حيث تتعدد مصادر التمويل من علاج على نفقة الدولة مع مابه من قصور حقيقي في تغطية تكلفة المرضى ، التأمين الصحي ، التبرعات ، وادي ذلك إلى عدم وضوح الفواصل والاشتراطات الواجبة لتحديد مصدر الصرف مما أدى بالتبعية إلى وجود عجز واضح في التمويل المطلوب .
٤- عدم وجود قواعد محدده وواضحة في مجال توفير الأدوية الخاصة من خلال عمل مناقصة موحدة على مستوى الجمهورية تتعامل بشفافية كاملة
٥- نقص واضح في تفعيل دور الجمعيات الأهلية الخاصة بالأورام والمنتشرة في مصر ومنها على سبيل المثال ماهو موجود في طنطا، المنصورة ، فاقوس ، وصعيد مصر .
٦- عدم وجود خطة قومية لكيفية التخاطب مع الرأي العام وعمل رسائل إعلاميه واضحة لجمع ماهو ممكن من دعم وتبرعات المواطنين للمساهمة في دعم هذا المجال الحيوي الهام وزيادة المخصصات المالية من خلال التبرعات والهبات وذلك من خلال حملة تبرعات دائمة ومقنعة على مستوى الجمهورية .
٧- قصور في مجال الاتصال بالجهات والهيئات الدولية والداعمة في مجال الأورام على مستوى الجمهورية ، والجدير بالذكر أن المعهد القومي للأورام هو المكان الحكومي الوحيد حاليا الذي له علاقات ممتازة وعلى مستوى مهني عالي بكثير من هذه الهيئات والمنظمات الدولية .

كيفية مواجهة هذه السلبيات :-

هي باختصار شديد تتركز أساسا في رفع كفاءة ومستوى الإدارة واليات التنفيذ الحالية واستغلال ماهو متاح من كوادر بشريه وإمكانيات البنية التحتية الموجودة لتحقيق الأهداف التالية :-

١- عمل تسجيل قومي للأورام في مصر .
٢- تفعيل الوقاية والاكتشاف المبكر على المستوى القومى .
٣- التأكد من تعميم بروتوكولات علاجية موحده لكل مراكز الأورام في مصر سواء التابعة لوزارة الصحة أو للجامعات المصرية.
٤- وضع نظام واضح لتدريب كوادر الأطباء وكذلك إعطائهم الشهادات الأكاديمية المطلوبة .
٥- تطوير الأبحاث العلمية الخاصة بالمشكلات القومية من خلال خطة بحثية واضحة المعالم .
٦- الاهتمام بالمتابعة ومراقبة الجودة .
٧- تحديد واضح للميزانيات المخصصة لعلاج المرضى وتوحيد المصادر .
٨- عمل مناقصة موحده للأدوية .
٩- حملة تبرعات واضحة وموحده ومقنعه على المستوى القومي .
١٠- زيادة التعاون مع الهيئات والجهات الدولية المماثلة في هذا المجال .
١١- تفعيل دور الجمعيات الاهليه.
١٢- نظام موحده للاتصال وربط مراكز الأورام من خلال شبكة قوميه بالتعاون مع وزارة الاتصالات

استئصال مرض شلل الأطفال من مصر

د. نصر السيد
وزارة الصحة - مصر

لقد كان للدعم السياسي أكبر الأثر في نجاح مصر باستئصال مرض شلل الأطفال فقد أعطي السيد الرئيس / **محمد حسني مبارك**، اهتماما كبيرا ورعاية كاملة لحملات الوقاية القومية ومنها حملات التطعيم ضد شلل الأطفال، كما تفضلت سيدة مصر الأولي برعاية برنامج استئصال مرض شلل الأطفال وذلك بافتتاح حملات التطعيم القومية وتطعيم احد الأطفال في احد مراكز التطعيم .. كما إن بوستر الحملة القومية يحمل صورة سيادتها، كم قام الأستاذ الدكتور وزير الصحة والسكان بقيادة الحملات القومية والمحدودة ضد مرض شلل الأطفال، وقد تم تشكيل اللجنة القومية لاستئصال مرض شلل الأطفال برئاسة الأستاذ الدكتور وزير الصحة والسكان وعضوية نخبة من خبراء وزارة الصحة وأساتذة الجامعات وممثلي المنظمات الدولية المشاركة وذلك لتطوير أداء الحملات القومية والمحدودة وتقييم الحملات أولا بأول اعتبارا من عام ٢٠٠٢، وفي عام ٢٠٠٤ فقد تم تكوين مجموعة عملTask Force من الخبراء المحليين والدوليين لتدعيم الإعداد والمتابعة للبرنامج حيث تجتمع هذه المجموعة أسبوعيا، كما تم تكوين لجان القضاء علي مرض شلل الأطفال في المحافظات برئاسة السيد المحافظ حيث يعتبر قائداً للحملة في المحافظة.

ويهدف استئصال مرض شلل الأطفال من مصر إلي عدم ظهور حالات مرضية، واختفاء وجود الفيروس الشرس المسبب للمرض نهائياً بجميع أنواعه من البيئة من خلال، الحفاظ علي نسبة عالية من التغطية بالتطعيمات الروتينية أكثر من ٩٥%، الحملات القومية والحملات المحدودة، وجود نظام ترصد قوي للمرض.

ويتم إعطاء جرعات الطعم الفموي (سابين) للأطفال اعتبارا من عمر شهرين حتى ١٨ شهر، واعتبارا من أول يناير عام ٢٠٠٣ تم إدخال الجرعة الصفرية، وبلغت نسب التغطية بطعم شلل الأطفال من عام ٢٠٠٣ إلي ٢٠٠٥ أكثر من ٩٧,٩% علي المستوي القومي.

وتعتبر الحملات القومية هي احدي الاستراتيجيات الرئيسية لاستئصال مرض شلل الأطفال حيث تم عمل حملات قومية ومحدودة لجميع الأطفال من عمر يوم حتى خمس سنوات بجميع المحافظات بإتباع إستراتيجية تطعيم الأطفال من منزل إلي منزل، وتعتمد الحملات القومية للقضاء علي هذا المرض علي حث المجتمع المحلي للمشاركة في التطعيم وتحقيق تغطية شاملة لجميع الأطفال، حيث تم عمل خرائط ميدانية لكل فرق التطعيم علي مستوي الجمهورية، كما تم تحديد المناطق الحدودية والطرفية والصعب الوصول إليها ومناطق الخطورة ذات الكثافة السكانية العالية والمناطق العشوائية، كما تم وضع خطة خاصة بتطعيم الأطفال غير المتواجدين أثناء مرور الفرق عليهم، مع توفير الفرق الثابتة في مراكز التطعيم لتطعيم من لم يتم تطعيمهم بواسطة الفرق المتحركة.

وللتأكد من كفاءة الطعوم تم توفير معدات سلسلة التبريد المطلوبة، مع توفير أكياس التبريد اللازمة للحملات حوالي ربع مليون كيس تبريد لكل حملة، واستخدام زجاجات الطعم التي تحتوي علي راصد لدرجات الحرارة للتأكد من سلامة الطعم عند الاستخدام علي المستوي الطرفي.

بدأ نظام ترصد الشلل الرخو الحاد في مصر في أوائل التسعينات، وبدءا من عام ٢٠٠٢ تحسن نظام ترصد الشلل الرخو الحاد تحسناً ملموساً حيث تم إعداد دليل للعمل الميداني

لدعم الأنشطة في مختلف محافظات الجمهورية وتعيين مسئولين للترصد بجميع محافظات وإدارات الجمهورية.
ويعتبر الترصد البيئي عملية تكميلية لترصد فيروس شلل الأطفال في البيئة عن طريق اخذ عينات صرف صحي من محطات الصرف في المحافظات وتحليلها معمليا لعزل الفيروس منها، وفي حالة ثبوت إيجابية العينة معملياً فإن هذا يدل قطعيا علي سريان الفيروس في التجمعات السكانية المأخوذ منها العينة، وتعتبر مصر هي الدولة الوحيدة والأولي في العالم التي تعمل بهذا النظام إلي جانب ترصد حالات الشلل الرخو الحاد.
وكان نتيجة لهذه الجهود أن أعلنت منظمة الصحة العالمية مصر خالية من مرض شلل الأطفال في مارس ٢٠٠٦.

Dr. Jhon Jabbour
WHO
المكتب الاقليمى لمنظمة الصحة العالمية لشرق المتوسط

"دور المكتب الاقليمى لمنظمة الصحة العالمية لشرق المتوسط فى الاستعداد و الاستجابة لجائحة لانفلونزا البشرية"

Human Genetics and Endemic Diseases

The Centre for Arab Genomic Studies: A Germinating Seed of Arab Genomics

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Since its inception in 2003, the Centre for Arab Genomic Studies (CAGS) worked towards achieving its main aim to understand the scale at which genetic disorders occur in Arab populations. One of the first achievements of the Centre was the successful launch of its Catalogue of Transmission Genetics in Arabs (CTGA) Database, which is a continuously updated catalogue of bibliographic material and observations on human gene variants and inherited, or heritable, genetic diseases in Arab individuals (*Tadmouri et al., Nucleic Acids Res. 2006, Vol. 34, pp. D602-6)*. As a first step, CAGS worked closely with scientists in the UAE to collect information on the occurrence of genetic disorders in the Arab population in the country. In a very short time, and using an aggressive search strategy in international and national journals as well as the collection of raw data from local hospital records, it was possible to bring together information on the occurrence of 228 genetic disorders and 28 related genes in the Arab population of the UAE. Following the formation of its Arab Council representing 12 Arab countries, CAGS is at present working closely with nuclear groups of leading scientists in Arab institutes to conduct local projects of data collection; especially in Gulf countries neighboring the UAE. Whenever this project reaches full capacity, it will represent the largest attempt to define the scale of genetic disorders described in the Arab World. In 2005, CAGS made its practical step in exploring the molecular pathology leading to an inherited skeletal abnormality in a UAE family. Initial results of this study have been recently published (*Naveed et al. Am J Med Genet A. 2006, Vol. 140, pp. 1440-6*) and work is ongoing to depict the gene mutation responsible of this disease. In 2006, CAGS became a pivotal component of a nationwide campaign, known as Emirates Free of Thalassemia, to prevent the spread of thalassemia and other inherited blood disorders in

the UAE. Despite the very short age of the Centre, it currently plays an important role in the international scientific community and proves to be a successfully germinating seed of Arab genomics (*Axton, Nat Genet. 2006, Vol. 38, pp. 851*). In the near future, CAGS plans to initiate the Arab Human Variome Project in collaboration with leading laboratories and scientists in the region. The project aims at the determination of the genetic profiles in Arab populations in accordance with similar projects conducted in other world populations following the completion of the Human Genome Project.

Adams-Oliver Syndrome: Further Evidence of an Autosomal Recessive Variant

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Background: Adams-Oliver syndrome (AOS) is characterized by aplasia cutis congenita and variable degrees of terminal transverse limb defects. Other associated anomalies were described in the syndrome. Most described cases follow an autosomal dominant pattern of inheritance. However, sporadic and autosomal recessive cases were reported. **Subjects & Methods:** In this study we report on three Egyptian patients with AOS from three different families. The parents were normal and consanguineous in all three families. There was history of similarly affected sibs for 2 cases. These findings denote autosomal recessive inheritance. The reported cases had typical skull and limb anomalies with cutis marmorata telangiectatica congenita. **Results & Conclusions:** We observed additional rare manifestations in the form of microcephaly, psychomotor retardation, epilepsy, eye anomalies and atrophic skin lesions. Magnetic resonance imaging of the brain in one of the studied cases revealed retrocerebellar cyst and mild asymmetrical cerebellar hypoplasia, which to our knowledge, were not previously reported in AOS. The results of the present study provide further evidence of clinical and genetic heterogeneity and support the presence of autosomal recessive variant of AOS. Molecular studies by homozygosity mapping are strongly recommended for families with autosomal recessive inheritance and positive parental consanguinity.

Key Words: Adams-Oliver syndrome, autosomal recessive inheritance, genetic heterogeneity.

The Child of Uncertain Sex, Egyptian Experience at the NRC in 208 Cases

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Background: Abnormal sexual development (ASD) resulting in the birth of an infant with ambiguous genitalia, is a medical and social emergency. This group of disorders is not an uncommon disease in Egypt. In 1998.a study has reported an incidence of one newborn with ambiguous genitalia per 3000 live births. **Objective:** The purpose of this study was to provide an extensive review of the clinical characteristics of a patient cohort with ambiguous genitalia, from 5 years' experience at the department of clinical genetics at the National research center in Egypt. **Methods:** 208 patients with ambiguous genitalia were recruited from the genetic clinic from 2000-2005. They were subjected to history taking, age at presentation, consanguinity, origin of parents, and sex of rearing. Full clinical and. Genital examination, cytogenetic study, hormonal assay, radiological investigations, gonadal biopsy, and molecular study were done in some cases. **Results** Consanguinity was high 61% in total intersex patients. Consanguinity was 76.4% in FPH while it was 56.4% in MPH. MPH was more common than FPH constituting 70.8% of total cases. MPH was more common in Upper Egypt followed by Lower Egypt, Giza. Preferences of male sex of rearing despite severe a degree of ambiguity (Quigley 3-4). G34R was a relatively common mutation in Egyptian patients with 5 α RD deficiency. **Conclusion**: 46XY had a wider range of diagnoses. Despite thorough investigation, 14.4% had no definite final diagnosis made. Iidiopathic MPH is a heterogenous condition which necissitate a set of guidelines for management. Early diagnosis by molecular study is required for proper choice of sex to prevent late psychological disturbances.

Key words: ambiguous genitalia, Egyptian Experience.

Molecular Basis of Disorders of Sex Development in Egypt

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Background and purpose: In Egypt, disorders of sex development (DSD) have an incidence of 1/3000 livebirths. This relative prevalence is probably due to high inbreeding rates, leading to more clinical expression of autosomally recessive disorders. This presentation aims at summarizing the molecular bases of prevalent monogenic DSD in Egyptian cases.

Material and methods: After thorough clinical, cytogenetic and hormonal evaluation of each case, molecular analysis of the relevant gene, [i.e. 5 alpha reducatse 2 (SRD5A2), androgen receptor (AR) and 21-hydroxylase (21-OH) genes] was executed.

Results and conclusion: The mutational profiles of the 3 studied genes show a number of findings. First, 21-OH mutations were similar to those reported in some Mediterranean populations. Second, AR mutations showed a heterogeneous profile. Third, the SRD5A2 mutation pattern showed distinctive features. Forth, studying the SRD5A2-related V89L polymorphism, there was prevalence of the rare 89L among SRD5A2-deficient patients in comparison to the general population.

In conclusion, the mutational patterns of monogenic DSD among Egyptians show similarities to as well as considerable differences from those reported in other populations. This implies the necessity for a modified molecular diagnostic workup in some disorders.

Key words: disorders of sex development – intersex – Egypt – molecular – mutation – gene.

Clinical and Biochemical Aspects of Mitochondrial Disorders in Egyptian Patients

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Background: Mitochondrial disorders are a heterogeneous group of disorders caused by defects in intracellular energy production. They are characterized by morphological and biochemical abnormalities of mitochondria. The pathological findings of ragged red fibers in the muscles verify the diagnosis of mitochondrial disorders. **Objectives:** The aim of the work was to review the clinical, neurophysiological findings in Egyptian patients with mitochondrial disorders. Emphasis the important findings, which let us suspect that we are dealing with a mitochondrial patient. Annotate the debate about apoptosis in mitochondrial disorders. **Patients and Methods:** The pathological finding of ragged red fibers in the muscles verified the diagnosis of mitochondrial disorders in 19 patients. All the patients were subjected to full clinical examination, biochemical examination including plasma lactate, plasma pyruvate, lactate/pyruvate ratio and plasma cytochrome C. Neurophysiological examination including electroencephalogram (EEG), electromyelogram (EMG), echocardiogram (Echo), ultrasonography (US), electroretinogram (ERG), hearing test and magnetic resonance imaging (MRI) were done. **Results:** The features increasing the likelihood of mitochondrial disorders were: (i) atypical phenotype, (ii) maternal inheritance pattern and (iii) Ragged red fibers in the muscle biopsy, (IV) neurophysiological impairment, (V) increased lactate, pyruvate, lactate/pyruvate ratios and cytochrome C in plasma. **Conclusion:** Mitochondria have been found to play a central role in programmed cell death (apoptosis).Efficient laboratory diagnosis of mtDNA is of great importance for the accurate diagnosis of mitochondrial disorders.

Keywords: mitochondria, neurophysiology, apoptosis

Phenotypic Scoring In Thalassemia Intermedia and the Impact of Underlying Molecular Defects

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Bachground: Thalassemia intermedia encompass clinical conditions ranging in severity from, thalassemia carrier state to transfusion dependent major like.

Therefore classification of patients is useful for proper genetic counseling, management and prenatal diagnosis. **Method:** We followed a special scoring system for classification of 155 beta-thalassemia intermedia patients.

According to this system the patients were classified into mild (23.2%), moderate (27.7%) and severe (49.1%). Molecular studies for detection of mutations were done for 66 of the cases using reverse Dot Blot (RDB) and Amplification Refractory Mutation System (ARMS) techniques. Genotypes were compared with the clinical classification. **Results:** The mild genotype was detected in 38.8% of the mild, 45% of the moderate and 21% of the severe group. **Conclusion:** We concluded that, the clinical scoring of severity of thalassemia intermedia is useful to develop management guidelines for the subgroups and that severity could not be always explained y the underlying genotype.

Search for other mechanisms or modifying factors is needed for proper prognosis, genetic counseling and future therapies.

Key Words: Thalassemia intermedia – Phenotypic scoring.

Association between Apolipoprotein E Polymorphism and Non Insulin Dependent Diabetes Mellitus With or Without Complications

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Objectives: To investigate the association between ApoE gene polymorphism and NIDD mellitus with or without complications.

Subjects and Methods: The study included 45 patients suffering from type II Diabetes Mellitus. They were clinically classified into 20 patients with NIDD mellitus with no complications, and 25 patients associated with complications, they were 23 males and 22 females, their mean age was (50 years $\pm$ 3). Detection of Apo E polymorphism was done using PCR technique followed by restriction enzyme analysis using Hae II and AFI III enzymes.

Results: There was no significant difference in terms of age, sex, body mass index between the two groups. However, a higher significant difference was observed in LDL, HDL, Cholesterol, blood sugar levels in patients with NIDD with complications compared to those with no complication. The difference was more observed in male patients compared to female patients. In the NIDD group without complication the distribution of Apo E genotypes was ε3/4 6 (30%), ε 2/4 3 (15%), ε 3/3 8 (40%), ε 4/4 3 (15%). In the NIDD group with complication the apo E genotype distribution revealed ε 3/4 19 (76%), ε 2/4 2 (8%), E3/3 0 (0%), ε 4/4 4 (16%). A higher significant distribution was observed in the E3/4 genotype in the group with complication compared to those with no complication. The genotype E3/3 was only observed in the group with no complication. There were no E2/2 or E2/3 genotypes in the two groups.

Conclusion: Apo E4 allele carrier frequencies were higher in the NIDD Mellitus group with complication. The results suggest a role of the E4 allele in the development of complications in patients with NIDDM.
Keywords: Apo E, PCR, NIDDM

Cognitive and Motor Skills in Achondroplasia: Neuroimaging Correlate

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Background: Achondroplasia (ACH) is an autosomal dominant disorder characterized by disproportionately short stature, rhisomelia, characteristic facies, exaggerated lumbar lordosis and trident hands. Majority of cases appear sporadically resulting from a de novo mutation of Fibroblast Growth Factor Receptor-3 associated with advanced paternal age. **Objectives:** We aim at correlating the cognitive and motor skills in achndroplastic patients with neuroimaging findings which is important in providing useful information for the counseling of parents with newborn affected children. **Patients and Methods:** The present study included twenty three achondroplastic patients selected randomly among patients referred to Human Genetics Clinic, National Research Centre. Patients of the present study represented two age groups, below 3 years and preschool age group (4.5-6y). History of mental and motor development, respiratory status was obtained by means of parents questionnaire. Patients underwent neuroimaging using computed tomography of brain, clinical neurological evaluation. Psychometric testing was done according to the age group. **Results:** Significant motor delay was observed among all the recruited patients, which improved with age ($P < 0.005$).: Significant low total scores of verbal intelligence quotient (VIQ), full intelligence quotient (FIQ) in correlation to ventricular dilatation ($r=- 0.9$, $p=0.01$ and $r=- 0.7$, $p=0.04$ respectively). The role of cortical brain atrophy on cognitive and motor functions was not proved statistically. **Conclusions:** The present study is the first Egyptian study correlating motor and mental functions to ventricular dilatation and cortical brain atrophy which are the commonest neurological complications among ACH patients. In light of cognitive and motor deficit among achondroplastic patients,

the current study highlighted the importance of early and careful neurological examination, neuroimaging and assessment of motor and mental development in ACH individuals even in asympotomatic cases. Additionally it delineates the importance of prenatal diagnosis of ACH in advanced paternal age ≥ 35 years, by ultrasound and the molecular approach; particularly 97% of sporadic cases are associated with one of two mutations of FGFR-3, and the ease with which they can be detected.
Keywords: Cognitive, Motor Skills, Achondroplasia, Neuroimaging

Surgery and Endemic Diseases

Deep Vein Insufficiency: Evaluation and Conservative Management

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Chronic venous disease (CVD) of the lower extremity is a common problem. Venous ulceration leads to severe physical impairment and diminished quality of life. CVD may manifest as leg swelling heaviness, aching pains, chronic edema, stasis dermatitis, or ulceration. Risk factors for venous stasis ulcers are: greater age, previous deep vein thrombosis (DVT), lower extremity trauma, male sex, obesity, hypercoagulable states and family history. Physical examination should be directed toward identifying and characterizing the severity of the signs of CVD. The CEAP system is a mean of characterizing patients with CVD. Non invasive vascular laboratory studies can characterize the location, extent, pathophysiology of CVD. Venography has been reserved for patients considered for surgical repair or reconstruction. Ascending venography is used for obstruction and descending venography for valvular incompetence. Conservative therapy may involve the use of compression, leg elevation for short periods during the day; topical steroids can be applied to the areas of surrounding dermatitis but never to ulcers. Patient with grossly infected venous ulcers may require hospitalization. Graft appears most beneficial in large, deep or chronic ulcers.

Treatment of Lymphoedema in Outpatient Clinic By Chemical and Mechanical Segmental Pressure

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Summary

Lymphedema, either primary Lymphedema or secondary Lymphedema, is an incurable disease; however, given the right treatment, patients can lead a normal life. Strict adherence to the protocol of treatment keeps the affected limb in an almost normal shape.

The problem in curing Lymphedema lies in the pathology of the lymphatic system, which is built from very thin collecting tubes which are so small (microns) that surgery is not successful.

Since the main pathology of lymphedema is scarceness of lymphatic vessels, occlusion of lymphatic vessels or insufficiency of lymphatic vessels; the only effective treatment to reduce Lymphedema is by mechanical means, pushing the lymphatic fluids upwards through the few lymphatic vessels left. The treatment goal is maintaining the limb in normal shape after the Lymphedema reduction has been achieved. Permanent elastic support is required, whether by elastic bandage or stocking.

After several years of experience with cases of lymph edema, (100 cases are investigated in outpatient clinic in EL Hussein Hospital treated from skin cellulitis, incrustation and ulcers then treated by pneumatic pump as mechanical segmental pressure not exceeding systolic one then painted with Unna`s boot then special stocking is used) we believe that this is the best method of reducing Lymphedema in the safest and fastest way.

Retrievable IVC Filter Insertion for Temporary Protection in Patients at High Risk of Pulmonary Embolism

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Background: Several temporary filtering devices have been developed for insertion into the inferior vena cava (IVC) by the transcatheter technique; they are either temporary or retrievable filters. The retrievable filters are usually self-expanding and self-attached devices which can be removed. **Objectives:** The aim of this study was to assess the efficacy and safety of retrievable vena caval filters in preventing pulmonary embolism in high risk group of patients when filter indications were transient. **Patients and methods**: Twenty Allen square stent retrievable filters (SSF) were temporary inserted in 20 patients (8 males and 12 females, mean age 41 years) who at transient high risk of pulmonary embolism (PE**).** The patients were referred to the vascular surgery department, El Hussein hospital during the period from July 2004 to July 2005. All filters were reviewed for deployment or retrieval complications as migration, dislodgment, tilting malposition or thrombosis inside the filter. The filters were retrieved from 2 days to 2 weeks from their insertion. All patients were reviewed for PE either clinically or radiologically (plain X ray chest, ventilation/perfusion scan or CT scan) in suspected cases. **Results:** All patients were proven to have DVT (100 %) either of lower limbs veins in 17 patients (85%) or of pelvic veins in 3 patients (15 %).The patients were referred from general surgery (8), obstetric and gynecology (6), and from vascular clinic (6).The main temporary filter indication was thrombolysis therapy (60%). Transfemoral insertion was done in 15 patient (75 %), and transjugular insertion was done in 5 patients (25 %).The average filter time was 5.4 days. The main filter problem was filter thrombosis (2 patients). All filters were retrieved safely except one was left as permanent filter because of thrombosis. Two patients died during follow up because of causes other than PE. **Conclusion:** The square stent filter is easy to place and to retrieve, is stable after placement and has a high efficacy for trapping emboli and excellent protection against PE.

Key words: Retrievable filters, pulmonary embolism, DVT

Foam Therapy of Varicose Vein

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Often hereditary, varicose veins occur in 20% of the adult population and are most prevalent in women. For some, varicose veins merely constitute a cosmetic problem. However, many people experience symptoms due to varicose veins. Varicosities may become clotted, inflamed and/or lead to chronic skin inflammation (stasis dermatitis) and leg ulcers.
The main goals of treatment of varicose vein (VV) are Cosmetic, relief of pain & dealing with complications. Lines of treatment of VV include conservative, fluid sclerotherapy and surgery (cold standard).
Foam is a mixture of gas and sclerosing liquid solution (detergent type) with tensio-active properties. The foam contains pockets of oxygen. As the foam forces blood out of the problem vein, the oxygen pockets simultaneously dissolve into the bloodstream, causing the vein to deflate and lie flat. This type of treatment was actually introduced decades ago in Europe, during the early 1940s. This avenue for research stayed relatively dormant until recent years, when foam therapy reemerged as an area for scientific research.
Our team in Vascular Surgery Unit of El-Hussein university Hospital has assessed the efficacy of foam therapy in 100 legs. The success of foam therapy was analyzed from patient satisfaction, quality of life improvement, clinical assessment and Duplex assessment. Foam therapy of varicose vein is superior over surgery because no hospitalization is required (can be done in out patient clinic), return to work after 3 hours, no anesthesia, no wound and is generally safe. Complications are very rare with foam which includes: deep vein thrombosis, air embolism, allergy and phlebitis. Ultimately, this revitalization in foam sclerotherapy research represents a new direction in varicose vein therapy that will hopefully result in a low risk, yet highly effective, treatment option.

Retrograde Venous Perfusion in Management of Mixed Connective Tissue Diseases

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Background: Mixed connective tissue diseases (MCTD) is a disorder in which features of various connective tissue diseases such as SLE, SSc, dermatomyositis- poly- myositis (DM/PM) can coexist. A number of mixed connective tissue diseases have vasculitis as a secondary manifestation of underlying primary process. Foremost among these are SLE, rheumatoid and MCTD. **Objectives:** The aim of this work is to through light on the vasculitic changes in mixed connective tissue diseases in relation to antiendothelial cell antibodies and the role of retrograde venous perfusion of prostaglandin E_1 in conjunction with immunosuppressive drugs in management of vasculitic changes. **Patients and methods**: Twenty two patients (17 females & 5 males) with mixed connective tissue diseases were selected from patients attended the outpatient clinics at Al Azhar University Center for Immunology & Allergic Diseases, Internal Medicine and Vascular Surgery outpatient clinics; El Hussein University Hospital during the period from may 2004 to September 2005. Patients were classified according to Alacron-Cegovia criteria into group A with marked vasculitis and group B with minimal vasculitic lesion. Group A was treated with immunosuppressive drugs plus retrograde venous perfusion (RVP), whereas gp B was treated with immunosuppressive drugs only. Assessment of digital capillary circulation by pulse oximeter was done for group A before and after RVP. **Results**: Combined treatment with immunosuppressive drugs and RVP markedly improve vasculitis even in severe cases. **Conclusion:** The use of immunosuppressive drugs in conjunction with retrograde venous perfusion as additive modality should be considered especially in patients with extensive digital affection.

Elective Repair of Umbilical Hernia in Decompensated Cirrhotic Patients; Safety, Efficacy and Outcome of A New Approach of Umbilical Herniorrhaphy

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Umbilical hernias [UH] occur almost exclusively when longstanding ascites is present in cirrhotic patients. Umbilical hernias expose cirrhotic patients to potentially life-threatening complications. **AIM:** Study of umbilical herniorrhaphy as a new approach for management of umbilical hernia in human cirrhotic patients with and without ascites by modification of Stone method of repair of UH. Safety, Efficacy, outcome and complications of the procedure have been evaluated. **METHODS**: We have been studied 282 cirrhotic patients due to chronic liver diseases and UH. Clinical, Sonographic, biochemical and hematological assessments of the cases have been done. Umbilical hernia has been evaluated for changes in overlying skin, contents and for complications. Herniotomy and repair as a 3-layers herniorrhaphy for UH have been done by our modifications of Stone's method of repair to UH as an elective management by Local anesthesia (LA). All patients were submitted to large volume parasentesis [LVP] during the operation with Perioperative antibiotics, human albumin and plasma. Cases of encephalopathy hepatocellular carcinoma & leaking UH were excluded. **RESULTS**: our patients were 171 males, 111 females and their ages were 18 to 76 years. The patients were 124 Child's C [group one, G.1] and 158 Child's B, [group two, G.2]. Dusky red and atrophic skin with pigmentations overlying the hernia have been found in 87.9% and 43.7% cases of G 1 & 2 respectively These skin changes was associated with excoriations &Scarring in 56.5% and 20.3% cases of G 1 & 2 respectively. Irreducible UH has been found in 68.4% & 24.1% cases of G 1 & 2 respectively. The operation with LVP has been done by the new method of umbilical herniorrhaphy.

During the operation the defect has been found small in relation to size of hernia in 74.1% & 60.8% cases of G 1 & 2 respectively. Caput medusa was found causing Irreducibility of the content in 64.4% of Irreducible UH. There was no operative mortality and most of the cases have been followed up to 3 years Wound infection has been occurred in 13.5% of cases but there was no postoperative mortality and no leaking in all cases. Recurrence has been occurred in 8.2% but late moralities in 9.2% were due to progress of the disease and hemorrhage. **CONCLUSION**: The triple layers herniorrhaphy to UH can be done safely by LA in cirrhotic patients with and without ascites as these patients have floppy lax abdominal wall and good tolerance to LA. Wound infection and hernia recurrence were related to chronicity of hernia, hepatic and nutritional state of the patients. Associated LVP with our repair are effective therapy, minimizes complications and improve life span of cirrhotic patients with ascites.

Endemic Infectious Diseases

Leprosy Hansen's disease (1873) A Panorama of Different Symptomatology

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Leprosy is a chronic communicable disease of man caused by Mycobacterium, leprae mainly affecting nerves and skin. It can be manifested clinically in different forms which are sometimes difficult to diagnose, these will be presented with mentioning of the investigations needed in such cases.

Typhoid Intestinal Perforation

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Objective: Typhoid fever is still common in developing countries. Its main cause mortality is intestinal perforation. The aim of this study is to outline the clinical features, diagnostic tools, operative treatment of this deadly complication. **Patients and Methods:** Retrospective study included all patients with typhoid intestinal perforation admitted at Hilla Surgical Teaching Hospital, Babylon, Iraq during four years period. All cases were studied in regards to their clinical presentations, operative findings, surgical procedures and postoperative results. **Results:** Eighty- six patients, 64 males and 22 females with about 3 to 1 male to female ratio with typhoid intestinal perforation diagnosed on laparatomy. All patients had a history of acute abdominal pain preceded by fever by about 10-14 days (Fever-Perforation Interval). The period between perforation and laparatomy ranged between 24-48 hours. 71 (87%) showed single perforation, 15 (17%) showed multiple perforations, in 82 (95%) the site of perforation was in the terminal ileum, in 4 (5%) it was in the jejunum. Eighty two (95%) were managed by double layers closure of the perforations with 2 00 silk, 4 (5%) by resection, 4 (5%) by exteriorization of the perforation for cases with recurrent perforation. The postoperative complications were: wound infection 41(48%) , abdominal wound dehiscence 7 (8%), intra-abdominal collections 6 (7%), reperforation or second perforation 4(5%) , adult respiratory distress syndrome " ARDS " 4 (5%) , typhoid hepatitis 3 (2%), septicaemia 5 (6%) acute renal failure 3 (2%). The mortality rate was 11(13%) and the causes of mortality were: septicaemia 5 (6%), acute renal failure 3 (4%) and ARDS 3 (4%). **Conclusions:** Typhoid fever is still common in developing countries; intestinal perforation is the main cause of mortality. The only method of treatment is surgical. The best way of control is improving of the sanitary programme of the population.

Key words: Typhoid, intestinal, perforation

Rapid and Recent Laboratory Diagnosis of Tuberculosis and Its Drug Susceptibility

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Project in Mansoura University
(5 years study)

Background: The rapid and accurate detection of TB is essential for management of patients and public health control. The drug resistant M.TB is an emerging problem of great importance to public health (WHO, 2004). This has stressed the need for more rapid techniques to identify M.TB and drug resistant strains.

Objectives: The aim of this project was to evaluate the rapid and recent laboratory techniques such as automated culture (Bactec), culture on Mycobacterium growth indicator tube (MGIT), Molecular biology (PCR & Gene probe) and serum TB. antibodies (IgG, IgM& IgA) compared to the conventional methods (ZN, culture on LJ and tuberculin skin test) .

Patients and methods: The study included 3790 specimens from different sites of the body suspected to have TB (sputum, urine, semen, endometrial biopsy, pleural fluid, BAL, pus, CSF…etc).The results revealed positive TB cases in 236 specimens (6.2%) and significant agreement between the rapid and conventional methods.

Conclusion and recommendations:

Serum TB IgG (ELISA) is a good rapid screening test for TB especially if combined with tuberculin test.

TB culture on Bactec and MGIT are rapid methods (10 days) compared to LJ (4-6 weeks).

Antituberculous susceptibility on Bactec (3-5 days) compared to LJ (4 to 6 weeks) are recommended for detection of drug resistance before therapy.

Nosocomial Infection in the Hemodialysis Setting: A Review with Recommendations for Control

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Chronic hemodialysis patients are at high risk for infection because the process of hemodialysis requires vascular access for prolonged periods. Person-to-person transmission of infectious agents may occur directly or indirectly via contaminated devices, equipment and supplies, environmental surfaces or hands of personnel.

Hemodialysis patients are immunosuppressed, which increases their susceptibility to infection and they require frequent hospitalizations and surgery, which increases their opportunities for exposure to nosocomial infections

Bloodborne virus infections in hemodialysis centers include hepatitis B virus, hepatitis C virus, hepatitis D virus and human immunodeficiency virus. Bacterial infections, especially those involving vascular access, are the most frequent infectious complication of hemodialysis.

Preventing transmission among chronic hemodialysis patients of bloodborne viruses and pathogenic bacteria requires implementation of a comprehensive infection control program including:

- Routine serologic testing for hepatitis B virus and hepatitis C virus infections.
- Vaccination of susceptible patients against hepatitis B.
- Surveillance for infections and other adverse events.
- Training and education.
- Isolation of patients who test positive for hepatitis B surface antigen.

Bladder Carcinogenesis via Microbial Infection

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Background: In Egypt, Cancer bladder is the most frequent malignant tumor of the urinary tract. Recent epidemiological studies suggest that the risk for urological malignancies may be related to the exposure to infectious agents, especially in those patients whose tumors show a clear tendency to multicentricity, papillary mode of growth and high recurrence rate.

Aim: 1- To investigate the role of Human Papillomaviruses type 16,18 (HPV16,18), Cytomegalovirus (CMV), Epstein-Barr virus (EBV), Herpes Simplex virus type 2 (HSV-2) and *Chlamydia trachomatis* in the etiopathogenesis of cancer bladder, using polymerase chain reaction (PCR) and Electron Microscopic Studies (EMS) on bladder tissue biopsy specimens. **2-** It is also a trial to highlight the possible correlation of such infections with the apoptosis of buffy coat cells, serologic responses using Enzyme Linked Immunosorbent Assay (ELISA), clinical staging and histopathological grading.

Methods: This study was conducted on eighty inpatients of the Urosurgery Department of TBRI, who were identified histopathologically and clinically as three groups, cancer bladder (group I, 20 patients), cystitis (group II, 20 patients) and cancer bladder with cystitis (group III, 20 patients), and a fourth group of 20 normal healthy subjects as controls. They were all subjected to the following: Detection of viral genomic sequences by PCR on bladder tissue biopsies (except the control group), buffy coat, serum and urine samples, EMS on bladder tissue biopsies (except the control group), and buffy coat cells of 10 patients of each group. Serological Detection by ELISA of HPV IgG using Baculovirus recombinant HPV

virus-like particles, EBV IgG (EBEA,EBNA), & IgM, HSV-2 IgG and IgM, CMV IgM, IgG, and CMV antigen (pp65) in PMNL by monoclonal antibody test.

Results: Among all Patients 34 cases (56.6%) were virally infected with different viruses under the study or *Chlamydia trachomatis*. HPV16 was detected in 18 cases (53%), HPV18 in 8 (24%), CMV in 16 (48%), EBV in 14 (41%), HSV-2 in 16 (48%) and *Chlamydia trachomatis* in 14 (41%). Infection with multiple viruses (25,74%) was significantly associated with either cancer or cystitis than single infection (9,26%) ($P<0.01$). EMS of the examined cases showed remarkable apoptotic changes in lymphocytes and neutrophils of 75% of either cystitis or cancer cases and were absolutely associated with virally infected cases. IgG antibodies to HPV16 VLPs were detected in 66.7% and 11.4% of HPV16 DNA positive and negative patients respectively and in none of healthy controls.

Conclusion: Although further investigation and evidence are needed, our study confirms significant association of mixed viral infection with bladder cancer in Egyptian patients which suggests the interesting hypothesis of a viral synergistic action in bladder carcinogenesis. The sensitivity and accuracy of PCR could be increased by adding EMS. PCR on serum or urine samples proved to be non-sensitive. ELISA for detection of anti-HPV16 VLPs could be used in conjunction with HPV DNA detection techniques for accurate clinical diagnosis and epidemiological studies. Patients positive serologically for these viruses should be considered at higher risk for development of bladder cancer, thus suggesting the opportunity of a clinical and virological follow-up. Detailed investigations on the different apoptotic pathways in general and on the viral manipulations of these pathways are necessary so as to open up new strategies for therapy.

Presumptive Diagnosis of Nocardiosis: Patients Hospitalized in the Infectious Diseases Unit of Constantine Teaching Hospital (Algeria)

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Nocardiosis is a localised or disseminated infection caused by soilborn aerobic actinomyctes (*Nocardia* species). The incidence of such infection is not known, although nocardiosis has been reported in most regions of the world. Recently, an n increase of nocardial infections was reported, however in Algeria, *Nocardia* sp. are neglected in laboratory specimens. So, to isolate *Nocardia* species, 102 patients hospitalized in the infectious diseases Unit of Constantine Teaching Hospital, were examined. Seventeen samples (expectorations, gastric liquid, pus…) revealed positive in aerobic actinomycetes. On the whole, twenty three strains were isolated from these samples. According to the morphological characteristics and acido-alcohol fastness, six strains are assigned to the group of *Nocardia* and related genera, Fourteen strains are *Streptomyces* sp., one strain is *Micromonospora* and two strains belonging to the genus *Actinomadura*. To differentiate the *Nocardia* from the other related genera two biochemical tests were carried out namely; nitrate reductase and β-D-galactosidase. This proved that 4 strains are *Nocardia* and 2 strains are *Tsukamurella.* Three strains assigned to the genus *Nocardia* were isolated from patients having tuberculosis and already treated with antitubercular therapy. Thus, it could be a simultaneous infection with *Nocardia* and *M. tuberculosis*; especially if we know that there is a similarity between clinical manifestations of nocardiosis and tuberculosis, which have two distinct clinical courses with far different treatment. So, special attention should be paid to the laboratory diagnosis of nocardiosis in patients with suspected tuberculosis.

Key words: Endemic diseases, Infections, Nocardiosis, Tuberculosis, *Nocardia* sp.

Wednesday November 8th 2006

Plenary Lectures

Ion Channels-Physiology, Toxicology and Pathophysiology

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Ion channels are ubiquitous, pore forming membrane proteins which allow ions to flow across cellular membranes and are of pivotal importance in cellular physiology and pathophysiology. The passage of ions through appropriate channels plays a major role in the generation of cellular responses and electrical activity such as the membrane resting potential, action potentials, the regulation of hormone and transmitter release, sensory transduction or in regulation of the cell volume and cell proliferation. The dynamics of the channels, their open and closed conformation, is controlled by membrane voltage, ligand binding to a receptor, by mechanical stimuli or by phosphorylation/dephosphorylation.

The diversity of channel proteins and actions is generated by multiple genes encoding the pore-forming channel subunits, formation of heteromultimeric channels, participation of auxiliary (non-pore-forming) and other subunits, and modulation of channel properties by post-translational modifications and other mechanisms. Malfunction of ion channels can be mediated by animal or plant toxins (saxitoxin, conotoxins, etc.) or diseases caused by gene mutations (channelopathies, i.e. forms of epilepsy, myotonia).

In this review I shall discuss a few selected examples of ion channels, their structure and function, the action of toxins and some of the molecular mechanisms which cause neurological or muscular diseases.

What Role Does Play 2'-Deoxycytidine As A New Cancer Marker For Diagnosis And Prognosis In Recovery?

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From our joint clinical study with National Cancer Institute, Cairo University for long time, it is proved that 2'-deoxycytidine (2'-dCyd) in bloods of patients with breast cancer was found increased by high performance liquid chromatography and a cancer marker for bad prognosis. When 2'-dCyd was measured by our developed enzyme immunoassay, it did increase in bloods of patients with bladder, acute lymphocytic leukemia *etc.*, which meant useful in diagnosis as well as prognosis. In our basic experiments, increase of 2'-dCyd level seems to survey and inhibit the cancer proliferation in mice to some extent. Various recent studies on recovery have focused on epigenetic mechanism, in which histone deacetylase (HDAC) is a key enzyme involved in repression of tumor suppressor genes. We have found that 2'-dCyd inhibited HDAC from SP2/0 mouse myeloma cells used *in vitro* and *in vivo* experiments compared with HDAC from P388 mouse leukemia cells and the standard HDAC from HeLa cells. We wish that 2'-dCyd should be a good leading compound to develop a drug for cancer. Anyway, the fact that endogenously increased 2'-dCyd inhibits proliferation of tumor cells through HDAC would be an important mechanism in cancer recovery, which might fail in cancer patients against unknown factors of strong oncogenesis.

Key words: 2'-deoxycytidine, cancer marker, histone deacetylase, endogenous inhibitor, recovery.

Triterpenoids Isolated From Arabian Frankincense Induce Cell Cycle Arrest and Apoptosis in Human Prostate Cancer Cells

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The resin from *Boswellia Carterii* contains a complex mixture of mono- and triterpenoids that possess biological activities, including antitumor properties. We have previously shown that systemic application of acetyl-11-keto-β-boswellic acid (AKβBA) inhibited tumor growth and triggered apoptosis in pre-established PC-3 xenografts in nude mice via inhibition of IκB kinaseα. Here, we have analyzed the molecular mechanisms of the cytotoxic effects of 3-keto-tirucallic acid (KTA) and AKβBA in human prostate cancer cell lines in vitro. The triterpenoids were isolated from the oleo-gum resin of *Boswellia Carterii*, and purified by reversed phase HPLC to chemical homogeneity; their structures were confirmed by mass spectroscopy.

AKβBA and KTA (1-100 µM) exerted concentration-dependent anti-proliferative and cytotoxic effects on the androgen-dependent LNCaP prostate cancer cell line as well as on the androgen-independent, chemoresistant PC-3 prostate cancer cell line as measured either by the XTT assay or by lactate dehydrogenase release. A rapid induction of apoptosis was confirmed by analysis of phosphatidyl serine expression on the cell surface and formation of DNA-laddering. Flow cytometric cell cycle analysis of LNCaP and PC-3 cells treated with KTA and AKβBA (10 µM) for 24 and 48 h demonstrated accumulation of the cells in the G_0/G_1 phase, whereas the amount of cells in the S-phase was drastically reduced. Accordingly, the cycle-dependent phosphorylation of the retinoblastoma protein was rapidly reduced. Cell division is under strict control of cyclin-dependent kinases (CDKs) and their heterodimeric cyclin partners. Western blot analysis of prostate cancer cells treated with the triterpenoids revealed downregulation of cyclin D1, a crucial cell cycle regulator, but

not of cyclin E or Cdk4. Downregulation of cyclin D1 occurred at the transcriptional level. The cyclin D1 promoter is regulated by NF-κB and TCF transcriptional regulators. Accordingly, an early downregulation of the nuclear accumulation of β-catenin and p65 was observed in triterpenoid-treated prostate cancer cells. Overexpression of the NF-κB inhibitor IκBα-SR, inhibited the constitutively active NF-κB signalling in PC-3 cells and reduced the cell proliferation, but did not trigger apoptosis. These results indicate that a sole inhibition of the NF-κB activity is not sufficient to trigger apoptosis in prostate cancer cells.
Thus, triterpenoids inducing a G_0/G_1 checkpoint arrest might provide a novel approach for the treatment of chemoresistant human prostate cancer.

The work was supported by the Deutsche Krebshilfe

An Overview of the Technical, Environmental and Health Aspects of Electromagnetic Fields

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In the light of the wide and extensive use of electromagnetic waves (ELF and Microwaves); this paper examines the different aspects of this progressive technological phenomena. These aspects are as follows

- The technical features of microwaves in particular these used in mobile networks and handsets
- The biophysical interaction of these waves with biological system
- The health effects of microwave penetration of human systems
- The environmental impacts of this wave as they extensive use; would lead to elevating the average power level in the atmosphere
- The health and safety standards and regulations concerning the use of the microwave.

The paper also proposes the best and safe approaches to live with this inevitable invading technology

Complementary Medicine: New Vision for Better Health

Acupuncture Is a Preventive Healing System

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Acupuncture is a healing system, which originated thousands of years ago and is based on maintaining the balance in nature. We are all mirrors of our environment and must maintain a balance of nature, both inside and outside of our bodies. This balance is known as Yin and Yang and is present in all things.

In our bodies there are energy pathways very similar to electrical circuitry. Along these pathways, or meridians, are switches or points, which help maintain the flow of energy within our bodies. When there is a disruption in our energy flow or a blockage we would perceive this as pain and disease. By using acupuncture needles at those points, we are able to conduct the flow of energy to stabilize the body back to harmony.

Acupuncture needles are very fine filaments resembling a thin wire that are pre-sterilized and disposable. Each needle is used only once and discarded through medical waste system. The treatments are very safe and comfortable.

Acupuncture will treat well over 200 disorders and is a wonderful preventative healing system. Acupuncture can also strengthen the immune system and enhance a feeling of peace and well-being.

Acupuncture is used to treat a full range of diseases, infections, immune system disorders, acute and chronic pain syndromes, hormonal imbalances, digestive disorders, headaches, vertigo, weight management, drug addictions, smoking cessation and so much more.

Nutrition for Weakened Immune System

Ghada Ali Helmy Moussa

Complementary Medicine Department

Modern conventional medicine battles disease directly by means of drugs, surgery, radiation, and other therapies, but true health can be attained only by maintaining a healthy, properly functioning immune system. It is the immune system that fights off disease-causing microorganisms and those engineers the healing process.

Weakening of the immune system results in increased susceptibility to virtually every type of illness. Some common signs of impaired immune function include fatigue, listlessness, repeated infections, inflammation, allergic reactions, slow wound healing, chronic diarrhea, and infections.

By understanding some of the basic elements of the immune system and how they work, plus the overall role the immune system plays in your health, you can take responsibility for your own health.

Marvelous as it is, the immune system can work as it should only if it is cared for properly. This means getting all the right nutrients and providing the right environment, plus avoiding those things that tend to depress immunity.

The program of supplements outlined here is designed to strengthen the immune system, whether it is impaired as a result of disease, stress, inadequate nutrition, poor living habits, chemotherapy, or a combination of one or more of these factors.

Control of Infectious Diseases Using CAM Modalities

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Modern science attributes infections to bacteria, fungi, viruses … etc. Previous generations blamed flying venom or the evil eye, while Chinese medicine attributes chills and fevers to "6 evils" related to climatic factors: wind, cold, heat, dampness and fire.

Many herbs traditionally used to fight infections, have been identified as potent antibiotics and immune system stimulants. Unlike wide-spectrum orthodox antibiotics, they are specific in the microbes they attack. So, they have less impact on the friendly bacteria in the gut, making digestive upset that can follow orthodox mediations less likely. Herbs can help to control the course of illness as the body works to restore balance. Common colds, for example may be "hot" or "cold" in character, or alternate between the two as the illness progresses. "Cold" conditions need warming herbs; such as ginger or angelica. "Hot" infections can be cooled with herbs that promote sweating, such as peppermint or mulberry leaf.

Some plants are of antibacterial actions as Echinacea spp. in tonsillitis and commiphora molmol (Myrrh) for healing wounds.

Some plants act as antifungal as Allium satirum (Garlic), calendula officinalis (Pot marigold) and Commiphora molmol (Myrrh).

Some plants are useful for excess yeast in the gut as Calendula officinalis (Pot marigold) in candidiasis.

Some plants are immunostimulants as Commiphora molmol (Myrrh)

Another CAM modality; that can be helpful in control of infections is ozone therapy. It can reduce the number of infecting agents. It can reduce the viral load in hepatitis and decrease bacterial numbers in bacterial infections

Frequently Asked Questions about Homeopathy

Heba Shafei

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What is homeopathic medicine? It is a scientific therapeutic method which embodies a philosophy of understanding people and illness in an holistic context with the goal of promoting optimal health and healing Homeopathy is a medical specialty that is based on the knowledge and application of medicines contained in the U.S. FDA-recognized *Homeopathic Pharmacopœia of the United States.*

Where is homeopathy particularly effective? Asthma, Hypertension, Upper respiratory infection, Otitis media, Allergic rhinitis, Diabetes, Chronic sinusitis, Bronchitis Sprains/strains, Arthritis, Back disorders…..

What about homeopathic research? The prestigious medical journal *Lancet*recently published a comprehensive meta-analysis of the randomized, placebo-controlled clinical trials which have been conducted in homeopathy. (8) Analysis of the 89 trials with a consistent high quality methodology revealed consistently positive results for homeopathy when compared with placebo.

What about cost effectiveness? In France, research on cost-effectiveness has shown that the annual cost to the Social Security System for homeopathic treatment is 15% less than that of conventional treatment and the price of the average homeopathic medicine is one third that of standard drugs.

What is homeopathy's position in the world? Worldwide, homeopathy has continued to grow and, according to the World Health Organization, is the most widely practiced alternative form of medicine, second only to allopathic medicine.

Who is a homeopathic physician? All licensed physicians legally can practice homeopathy under their conventional license.

Reproductive Endemic Diseases

Cryopreservation of Human Oocytes and Embryos Is a Point Of Interest to Every ART Lab

Zohni Khaled

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Schleswig-Holstein University, campus Luebeck, is a well known university for it s leading experience in ART. Since March 2005, vitrification became the method of choice in their lab for cryopreservation of human oocytes and embryos. This presentation will show the protocol used and will compare the results of this recent technique.

Ultrasonographic Findings in Abnormal Uterine Bleeding among Intrauterine Contraceptive Device Users

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Background: IUCD is used by more than 100 million women around the world. Irregular vaginal bleeding is the most common complication for many women using this method.
Objective: To evaluate the correlation between the position of intrauterine contraceptive device within the uterus and abnormal uterine bleeding by trans-vaginal ultrasonography.
Design: A cohort prospective case-control study
Setting: Out-patient gynecology clinic at Kasr El-Eini Hospital, Cairo University
Population: Fifty women with IUCD in place and irregular vaginal bleeding were enrolled in the study and compared with 30 women with IUCD and normal menstrual flow.
Method: The distances between the top of the vertical arm of IUCD and the fundus (IUCD-F), the myometrium (IUCD-M), and the junction between the endometrium and uterine cavity (IUCD-E) were measured by the use of TV U/S scan. Also, the distance between the lower end of the vertical arm of IUCD and the internal Os was measured (IUCD-I).

Laboratory Assessment of Genital Tuberculosis in Infertility

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Genital tuberculosis is one of the most common causes of infertility in developing countries. The clinical diagnosis of genital tuberculosis is more difficult than pulmonary tuberculosis because of the non-specific manifestations of the disease that are often atypical and misleading. The aim of this work was to through a light on the problem of genital TB as a causative factor of infertility and to asses the potential value of screening tests in the diagnosis of genital TB. This study was carried out on 116 infertile cases, 66 females and 50 males (unrelated to each other). The infertile cases were subjected to screening tests of TB by tuberculin, TB IgG, TB IgA and TB IgM.

Among 116 infertile cases; the screening tests revealed 59 positive cases (50.9%), tuberculin was positive in 53 cases (45.7%), serum TB IgM was positive in 26 cases (22.4%), serum TB IgG was positive in 18 cases (15.5%) and serum TB IgA was positive in 12 cases (10.3%). On confirmation of positively screened cases, 10 cases (16.9%) were positive for TB by automated culture. These 10 cases represented 8.6% of total infertile cases (116). This reflects the potential value of screening tests in concentration of TB cases especially in cases of silent infection as in genital tuberculosis. Concerning PCR, it had a sensitivity of 100% and a specificity of 89.8%. Anituberculous drug susceptibility testing by Bactec system revealed that Ethambutol had the highest sensitivity (100%) followed by Rifampicin (70%), Streptomycin (60%) and the lowest sensitivity was INH (30%).

Fetal Growth Velocity as a Marker of Caesarean Section in Low- Risk Pregnancy

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Objective: To evaluate fetal growth velocity as a predictive marker in caesarean section for fetal distress and neonatal outcome in low risk pregnancy. **Design:** Retrospective analysis of prospectively collected ultrasound data. **Setting:** National Research Centre, Egypt **Population:** One-hundred and forty-eight pregnant women were enrolled in a longitudinal study of growth velocity estimation undergoing labour at a gestational age of > 37 weeks. **Method:** Fetal abdominal area and standard deviation scores were calculated for size at 32 and 36 weeks of gestation together with the growth velocity scores between these two gestational ages. Receiver-operator characteristics were calculated for fetal abdominal area scores at 32,36 weeks and velocity scores in the prediction of caesarean section for fetal distress and/or admission to the special care baby unit. **Main outcome measures:** Caesarean section for fetal distress and admission to the special care baby unit with a diagnosis of perinatal hypoxia. **Results:** Pregnancies ending in caesarean section for fetal distress or admission in the special care baby unit had significantly lower fetal abdominal area scores at 36 weeks of gestation (mean Z score -0.71vs -0.18) and lower fetal abdominal area growth velocity (mean Z score -1.31vs-0.01).Taking a cutoff Z score of –1.2 derived from the receiver-operator characteristic curve, fetal ,abdominal area velocity has a sensitivity of 65% and specificity 75% for caesarean section for fetal distress and/or admission to the special care baby unit. **Conclusion**: Growth velocity of the fetal abdominal area in the third trimester is superior to a single measurement of the fetal abdominal area at either a mean of 32 or 36 weeks of gestation in the prediction of caesarean section for fetal distress and admission to the special care baby unit in low-risk women labouring at term. These results support the hypothesis that in the third trimester at least, growth rate in utero is more relevant to intrapartum performance and immediate perinatal outcome than estimates of fetal size alone.

Cancer In Relation To Endemic Diseases

Role of Telomerase, Survivin, and Caspases-3 during Experimentally Induced Hepatocarcinogenesis

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Introduction: Hepatocarcinogenesis (HCC) is a multistep process. Models of chemically induced hepatocarcinogenesis allow us to evaluate the molecular changes in this process. **Aim**: This study is aimed to evaluate the telomerase activity, surviving; caspase-3 expression during the multistep process of hepatocarcinogenesis initiated by nitrosamine precursors; to dissect their potential prognostic value and to discuss the relationship between survivin and caspase-3 expression. **Material and Methods**: The study was performed on 150 albino rats divided into 2 groups (control and treated group). TRAP assay was performed to detect telomerase activity and western blot analysis was performed to detect both surviving and caspase-3 expression. Histopathological examination of the collected liver sample was also performed. **Results**: The biochemical and histopathological studies recorded that HCC was developed after 12 months of treatment, a significant increase in telomerase activity and survivin expression was observed during the development of HCC while caspase -3 expression level is reduced. Inverse and non linear correlation was observed between survivin and caspase-3 expression. **Conclusion:** Reactivation of telomerase enzyme is a cancer – specific event and may further more contribute to the development of HCC. Up regulation of surviving and down regulation of caspase-3 expression suggesting that the suppression of apoptosis may be a major step involved in hepatocarcinogenesis. Telomerase and survivin may be used as a potentially prognostic marker for HCC. Survivin may inhibit caspase-3 via indirect pathway.

Keywords: telomerase, surviving, caspase-3, nitrosamine and hepatocarcinogenesis.

Protective Effect of Coenzyme Q10 against Cisplatin-Induced Nephrotoxicity in Rats

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Background: Cisplatin (*cis*-diamminedichloroplatinum II) is an effective agent against various types of solid tumors as testicular and ovarian carcinomas. Despite of its effectiveness, the dose that can be administered is limited by its nephrotoxicity. **Aim:** The purpose of this study was to examine the role of coenzyme Q10 in the prevention of cisplatin induced nephrotoxicity. **Results:** The results of current study showed that administration of cisplatin produced significant elevation in BUN and serum creatinine. In addition, MDA, GSH and GSSG contents in the kidney tissues were significantly elevated. On the other hand, catalase and glutathione peroxidase activities were significantly decreased by cisplatin treatment. Nitric oxide level in the kidney tissue was significantly decreased accompanied with non significant change in its serum level. Treatment with coenzyme Q10 for 5 consecutive days before cisplatin ameliorated the increases in tissue MDA, GSH and GSSG levels. Moreover, the combined regimen showed a significant increase in catalase activity compared to cisplatin treated group alone. **Conclusion**: In conclusion, oxidative damage may be involved in the mechanisms of cisplatin-induced nephrotoxicity. The use of coenzyme Q10 confers some protection against this toxicity which may be attributed to its antioxidant properties.

Keywords: Protection, coenzyme Q10, cisplatin, nephrotoxicity, rats

Ames Test For The Detection Of Mutagens In The Urine Of Egyptian Cancer Patients

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The analysis of urine for mutagenic substances could provide means both for verifying suspected and for detecting otherwise unrecognized substances that may be capable of damaging the human genome of urinary bladder. We aim at studying the possible mutagens present in the unconcentrated human urine of a variety of cancer patients using Ames test for mutagenicity of Salmonella species. We tested urine samples from 121 cancer patients; 64 bladder cancer, and 57 non bladder cancer. Sixty-seven non cancer apparently healthy subjects were tested as controls. Four strains of histidine requiring from ***Salmonella typhimurium*** LT2 bacteria were used, namely TA 97, TA 98, TA 100 and TA 102 for the study. Each tester strain carries a different type of mutation (defect) in the histidine operon. Mutagenicity values were obtained in urine of bladder cancer patients amount to 21.9%, 34.4%, 26.6%, and 21.9% for tester TA 97, TA 98, TA 100 and TA 102 strains respectively. As for non bladder cancer (liver and breast cancer) it amounts to 8.7%, 3.65%, 64%, 26.3% for tester TA 97, TA 98, TA 100 & TA 102 strains respectively. While normal subjects showed 8.9%, 0%, 16.4%, 2.9% for tester TA 97, TA 98, TA 100 and TA 102 strains respectively. Our results show that the urinary Ames test has the potential of being easy and quick method to be used as a survey technique for the detection of high-risk subjects that might have mutagenic changes in the bladder genome.

Gene Expression Profile of Egyptian Hepatocellular Carcinoma Using cDNA Microarray

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Background: In Egypt, HCC is reported to account for about 4.7% of chronic liver disease patients. **Objective:** cDNA microarray was used to profile the gene expression patterns in Egyptian patients with HCC.

Methods: Twenty five HCC and corresponding non-cancerous liver tissues were obtained from patients who had undergone surgical resections at NCI. Each sample was tested on three separate arrays using 10 k, 15 k and 40 k chips feature. We first arranged the relative expression of each gene (Cy5:Cy3 intensity ratio) into one of four categories: up-regulated (ratio, >3.0), down-regulated (ratio <0.9), unchanged (ratio, between 0.9 and 3.0) and not expressed (or slight expression but under the cutoff level for detection). The data were analyzed and clustered using the Genesis program. The alteration in gene expression levels of some randomly selected genes was further confirmed by RT-PCR and immunohistochemistry.

Results: Three well defined Egyptian HCC patterns were detected regardless the up- or down-regulated genes. The most common up-regulated genes are the ras family, nuclear receptor, activator 2, IL-2r and c-erb2. The most common down-regulated genes are Ca channel, dihydroxypyrimidine dehydrogenase, CTP synthetase, E2 ubiquitin ligase and further analysis will be presented.

Conclusion: The results of this study confirmed that there was genes variability in the expression profile of HCC in Egyptian patients in comparison to patients in Western countries and the USA.

The Interplay between Apoptotic, Pre-Apoptotic and Anti-Apoptotic Genes in Hepatocarcinogenesis

Abdel-Rahman N. Zekri, Abeer A. Bahnassy, Nadia El-Guendy, Sabrein A. Abdel-Wahab, Amal M. El-Shahaby, Mohamed Hafez, Saher Radwn

National Cancer Institute, Cairo, Egypt, Kaser El-Aini School of Medicine, Cairo, Egypt, El-Azhar University, Cairo, Egypt.

In an attempt to understand the complex and largely unsolved apoptotic pathway, our lab developed Hep-G-2 cell line harboring consistent HCV- genotype-4 replication. We then followed the expression patterns of a number of apoptotic genes everyday for four days post infection and then every week up to 7 weeks. We also quantified the expression of caspase 3, 8 and 9 in the tissue culture medium and the infected cells by ELISA in relation to viral replication by RT-PCR and Real-Time PCR up to 135 days post infection. Furthermore, the expression of the same group of genes and the cytokines level were studied in 50 chronic hepatitis patients and 35 HCC to find the possible relation between *in vivo* and *in-vitro* apoptotic pathway and cytokines in infected HCV patients. There was a consistent increase in caspases for the first 2 weeks post infection followed by a consistent decrease up to the end of the experiment. This is in agreement with the changes in the expression level of other apoptotic genes both *in vitro* and *in Vivo*. The level of cyokines in patients sera are shown. The detailed data and the possible interplay pathway (s) will be presented. Our study also shows a consistent correlation between apoptotic proteins changes detected in cell lines and in patients. *Fas* was highly expressed at early stages in cell lines and in normal liver tissues followed by a dramatic reduction post- HCV infection. The effect of HCV infection on other apoptotic proteins started very early post infection, and there was an obvious interplay between apoptosis and the level of cytokines and chemokines in infected patients, suggesting that hepatitis C inhibits apoptosis by modulating intracellular pro-apoptotic signals. We also, noticed that HCV affects the apoptotic machinery directly differently during the course of infection and as the disease progresses apoptosis is inhibited. Consequently, there is an immune system evasion and persistence of HCV infection. This study could open new gate for understanding apoptosis and developing a target therapy to inhibit viral persistence.

Preventable Pediatrics Endemic Diseases: Update on Immunization

Adverse Effects of Vaccination

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Summary

Immunization is a successful and very effective mean of preventing infectious diseases. Modern vaccine although safe and effective, can be associated with adverse effects ranging in severity from mild to life threatening.

Immunization is the process of inducing immunity artificially by either vaccination *(active immunization)* or administration of antibody *(passive immunization)*.

Vaccines are actually very safe but it may associate with a risk of adverse reaction (side effects)

Knowledge of vaccine contraindications and precautions is an important aspect at immunization practice; it helps to minimize the occurrence of adverse reaction.

Adverse reaction is an untoward effect caused by vaccine that is extraneous to the vaccine's primary purpose of production of immunity

These reactions may be local (Pain, swelling, redness) at site of injection, systemic (Fever-malaise-headache), or allergic due to vaccine or vaccine component. Fortunately, serious adverse events occur rarely, and some are actually rare that can not be assessed.

Combination Vaccines for Childhood Immunization

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SUMMARY: An increasing number of new and improved vaccines to prevent childhood diseases are being introduced. Combination vaccines represent one solution to the problem of increased numbers of injections during single clinic visits. This statement provides general guidance on the use of combination vaccines and related issues and questions.

Combination vaccines merge into a single product antigen that prevent different diseases or that protect against multiple strains of infectious agents causing the same disease.

The use of combination vaccines is a practical way to overcome the constraints of multiple injections. It might improve timely vaccination coverage. Some immunization providers and parents object to administering more than two or three injectable vaccines during a single visit because of a child's fear of needles and pain and because of unsubstantiated concerns regarding safety.

Other potential advantages of combination vaccines include a) reducing the cost of stocking and administering separate vaccines, b) reducing the cost for extra health-care visits, and c) facilitating the addition of new vaccines into immunization programs. The price of a new combination vaccine can sometimes exceed the total price of separate vaccines for the same diseases. However, the combination vaccine might represent a better economic value if one considers the direct and indirect costs of extra injections, delayed or missed vaccinations, and additional handling and storage.

This is not simple task, combination vaccines have some drawbacks. Chemical incompatibility or immunologic interference when different antigens are combined into one vaccine could be difficult to overcome

Demonstrating the Value: Human Rotavirus Vaccine

Enas Raafat Abd Al-Hameed

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Summary

Rotavirus (RV) is the most common cause of severe diarrhoeal illness in children of <5 years of age worldwide, and the greatest cause of diarrhoea-related deaths in children.

Rotavirus infects virtually every child in the world within the first five years of life, causing gastroenteritis (diarrhoea and vomiting) and the similar incidence of disease in developed and developing countries suggests that improvements in hygiene and water quality are unlikely to improve disease control.

Rotavirus infection is rarely seen in newborn infants, suggesting maternal antibody protection is passed on to the newborn. The peak incidence of clinical illness is among infants of six months to two years of age, however younger infants can become severely ill as well, In countries with temperate climates, there is a seasonal variation and rotavirus infection is often known as 'winter diarrhoea'

A live attenuated human rotavirus vaccine for infants has been developed, which provides protection against rotavirus disease. It is the first human oral rotavirus vaccine and it provides immunity by mimicking the natural infection caused by the wild-type virus. This is achieved without causing gastroenteritis. Clinical trial data conducted in twelve countries support the evidence that immunization is the most effective intervention to reduce rotavirus disease burden in infants and young children worldwide. Post-vaccination follow-up revealed that the overall safety profile was in favor of rotavirus vaccination

Pediatric Immunization for the Future

Ahmed Foda

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Summary: The recommended immunization protocols for children have changed dramatically over time. In fact, none of the current vaccines were available at all or in their current make-up only a decade ago. The changes of immunizations continue at a rapid rate and within another decade, the current vaccinations likely will have been replaced. New vaccines or technologies will be developed, including vaccines for allergy and cocaine abuse, and the potential for edible plant vaccines. Rotavirus vaccine is a very recently approved vaccine by the CDC (Centre for Diseases Control) in the USA on February 2006 for use in American infants. Vaccines in the pipeline (under development) include Hepatitis C vaccine, Malaria vaccine, Giardia vaccine, Entamoeba histolytica vaccine and Leishmania vaccine.

This article overview some infectious diseases in Arab countries and highlights the newly released vaccines to prevent overcome these diseases.

Prevalence of Long Term Immunity of Hepatitis B Vaccine among Egyptian Children

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Objective: To assess the effectiveness and long term immunity of hepatitis B vaccination program among Egyptian children.

Methods: This cross sectional study included 242 children (116 males & 126 females) in the age range 6 -12 years. These children received full vaccination course against hepatitis B according to the obligatory schedule of vaccination adopted in Egypt since 1992.A questionnaire was designed and administered to the parents or caretakers of the children to collect demographic data and history of hepatitis B vaccination in infancy. The children height and weight were measured at the time of enrollment to determine body mass index (BMI). Quantitative determination of hepatitis B antibody (HBs antibody) in the sera was performed by competitive enzyme immunoassay (ELISA).

Results: The overall seroprevalence of hepatitis B antibody (≥10 IU/L) was found to be 39.3%. The seroprotection level was 47.6% in the age group (6 -7 years) then it decreases gradually with age to be 26.9% in the age group (10-12 years), but the decrease was not statistically significant (P> 0.05).The mean level of hepatitis B antibody decreased significantly with increasing age from 75.0 IU/L in the age group (6 -7 years) to 31.5 IU/L in the age group (10-12 years) (P< 0.05). A significant negative correlation was found between current age and HBs antibody levels (r = - 0.31, p = 0.041). By multiple logistic analysis, increasing either age or weight for age were found to be the significant predictor variables for a non seroprotective level with adjusted odds ratios 1.23 & 8.31 respectively.

Conclusion: More than half the studied children had no seroprotection levels of HBs antibody and this poses the risk of infection. The failure to achieve satisfactory seroprotection level by the national immunization program, reflect the need to re-evaluate the current hepatitis B vaccination strategy. Further studies are needed to explain whether this low seroprotective level is due to waning of immunity with time or due to initial low response. Until then, a booster dose is suggested for maintaining a high seroprotective level.
Key words: HBV, Hepatitis B, Immunoprophylaxis, Vaccination, long term efficacy& immunogenicity, booster dose.

Endemic Parasitic Diseases

Clinical Epidemiology And Control Of Dengue Fever Outbreak In Al-Hami Subdistrict, Hadramout Governorate In Yemen, March- May 2005

Abdulla Salim Bin Ghouth

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Objective: The aim of this paper is to present the clinical epidemiology and entomological evaluation of control measures of dengue outbreak in malaria free area in Al-Hami subdistrict in Hadramout governorate, Yemen.

Materials and methods: Control measures implemented were case management and laboratory based surveillance in Al-Hami health center, indoor space spraying with deltamethrine, community health education and visiting the randomly selected houses to ensure clean water storage or to change the contaminated stored water.

Results: A total of 128 cases were reported according to the standard WHO case definition of dengue fever. Epidemic curve showed that the peak of an outbreak occurred in mid of April 2005 then declines to be zero in the first week of May 2005 where the planned control measures were completed. Mean age of the affected persons was 16.8 years; ranged from 5 months to 55 years. Males were more affected than females. Last cases were reported in the first of May 2005, after which no suspected cases were reported in May and June 2005. Entomological investigation indicated sharp reduction in house and container indices.

Conclusion: The integration of the four main measures can compact dengue outbreak as early as possible; these are: laboratory-based surveillance, indoor insecticidal space spray, regular public health inspection of stored water and health education.

Key wards: Dengue, Hadramout, Outbreak

Impact of Indoor Residual Spray with Lambda-Cyhalothrine on Malaria Infection in Hajjar Valley, Yemen

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Background and purpose: Lambda-cyhalothrine 10% wettable powder (10% WP) was sprayed two times in Hajjar valley during last two years as indoor residual spray (IRS) in 63 high risk villages. Epidemiological surveillance and surveys for malaria were designed to evaluate the impact of the indoor residual spray.

Materials and methods: Data about incident cases were collected prospectively through passive case detection surveillance in two reporting sites in the valley since 2002 to 2004, data about prevalence of malaria infection were obtained through four community based surveys (two surveys before and two after the IRS campaigns).

The results indicated marked decline in incidence of malaria from 110 cases/1000 populations in 2002 to 41 and 14 cases /1000 in 2003 and 2004 respectively. Prevalence of malaria infection decreased from 20%, 27% in July and September 2003 (before IRS) to 3% and 2% in December 2003 and December 2004 respectively. More specifically age-specific parasite rate showed marked decline especially infant parasite rate from 14%, 30% in July, September 2003 respectively to 2.5% and 4% in December 2003, December 2004 respectively.

The indoor residual sprays succeeded in reduction about 70% of malaria incidence and more than 80% of the malaria prevalence in the area.

Conclusion: Maintaining the area in a low prevalence rate needs sustainable control measures after indoor residual spray take up; like insecticide treated bed nets.

Key Words: Insecticide. Malaria, Yemen

Progress Achieved In the Control of Malaria, Schistosoma and Lieshmania in Saudi Arabia

Suleiman M. Alseghayer

Saudi Arabia

Malaria Control programs have resulted in the interruption of the disease in the Eastern and Northern Provinces of Saudi Arabia since 1972. However, malaria transmission still continues in the south western parts of the kingdom especially in wet years as the case in 1998. The Incidence had dropped from 200/100,000 in 1998 to 4.68/ 100,000 in 2005. *P. Falciparum* being the dominant parasite and *An. Arabiensis* the main vector.

Surveys done in 1973 through 1977 indicated that both *Schistosoma mansoni* and *Schistosoma haematobium* were endemic in 12 Regions of the Kingdom and were transmitted by three species of snails namely *Bulinus beccari, B wrightii* (for *S. haematobium*) and *Biomaphalaria pfeifferi* (for *S.mansoni*). The MOH started control Program based on diagnosis and treatment of cases, health education and snail control. The prevalence had declined from 11 % in 1983 to 1.9% in 1987, then to very low levels of 0.04% in 2005.

Cases with cutaneous lieshmaniasis (C.L) are found, nearly in all regions while V. lieshmaniasis (V.L.) is found in the Southern parts of the country with sporadic cases in the western region. *P. papatasi* is the vector of C.L while *P. seraenti* is the vector of V.L and *L. tropica.*

Genetic Influences on Schistosome Susceptibility / Resistance within the Egyptian Intermediate Snail Host Species

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Aim: Schistosomiasis remains one of the most prevalent parasitic infections and has significant economic and public health consequences in many developing countries. Economical development and improvement standard of living in these countries are depending on the elimination of this execrable disease. For control of Schistosomiasis, understanding of the host/parasite association is important; since the host parasite relationship is often complex and questions remain concerning the susceptibility of snails to infection by respective trematodes and their specificity and suitability as hosts for continued parasitic development. So, the aim of this research is to learn more about the genetic basis of the snail/parasite relationship with the hope of finding novel ways to disrupt transmission of this disease

Methods: In the current research, genetic variations between susceptible and resistant strains within and between *B. glabrata* and *B. alexandrina* were investigated using RAPD-PCR.

Results: The results reported great genetic variations among either susceptible or resistant strains within the two snail species and also between both of them.

Conclusion: The results reported also that both *B. alexandrina* and *B. glabrata* have high efficiency as intermediate host for *S. mansoni* parasite. These species are important Schistosomiasis vector and play a potential role in transmission of *S. mansoni* in different regions in both Upper and Lower Egypt.

Key words: *Biomphalaria glabrata Biomphalaria alexandrina,* DNA, RAPD- PCR, Resistant, Susceptible,

Parasites and Choledocholithiasis

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Gall stone disease remains one of the most common medical problems leading to surgical intervention. It is important to remember that gallstones can lead to a variety of other complications including choledocholithiasis that occurs as a result of either the primary formation of stones in the common bile duct (CBD) or the passage of gallstones from the gallbladder through the cystic duct into the CBD. In many parts of the world, biliary parasites are an important factor. Biliary parasites cause necrosis, inflammation, fibrosis, strictures, and cholangiectasis of the bile ducts. Common biliary parasites include the nematode: *Ascaris lumbricoides*, the trematodes: *Opisthorchis viverrini* and *felineus, Clonorchis sinensis, and Fasciola hepatica and gigantica*, and the cestodes: *Echinococcus granulosus* and *multilocularis*. Generally speaking, in cases of choledocholithiasis and extra hepatic jaundice, biliary tree parasitosis must be considered in the differential diagnosis. The management of biliary parasites begins with conservative measures, including analgesics and anti-helminthic therapy. In refractory cases or patients with acute cholangitis, endoscopic biliary drainage and the extraction of worms may be necessary.

Evaluation of the Trend of Cancer Bladder as a Complication of Urinary Schistosomiasis among the Different Egyptian Governorates

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Aim: An epidemiological study was carried out to investigate the trend of urinary schistosomiasis as well as bladder cancer among the different Egyptian governorates during the last 10 years (1995-2005).

Methodology: The relationship between urinary schistosomiasis and cancer bladder was investigated using data collected from the patient's registers from Populations hospitals in the period between 1995 and 2005 from the different Egyptian governorate. Histological reports confirmed the registered diagnosis. The relative frequency of bilharzial cancer bladder of each governorate through the last 10 years was calculated. The effect of gender was also studied.

Results: The relative frequency was significantly different between the different Egyptian governorates according to the geographic distribution. Gender difference plays an important role in the distribution of urinary schistosomiasis and cancer bladder. Spearman`s rank correlation coefficiency revealed that schistosomiasis decreased with time in some Governorate, increased in others and not changed in some. Bladder cancer was also inversely related to time in almost all the governorates.

Conclusion: Gender and geographic distribution are significantly affecting the trend of distribution of urinary schistosomiasis and bilharzial cancer bladder.

Preliminary Investigation of Parasitic Helminths in Makkah Al-Mukarramah Vegetable Markets

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Objective: Among fresh food-borne diseases, infections with parasitic helminths are of significant concern for public health. We carried out a parasitological survey on commonly consumed fresh leafy and root vegetables in Makkah city.
Material and Methods: Ninety six raw and 184 washed samples including lettuce, radish, rocket, turnip, cabbage, green onion and parsley, collected from whole markets and green groceries, were examined.
Results: Seven species of parasitic helminths with medical importance were detected in the respective rates among examined samples: *Strongyloides stercoralis* (35.36%), hookworm parasites (32.14%), *Ascaris lumbricoides* (14.29%), *Trichostrongylus sp.* (14.21%), *Taenia sp.* (1.79%), *Trichuris trichiura* (0.71%) and *Hymenolepis nana* (0.71%). Contamination rates were particularly high in leafy produces such as parsley (75%) and rocket (65%) and among raw produces than washed ones (69.79% *versus* 41.85%). Generally, higher loads of parasites were seen on raw vegetables, especially for *Strongyloides sp.* and Hookworm larvae (82.5% and 57.73% in raw vegetables *vs* 55.91% and 37.5% in washed ones, respectively).
Conclusion: These results indicate that fresh produces commercialized in our region are heavily contaminated by parasitic helminthes, which reflects the unconscious practices in irrigation and fertilization of crops by contaminated waters and biological manures. Improving environmental sanitation and hygiene standards between food handlers is imperative for parasites transmission control.

Key Words: Parasites, Helminths, Markets, Vegetables, Makkah.

Rapd-PCR for Molecular Identification of the Intermediate Hosts of *Schistosoma Mansoni*

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Aim: Studies based on shell or reproductive organ morphology and genetic considerations suggest extensive intraspecific variation in *Biomhalaria* snails. The high variability at the morphological and genetic levels, as well as small size of specimens and similarities between species complicate the correct identification of these snails. The fact that the South American species *Biomphalaria glabrata*, which is highly susceptible to *S. mansoni* and much used for laboratory work, has been reported to occur in the Nile Delta in Egypt, has highlighted the need to develop new methods for differentiation between species.
Method: Several molecular techniques have been used in studies on the identification, genetic structure as well as phylogenetic relationships between these groups of organisms. In our study we used the method based on polymerase chain reaction (PCR) amplification using random primers for analysis of genetic variation and differentiation between *B. glabrata* and *B. alexandrina* snails.
Results: In the present study randomly amplified polymorphic DNA (RAPD-PCR) analysis was utilized to differentiate between *B. glabrata* and *B. alexandrina* within our laboratory stocks.
Conclusion: In the present study primer OPA-18 successfully differentiated *B. glabrata* from *B. alexandrina* and provided evidence of hybrid originated under our laboratory condition. These results confirm that hybridization may be occurring between *B. alexandrina* and *B. glabrata* in the field.
Key words: *Biomphalaria glabrata Biomphalaria alexandrina,* Hybrid, Genetic variability, DNA, RAPD-PCR.

Schistosoma mansoni: the Prophylactic and Curative Effects of Propolis in Experimentally Infected Mice

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Objectives: This study was conducted to evaluate the effect of propolis, a natural bee product, on lung and liver schistosomules as well as the adult worms of *Schistosoma mansoni* in immunosuppressed mice.

Material and Methods: All groups infected by 100±10 *S. mansoni* cercariae/mouse injected subcutaneous and induced immunosuppression by hydrocortisone hemisuccinate in a dose of 25 mg/kg body weight i.m. twice weekly for 8 weeks, starting 10 days before infection excluding the infected control group (1st group). Propolis was administered orally in a dose of 250 mg/kg/day, starting 5 days before infection and continued till up to 45 days post-infection, to cover all stages of *S. mansoni* infection (3rd group. Praziquantel (PZQ) was administered in an oral dose 500 mg/kg/day, on 2 successive days and started on the 5th and 45th day post-infection.

Results: In the immunosuppressed mice the percentages of reduction of the number of lung schistosomules showed a significant reduction of 59.22% in propolis and 98.89% in PZQ drugs. The administration of propolis caused a marked reduction of egg count in stool and tissues of liver and intestine [(61.77%) and (49.89% & 45.75%)] respectively. The effect of propolis on the number of adult worm burden showed significant reduction by 58.38%. PZQ administration reduced the percentages of adult worm in ova/gm stool and ova/gm tissue (liver & intestine) by 83.65%, 98.38%, 91.99% and 89.22% respectively. In addition, the drug efficacy appears in Oogram pattern in percentages of dead, mature and immature ova in small intestine. Conclusion: the study revealed that propolis demonstrated a remarkable effect against the early immature lung and adult stages of *S. mansoni* in the immunosuppressed infected mice. So we recommend that combination of propolis and Praziquantel can be used for treatment of schistosomiasis.

Bait Formulation for Control of the Intermediate Host of Schistosomiaisis

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Aim: Evaluation of the current methods of snail control indicated a need for new measures since many failures in control programs by molluscicides are due to lack of contact between molluscicdes and the target snail population. In schistosomiasis, the freshwater snails play an important role in transmission disease. The idea of attaining a more effective control program has not yet established, because of the limited knowledge of behaviour, physiological and biochemical characteristics of the parasite and its molluscan hosts (freshwater snails). It is therefore useful to study the behavioral responses of most common Egyptian freshwater snails *Biomphalaria alexandrina* towards different synthetic and natural compounds.

Method: The present study was undertaken to screen a variety of sugars, amino acids, successive extracts of some plants and total organic matter (TOM) by bioassay methods.

Results: The obtained results indicated that both mushroom (1%) and starch (2%) were generally more effective as attractant materials than other tested compounds (sugars, amino acids and TOM). It is also pointed out that the snails showed more deliberate motility towards the mushroom, so, it is considered the most powerful attractant material as well as a preferable food for *B. alexandrina* snails.

Conclusion: The obtained data revealed also that bait formulated molluscicides (Bayluscide and saponins of *Dodonaea Viscosa*) could be used for snail control. On the other hand, the enzymatic activity of pyruvate kinase, lactate dehydrogenase and glucose-6-phosphatase were examined in tissue homogenates of *B. alexandrina* treated with different concentrations of bait formulated Bayluscide in a trial to induce a metabolic disturbance in the snails. The present bait formulation is suggested as a selective candidate molluscicide.

Key words: Bait formulation, snail, schistosomiasis, chemical control, molluscicides.

Thursday November 9th 2006

Plenary Lectures

مكافحة أنفلونزا الطيور في مصر

د. نصر السيد

وزارة الصحة – مصر

بدء الإبلاغ عن وجود حالات ايجابية لمرض أنفلونزا الطيور مساء يوم الخميس الموافق ٢٠٠٦/٢/١٦ الساعة ١١,٤٥ مساءا بوجود سبع مواقع بها إصابات مؤكدة لمحافظات (القاهرة ــ الجيزة ــ المنيا)، ثم توالى ظهور مواقع ايجابية أخرى بعدة محافظات للوجه البحري والقبلي بلغت حتى الآن ٢٠ محافظة، ١٠٧ إدارة، ٦٥٦ بؤرة، ٨٥٨ مزرعة، ١٤٦ عشه منزلية، كما أصيب ١٤ حالة مؤكدة بين البشر توفي منهم ستة حالات.

وقد قامت الحكومة المصرية بالتعامل مع هذه المشكلة بشفافية كاملة منذ بدايتها، كما كان هناك تعاون كامل بين الوزارات المعنية (الصحة والسكان، الزراعة، البيئة، الداخلية، الخارجية، النقل، الإعلام، والدفاع)، كما اتبعت مصر الإرشادات الدولية المتعلقة بوبائيات المرض، بالتنسيق الكامل مع منظمة الصحة العالمية، منظمة صحة الحيوان الدولية، ومنظمة الغذاء الدولية، وباقي الهيئات الدولية العالمة في هذا المجال.

وقامت مصر بوضع تعريف للحالة يسمح بالاكتشاف المبكر بحالات الإصابة في الإنسان، إضافة إلي توفير الرعاية العلاجية الجيدة، كما اهتمت وزارة الصحة بتوفير مخزون إستراتيجي للعقاقير المضادة لفيروس الأنفلونزا (تامي فلو)، حيث تم حتى الآن توفير ٣٥٠,٠٠٠ جرعة تستكمل إلي ١,٢٠٠,٠٠٠ جرعة خلال شهر ديسمبر القادم، ثم إلي ٢,٤٠٠,٠٠٠ جرعة خلال شهر مارس ٢٠٠٧ لاستخدامها في علاج الحالات وللوقاية من جائحة الأنفلونزا، كما تم توفير أدوات الوقاية الشخصية للعاملين في أنشطة مكافحة الوباء.

وقد تم تدريب٢٧ فريق للاستجابة السريعة قبل ظهور الوباء في مصر يتكون كل منها من ١٥ عضوا من الوزارات المعنية (الصحة، الزراعة، البيئة، ... إلخ)، كما قامت وزارة الصحة ضمن برنامج وقاية العاملين في كافة الجهات المعنية (وزارة الصحة – وزارة الزراعة – الخدمات البيطرية – وزارة البيئة – وزارة الداخلية – عمال النظافة بمجالس المدن) بتدريب ٩٣٥٣ شخص على التخلص الآمن من الطيور المصابة وعمليات التطهير اللازمة وقد شمل التدريب ١٧ محافظة منذ شهر مارس وحتى الآن، كما تم تدريب ما يزيد علي ٨٠ طبيب وفني معمل قبل ظهور الوباء علي أعمال الجمع والنقل الآمن للعينات المعملية البشرية ومن الطيور من جميع المحافظات إلي المعامل

المركزية بوزارة الصحة والسكان، كما تم تدريب العاملين في الحقل الصحي على أعمال مكافحة العدوى داخل المنشئات الصحية.

وفيما يخص الترصد الوبائي للمرض بين المواطنين فقد قامت وزارة الصحة بفحص حوالي ٥٠٠٠ شخص من المخالطين للطيور المصابة ضمن الترصد الروتيني للمرض، كما تم استحداث الترصد الإيجابي حيث قامت مستشفيات الحميات والصدر على مستوى الجمهورية باستقبال عدد ١٧٢٩ حالة مشتبهة لأنفلونزا الطيور وتم أخذ عينات منهم وفحصها وكانت الحالات البشرية المصابة لمرض أنفلونزا الطيور حتى الآن ١٤ حالة كان منهم ٤ رجال و١٠ إناث منهم ٢ فقط عمال بمزارع و١٢ حالة الأخرى لهم علاقة بالطيور المنزلية – توفى ٦ حالات منها، كما تم البدء في أواخر شهر ابريل بعمل ترصد ايجابي للاكتشاف المبكر للمرض بين الطيور حيث تم فحص عدد ١٦٠٥٦ عينة من الطيور في ٢٣ محافظة في عدد ١٠٣٧ قرية حيث تم اكتشاف مبكر لعدد ٢٤ موقع ايجابي أخذت من طيور منزلية.

تم إعداد تنويهات تليفزيونية ومراجعتها قبل ظهور المرض وتم إذاعتها فور اكتشاف المرض يوم ٢٠٠٦/٢/١٧ كما تم عقد العديد من الندوات للتوعية للمواطنين وكذلك توزيع العديد من المطويات والمطبوعات، كما قامت الهيئة العامة للاستعلامات بإصدار بيان يومي عن الوضع الوبائي للمرض والتنسيق مع كافة الأجهزة الإعلامية للإبلاغ الفوري عن أي حالات إصابة في الطيور أو الإنسان.

وأخيرا فقد قامت وزارة الزراعة بمراجعة جميع المزارع المصابة مع تطبيق توصيات التطهير بها، حيث لن يسمح للمزارع باستعادة نشاطها إلا بعد تطبيق أنظمة الآمان الحيوي بها.

Endemic Eye Diseases in Developing Countries The coming Epidemic

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Approximately 40 million people in the world are blind and another 100 million have substantial visual impairment. The principal causes of blindness and visual disability are quite distinct in developed as compared with developing countries, and where they overlap in name. Other important causes include leprosy, corneal scarring from infection and trauma. In the most affected countries of Africa and Asia, the prevalence of blindness may be as high as 1.5 percent, with an additional 5 percent of the population visually disabled. In regions where trachoma and onchocerciasis are hyperendemic, the rates may be higher still. Vision loss is chronic and almost invariably without remission. The extent of morbidity is related to the level of alteration of vision function. The major causes of adult-onset blindness are cataract (47.8 percent), glaucoma (12.3 percent), macular degeneration (8.7 percent), diabetic retinopathy (4.8 percent), trachoma (3.6 percent) and onchocerciasis (0.8 percent). Uncorrected refractive errors are also a major cause of morbidity related to vision. The major causes of childhood vision loss have marked regional variations. They include vitamin A deficiency (xerophthalmia) and ophthalmia neonatorum in low-income countries, retinopathy of prematurity and hereditary conditions in middle-income countries, and congenital cataract and glaucoma everywhere. However, 80 percent of cases are avoidable, either through treatment (cataract and refractive errors) or through primary prevention (onchocerciasis, trachoma, glaucoma, and diabetic retinopathy). The risk factors for loss of vision are age, gender, poverty, and poor access to health care. The overall prevalence of vision loss, which mainly affects the population above age 40, is a function of age. The burden of visual impairment is not distributed uniformly throughout the world; the least developed regions carry the

largest share, as shown by World Bank region in Local and in-country variations, as well as regional variations, are related to the following factors: Epidemiology of cause, Socioeconomic pattern is an essential element in most causes and access to adequate eye care results from such factors as distance, affordability, and culture. Lack of resources is only part of the problem; existing facilities are sometimes underused.
Keywords: *Cataract, glaucoma, macular degeneration, diabetic retinopathy, Onchoceriasis.*

Importance of Establishing Research Ethics Committees (RECs) in the Arab World

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Medical Ethics are based on moral, religious and philosophical ideals and principles of the society in which they are practiced. Both Egyptian and Babylonian societies issued rules and sanctions to control the activities of doctors and surgeons (The American College of Physicians, 1989). Research investigators in the Arab World should be aware of the ethical, legal and regulatory requirements.

Issues that will be discuss:

1: What are the challenges, dilemmas and difficulties In the Arab World 2-Distinction between Medical Care and Clinical Research

3- What Makes Clinical Research Ethical?"

4-Guidelines for Research Ethics

5-What about Research Ethics Committee (REC)?

Impact of Endemic Diseases and Public Health

Evaluation of Aluminum Calcium Phosphate (AlCaP) bone substitute with and without Sugar Mediated Chitosan Membrane SMCsM)

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The present study was conducted to evaluate endosseous dental implants for single tooth replacement in areas of localized marginal defects of alveolar ridge .Implants were surrounded by Aluminum Calcium Phosphate (AlCaP) bone graft with and without Sugar Mediated Chitosan guided bone regeneration membrane (SMCsM) manufactured at NRC. Factors affecting implant success either host factors or systemic ones will be reviewed A special emphasis on diabetic patients who possess complicating factors when placing implants such as delayed wound healing, increased alveolar bone loss increased periodontal diseases and increased inflammation and tissue destruction will be raised. The classification of bone grafts will be reviewed. The study included 10 patients from out-clinic patients of Faculty of dentistry .Alex University between 20 to 50 years old having one missing single rooted tooth with localized marginal defects of the alveolar ridges. Patients were divided into two groups, one received dental TUT implant surrounded by AlCaP bone substitute and the other group with aluminum calcium phosphate (AlCaP) bone graft with sugar mediated chitosan guided bone regeneration membrane (SMCsM). Post prosthetic follow up was conducted after nine and twelve months through standard periapical radiographs. Computer program image J was used to analyze radiographs. Both groups did not show any degree of mobility. Radiographic evaluation revealed no statistical significant difference in the amount of vertical borne loss around implants of both groups at nine and twelve months. Within each group there was statistically significant difference increase in the mean bone density for the group with (SMCsM) and Alcap compared to the other group containing AlCaP alone. Therefore, it was recommended to use aluminum calcium phosphate (AlCaP) bone graft with sugar mediated chitosan guided bone regeneration membrane (SMCsM) especially in cases of relatively larger bone loss.

Factors Affecting Knee Pain and Mobility Limitation in Older Women with Osteoarthritis

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Background: Knee osteoarthritis (OA) is a major cause of disability, particularly in the elderly women. The factors determining disability remain unclear.

Objectives: The aim of this study was to find the risk factors and determinants of mobility limitation in old women with symptomatic knee OA in relation to clinical, social and knee performance measurements and to identify predictors of disability among them.

Patients and methods: Sixty old adults women aged above 45 years, with a clinical diagnosis of symptomatic OA were included in the study. The patients were selected from the out patient clinic of the rheumatology and rehabilitation unit, Kasr El Aini hospital and the geriatric centers in Cairo and Giza - Egypt. Patients were subjected to filling questionnaire, clinical, Anthropometric (body mass index (BMI), and Radiological Examination. Disability was measured by the western Ontario and McMaster universities (WOMAC) OA index. Pain was measured by the visual analogue scale pain, while depression and anxiety by the hospital anxiety and depression scale (HADS).

Results: There were positive significant correlation with the WOMAC score and the age of the studied women (r=.35), BMI (r=.42) and HADS (r= .34). A significant negative correlation was found with years of education (r= -.28). A high significant mean of WOMAC score was found with the presence of each of bony swelling, soft tissue swelling, pain and limitation of knee on passive range of motion and instability. There was significant positive correlation of WOMAC score with increased duration of usual walking speed (r= .28) and time to rise five times from a chair (r= .20) .The most important predicable

variables for disability were BMI, pain and HADS which fortunately are potentially treatable factors
Conclusions: Disability is a major consequence of lower limb OA in the present study with potentially treatable predictor factors. One of the good predictors for disability was quadriceps muscle strength that interventions of cases with knee OA should consider strengthening quadriceps exercise program as important line of treatment.
Key words: risk factors - Knee osteoarthritis - mobility limitation - Knee pain

Obesity in Primary School Children Living In Cairo and the Correlation to Serum Leptin

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Introduction: Obesity is increasing at alarming rate throughout the world. It's associated with large number of debilitating and life threatening disorders. Body Mass Index (BMI) above 85th percentile is defined as overweight while those above 95th are obese.

Objectives: To determine obesity prevalence of primary school children living at Cairo and to evaluate correlation between obesity and serum leptin.

Subjects and Methods: Cross- sectional study was designed to determine obesity prevalence. Sample size was calculated with confidence level of 99.99. One primary school was randomly selected, 533 children with mean age of 8.38 ± 1.45 yrs were selected representing all grades. Only healthy children were weighed and measured for height. BMI was calculated and plotted against standard curves. Thirty two obese children and 17 age and sex matched control group were selected to assess the role of serum leptin in obesity. Blood was collected and serum leptin was assayed under standard conditions.

Results: Overweight and obesity among males were 10.2% and 13.6% respectively; those of females were 9.5% and 11.1% respectively. The overall prevalence was 9.9% and 12.4% respectively. There was no difference between males and females ($p>0.05$). Serum leptin was significantly higher among obese compared to controls ($p<0.001$). There was positive significant correlation between serum leptin and each of age ($p<0.001$, $r = 0.68$), weight ($p<0.001$, $r = 0.95$), height ($p<0.001$, $r = 0.75$) and BMI ($p<0.001$, $r = 0.94$). Stepwise multiple regression analysis proved that BMI was relatively more important in prediction of leptin level. The results are discussed.

Bone Density and Osteoporosis in Egyptians

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Background and Objective: Osteoporosis is a metabolic bone disease characterized by micro-architectural deterioration of bone tissue leading to reduction of bone mass and increasing bone fragility and susceptibility to fracture. Adequate nutrients as well as some ingested material, not categorized as nutrients, are essential for bone metabolism to achieve maximal compatibility of hard tissue and prevent osteoporosis later in life. The aim of study is to assess bone density of the sample as a nucleus to establish reference data for Egyptians and to study its association with some anthropometric measurements. The study aimed also to investigate some of the influencing factors that affect bone density.

Subjects and Methods: the sample consists of 281 participants (187 females and 94 males) with age ranged from 20 to 70 years. All participants were apparently free from any chronic diseases that affect bone mineral density. The methodology is included a questionnaire for social and demographic factors; a medical and dental examination to assess the general health condition; anthropometric measurements to assess body physique and nutritional status and to correlate these measurements to the bone density; lead, aluminum and zinc blood concentrations were measured for subsample. Dual energy X-ray absorptiometry to estimate the bone density at three sites.

Results: Body weight and body mass index were found to be more correlated to bone density than height. Varying sexual dimorphism was found. No significant correlation was found between bone density and any of the rare elements studied. The results also showed that when evaluated by non Egyptian standards, the prevalence of osteopenia and osteoporosis is according the examinatin sites.

Conclusion: The necessity for Egyptian reference is recommended for results evaluation.

Key wards: Human- Bone – Density- Age- Gender

Communicable Diseases Prevention and Control Programs: Needs Assessment for Best Practice

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Community Medicine Departments in Cairo University*and National Research Centre**

Background: Evidence showed that Egypt possesses risk determinants that play a crucial role in the persistence of communicable diseases.

Aim of the study: The present study is a health system research study that aims at identifying the challenges to best practice for prevention and control of group A communicable diseases which includes 15 diseases, according to MOHP surveillance system) at the education (Faculty of Medicine), and health system level (MOHP). It focuses on situation analysis for the policies and strategies related to prevention and control of communicable diseases in Egypt.

Subjects and methods: Study tools included a structured questionnaire designed to interview physicians and sanitarians working in the District Surveillance Units in Giza and Cairo governorates about prevention and control measures of communicable diseases under the study. In-depth interviews with professors at the Community Medicine Department in faculty of Medicine, Cairo University as well as staff of MOHP-Head Quarters. Content analysis for the community medicine book, MOHP guidelines and WHO publications was also performed.

Results: The main results of the in-depth interviews with community medicine department staff, addressed the institutional strengths within the medical schools in terms of enough staff and space and accessibility to field visits. The weaknesses within the medical education are related to overlap/repetition of the same information. The practical training is not sufficient with shortage in facilities for transportation of students to the field visits. The results of in-depth interviews with the staff of MOHP-HQ indicate the presence of political and institutional support for prevention and control of communicable diseases' programs. The

surveillance unit (ESU) suffers many shortcomings. Opportunities are great for MOHP due to favourable chance to work with international organizations. Challenges are related to the inadequate response of the private sector, non governmental organizations (NGOs) and the community to communicable diseases' prevention and control programs. The retained knowledge and skills of MOHP-CDC (including ESU) staff at the district level in prevention and control of communicable diseases are influenced to a great extent by the specific political support directed to some diseases (e.g. poliomyelitis) compared to other diseases which are not occupying a priority position in the policy makers' agenda. Additionally, some incorrect knowledge about national standard guidelines for prevention and control of communicable diseases with knowledge gaps between physicians and sanitarians were obvious.

Recommendation: The study recommends regular revision and updating of community medicine curricula regarding prevention and control of communicable diseases and developing National Committee for continuous reviewing and updating of the guidelines for prevention and control of communicable diseases in MOHP. It also recommends periodic evaluation of the performance of MOHP-CDC (including ESU) staff at the district level.

Key Words: Communicable Diseases – medical education-health system-capacity building-surveillance.

Lens Protein Changes Induced By Acute Exposure to Moderate and Strong Magnetic Fields

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Background: The natural levels of magnetic field have increased by the increase of magnetic field applications. Industrialization of societies has resulted in the exposure of people to static magnetic field induced by electric currents. **Objectives:** The goal of the present work concerns with the potential biophysical and biological effects of static magnetic fields (MF) in the range of 0.5-1.5 Tesla on the eye lens of the albino rats , which was employed as a sensitive model for investigation of such interactions after exposure of whole body in four consecutive sessions (one hour per day). **Results:** The results indicated that, exposure of the animals to the moderate and strong static magnetic fields resulted in increase in the soluble lens protein concentration accompanied with increase in its refractive index protein. In addition, there were changes in the molecular structure of lens crystallin demonstrated by column chromatography and UV spectroscopy. Moreover, the change in Na^+, K^+ and Ca^{++} concentration were also investigated. **Conclusion:** It was concluded that, exposure to moderate and strong static magnetic fields are biologically toxic to lens crystallin causing damaging effect and occupational exposure to these fields should be avoided.

Natural Products and Endemic Diseases

Triterpenes and Favonoids from *Genista tricuspidata* L.

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In continuation of our studies on Algerian medicinal plants, we investigated the hydro ethanolic extract of the aerial part of *Genista tricuspidata* an endemic species of the Fabaceae family [1]. The present chemical investigation led to the isolation of five known compounds: two triterpenes: erythrodiol - 3β palmitate **1** [2-4] and erythrodiol **2** [5-9]; a diterpene : phytol **3** [10-11] and two flavonoids: 7- methoxy, hydroxyl- 4'- flavane **4** [12-13] and quercetrin **5** [14] from the chloroform soluble part of the extract, and eight known flavonoids: three isoflavones: genistein **6** [15-16], sophoricoside **7** [17] and isoprunetin **8** [15-18] and four substituted flavonols : quercetrin **5** , 4', 5,7-trihydroxy-3',8-dimethoxy-3-O- glucosyl flavone **9** [19-20] , isorhamnetin – 3-glucoside **10** [21-22] and 3',4',5,7-tetrahydroxy-rhamnosylflavone **11** [23-24] from the butanolic soluble part. All these structures were established through 1D 1H and 13C experiment and 2D NMR including COSY-45, ROESY, NOESY, HMQC and HMBC spectra. These compounds were not reported before from this plant.

Key words: medicinal plants, triterpenoids, flavonoids, isoflavones, Fabaceae, *Genista tricuspidata*

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Discovery of Skin Lightening Agents from Traditional Medicine

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Plants represent an unlimited source of natural products. People have been using plants and their products against skin diseases for centuries. Scientists are investigating the effect of different plant extracts (oat, walnuts, chamomile, carrot, almonds, cucumber, lavender, mint, rose and sweet violet petals) on skin for the treatment of hyperpigmentation disorders and for cosmetic purposes as well. Among various plant extracts investigated for their effects on anti-tyrosine and anti-DOPA activity, it has been showed earlier that extracts of *Morus alba, Glycyrrhiza glabra, Entada africana, Portulaca pilosa, Prosopis Africana* and *Cariniana brasiliensis* showed anti-tyrosine activity.

Our recent studies on traditional medicine used in folk medicine for treatment of skin hyperpigmentation (e.g. *Trigonella foenum-graecum* L., *Ceratonia siliqua, Lupinus termis*, Salbus, …etc) showed that some of the plant extracts are effective as tyrosinase inhibitors, which support the traditional uses and could be a new safe candidate for cosmetic industries.

Phytochemical and Antioxidant Activity of *Spathodea campanulata P.* Beauvois Growing in Egypt

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Aim: No phytochemical or biological investigation was done on *spathodea campanulata* growing in Egypt. So, the present work deals with the phytochemical investigation of the aerial parts (leaves & terminal branches) of the plant and their antioxidant activities as a guide for further biological activities.

Methods: Defatted dried aerial parts of *spathodea campanulata* was extracted in a soxhelt apparatus with 80% methanol. The concentrated alcoholic extract was subjected to chromatographic fractionation on celite column. Elution was affected using different solvents: n-hexane, n-hexane – $CHCl_3$ (1 / 1), $CHCl_3$, CHCl3 – EtOAc (1 / 1) = (fraction A), EtOAc, EtOAc – MeOH (1 / 1) = (fraction B), and MeOH. (fraction A) was fractionated by ppc using butanol :acetic acid :water (4/1/5v/v). Fraction B was subjected for further fractionation using silica gel column eluted with chloroform and increasing polarity with methanol.

Results: Alcoholic extract of *spathodea campanulata.* aerial parts, and two of the isolated fractions from celite column showed strong anti -oxidant activity (92, 94 & 89% RSA, Radical Scavenging Activity). Phytochemical investigation of fraction A of the total alcoholic extract led to the isolation of phenolic acids, caffiec(**1**), and ferulic (**2**) , fraction B on further fractionation afforded 3 flavonoids, kampferol 3-0-glucoside(**3**), quercetin 3-0-methyl ether (**4**) and 8-methoxy kampferol -3-O-glucoside(**5**).The isolated constituents were identified by co chromatography with authentic samples, TLC, PC., and UV, MS and ^{1}H-NMR spectral analysis.

Also the lipoidal matter of the plant was studied .The unsaponifiable matter was found to be mixture of hydrocarbons from (C_{14}-C_{28}), cholesterol, campasterol, stigmasterol, and α-amyrin. Fatty acid methyl esters were found by GC to contain 12 fatty acids. The fatty acids containing C_{18} formed ca. 65% of the total mixture.

Conclusion: The alcoholic extract of *Spathodea campanulata* can be used as source of natural anti-oxidant.

Keywords: *Spathodea campanulata*, Bigononiaceae, Phenolic acids, Flavonoids, Antioxidants.

Antioxidative and Hepatoprotective Properties of Extracts of Certain Plants of Family *Lamiaceae* against CCl_4 Induced Cytotoxicity in Primary-Cultured Hepatocytes

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Background: *Origanum syriacum* (L.), *Thymus decussatus (Benth.)*, *Salvia multicaulis (Vahl.)*, herbs of family *Lamiaceae* have been selected for the determination of their antioxidative and hepatoprotective properties.
Methods: Antioxidant activity based on the rapid 1, 1-diphenyl-2-picryl hydrazyl radical (DPPH) tests has been applied to classify the scavenging activity of their phenolic extracts. Conditions have been investigated to devise an in-vitro colorimetric MTT assay method for their antihepatotoxic, and hepatoprotective activity against CCl_4 induced injury in primary-cultured rat liver cells.
Results and Conclusion: The results presented demonstrate that the ethyl acetate soluble fraction of *O. syriacum. T. decussatus*, and *S. multicaulis* show a pronounced antioxidative and hepatoprotective potentials, which are of considerable interest with respect to the therapeutic application of these phytopharmacon.

Key words: Antioxidants, Origanum syriacum, DPPH Free Radical, MTT assay

Sesquiterpene Lactones and Other Constituents from *Matricaria chamomilla* and Their Effects on Human HL-60 Myeloid Cells Viability

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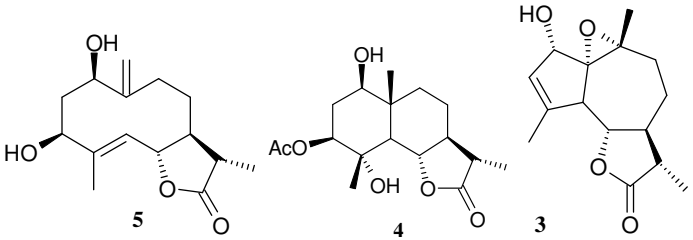
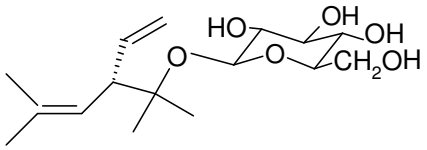
The genus *Matricaria* (Asteraceae, tribe anthemideae), is used as a valuable ingredient of many galenic preparations [1]. In the present work, we investigated *Matricaria chamomilla* L. which was collected from Oued Tonga near El-Kala in the eastern Algeria in June 2000. After separation and purification by successive chromatographic methods we isolated a new sesquiterpene lactone, matricolone **4**, and a new acyclic monoterpene glucoside, chamolol **6**, together with four known compounds from the chloroform soluble part of the aqueous methanol extract of the aerial parts of this plant.

The structures of the known compounds were identified as stigmasterol **1** [2]**,** ethyl caffeate **2** [3], 2α-hydroxy-arborescin **3** [4] and dihydroridentin **5** [5]. The structure all the compounds were established by spectroscopic methods notably HRFABMS, ^{1}H NMR, ^{13}C NMR, 2D NMR experiments (COSY, HSQC, HMBC, ROESY).

The effect of compounds **3**-**6** on HL-60 cells viability and proliferation was studied using a wide range of concentrations (up to 100 μM). These compounds showed no cytotoxic effects up to 30 μM in the MTT assay.





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Key words: Sesquiterpene lactones, Monoterpene glucoside, Natural products, *Matricaria camomilla*, Asteraceae.

Anti-Hepatotoxic Effect of *Pterocephalus sanctus* Growing in Egypt

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The defatted powder of *Pterocephalus sanctus* was extracted by aqueous methanol (80%). The residue was chromatographed over silica gel and eluted with gradient petroleum ether/ethyl acetate. Eight fractions were collected, concentrated, weighed and subjected to bioassay-guided fractionation following their anti-hepatotoxic activity. Three compounds were identified as secologanin, loganin and swerosoid that possess highly anti-hepatotoxic activity using Primary Cultured Monolayer Hepatocytes test.

Key words: Dipsacaceae, *Pterocephalus sanctus*, secologanin, loganin, swerosid.

Phytochemical and Bioactivity Investigations of *Macfadyena unguis-cati* L. *(Bignoniaceae)*.

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Aim: The aim of this work is to give phytochemical investigation for successive extracts of *Macfadyena unguis-cati* and its volatile components. Also biological screening of these extracts reveals the uses of this plant in traditional medicine.

Objectives: *M.unguis-cati* is used in folk medicine to treat snakebite [1], dysentery, inflammation and rheumatism [2]. In its seed oil there is 80% palmitoleic acid (C_{16}) plus *cis* vaccenic acid (C_{18})[3]. Root extracts of *M.unguis-cati* were found to contain lapachol, quinovic acid ,3 (O-fucosyl) alcohol, β-amyrin and β-sitosterol [4]. Traces of cyanidin-3-glucoside were reported in flower extracts.

Results and discussion: GC/MS of the volatile components of the aerial part of *Macfadyena unguis-cati* L, Fam.*Bignoniaceae* revealed 74 compounds, 52 of them (representing 75.97%) were identified [5]. The major compound is n-decane (12.21%) followed by phytol (12.19%). The saponifiable fraction of the petroleum ether extract showed 21 fatty acid identified as methyl esters. 37 compounds were identified in the unsaponifiable fraction; representing 93.26%. β-amyrin, squalene, β-sitosterol and $3\alpha'$,5-cyclo-ergosta-7,22-dien-6-one were identified in the USM.Determination of LD_{50} of different extracts showed that total ethanol extract is the safest (4.9 g/kg) followed by petroleum ether extract, (4.5 g/kg) and ethyl acetate extract having the least LD_{50} (3.1 g/kg). The total ethanol extract was revealed to be the most potent as antipyretic, followed by ethyl

acetate extract. The ethanol extract, as well as the coumarin containing fraction exhibited significant analgesic activity.

Key words. *Macfadyena unguis*-cati L., *Bignoniaceae*, essential oil, unsaponifiable matter, fatty acids, analgesic activity, antipyretic activity, LD_{50}.

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Biochemical Aspects of Endemic Diseases

Effect of Portal Sera of Highly and Poorly Susceptible Hosts and the Schistosomal Antibody (Ies) On Cell Proliferation of *S. Mansoni* Schistosomules

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Schistosomules of Schistosoma *mansoni* (20 days old) were incubated in RPMI 1640 medium containing 10% fetal calf serum, 10% hamster portal venous or 10% hamster peripheral venous serum (highly susceptible host) or 10% rat portal venous or 10% rat peripheral venous serum (poorly susceptible host) in presence of bromodeoxyuridine (BrdU) in order to measure differences in cell proliferation. The rates of cell proliferation as expressed by BrdU labeling indices (BLIs) were determined as a function of time of incubation by immunohistochemistry using monoclonal antibody to BrdU. Compared to Schistosomules cultured in presence of RPMI plus 10% fetal calf serum, BLIs were increased by 41% in the presence of hamster portal, but not in peripheral serum. While in case of rat, no significant changes were observed in the BLIs in both portal and peripheral sera. The experiment was repeated using hamster portal and peripheral sera containing different schistosomal IgG antibody titres. The results showed decreased values of BLIs compared to sera which did not contain the schistosomal antibody (ies). The results indicated that hamster portal venous serum (highly susceptible host) could have stimulating factor(s) for schistosomule cell proliferation which is not found in rat (poorly susceptible host) and the presence of antibody (ies) greatly inhibit the cell proliferation. This could be due to the blocking of some portal serum factors, which stimulate the cell proliferation by the antibody (ies).

Evaluation of the Effect of Strophanthidin Glycoside from *Corchorus Olitorius* and *Corchorus Capsularis* Seeds against Daunorubicin-Induced Congestive Heart Failure

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Background and Purpose: Daunorubicin (DAU) is one of the most useful anticancer agents, but its repeated administration can induce irreversible cardiomyopathy as major complications. This study aimed to evaluate the effect of oral administration of cardiac glycosides compounds isolated from the seeds of *C. olitorius* (E1) and *C. capsularis* (E2) in alleviating congestive heart failure induced by (DAU) in guinea pigs and to compare the effective role of these cardiac glycosides with that obtained from the digitalis (digoxin) currently used in the treatment of such cases.

Materials and Methods: Seven groups of animals were used (7 animals each) as follows: Group (1) untreated control; Group (2) was injected intraperitoneally (i.p) with DAU (3 mg/kg b.wt.); Group (3) was orally treated with digoxin (0.1 mg/kg b.wt.) and after 30 minutes was followed by DAU (3 mg/kg b.wt, i.p.); Group (4) was orally treated with E1 with a dose level 4.8 µg/kg which equals to 10% of the obtained LD_{50}; Group (5) was orally treated with E2 with a dose level 4.8 µg/kg b.wt. which equals to 10%of LD_{50}; Groups (6) and (7) were orally treated with either E1 or E2 with dose level 4.8 µg/kg and after 30 minutes was followed by DAU(3 mg/kg b.wt. i.p.). All substances were administered once weekly for 10 weeks.

Results: DAU injection greatly affected heart markers where significant increase in CK-MB and BNP values were observed in addition to significant increase in cardiac Na^+, K^+-ATPase

activity. Also, adrenaline and corticosterone levels were significantly increased in plasma of DAU-injected animals. Furthermore, atherogenic markers in terms of total- and LDL-cholesterol were significantly elevated while HDL- cholesterol was insignificantly changed. The antioxidant defense system was also affected so that the level of cardiac total antioxidant capacity was diminished and the level of cardiac lipid peroxidation was significantly increased. The administration of either E1 or E2 (10% of LD_{50} = 4.8 µg/Kg b.w.) to DAU-injected animals produced pronounced potential role against the damaging impact of this drug on the heart. This appeared from the improvement of heart functions and atherogenic markers as well as the significant increase in cardiac total antioxidant capacity with concomitant decrease in cardiac lipid peroxidation level and Na^+, K^+-ATPase activity.

Conclusion: The present study clearly indicated that E1 and E2 at low dose attenuate the cardiac dysfunction induced by DAU in guinea pigs as an experimental model for congestive heart failure. It is worth-noting that E2 is more safe and useful in treatment of heart disorders than E1.

Keywords: *Corchorus olitorius* and *C. capsularis*, cardiac markers, ATPase, Daunorubicin, lipid peroxidation, atherogenic markers.

A Comparative Study of Pyruvate Kinase, Glucose-6-Phosphate Dehydrogenase and Lactate Dehydrogenase Activities in Children Living At Above and Below Sea Level Environments (Irbid, Amman and Jordan Valley)

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A comparative study was conducted to assess pyruvate kinase, glucose-6-phosphate dehydrogenase and lactate dehydrogenase activities in children of the Jordan Valley (340 meters below sea level) and those of a similar group of children residing in Irbid and Amman (620-850 meters above sea level). Two groups were assigned with an age ranging from 5 months to 10 years. Group A, which is composed of 350 subjects, were randomly selected from the Jordan Valley; group B, which is composed of 650 subjects from Irbid and Amman. Erythrocytes pyruvate kinase activity in group A was 7.5±3.2 units/g hemoglobin, which was lower than that in group B (15.3±32.9 units/g hemoglobin). Erythrocyte glucose-6-phosphate dehydrogenase activity in group A was also lower than that in group B (118.5±26 vs 123±21) mU/10^9. Besides the enzyme activities, tests for pyruvate kinase deficiency and glucose-6-phosphate dehydrogenase deficiency were conducted in the children of both group A and B. The data showed that out of the 350 subjects of group A tested for pyruvate kinase deficiency, no one was found to be positive (all have no deficiency). One the other hand, 1 child from group B was found to be positive for pyruvate kinase deficiency in 650 subjects. However, for screening purposes, these data are not conclusive, since one needs higher number of participants. Out of 350 subjects of group A tested for glucose-6-phosphate dehydrogenase deficiency, 34 subjects were found to be positive (10%), while out of 650 subjects from group B tested, 50 children were positive (8%). It is suggested here that there is a correlation between lower enzymes activities and the below sea level environment. Collectively, these data suggest that the basal low activities of pyruvate kinase, glucose-6-phosphate dehydrogenase and lactate dehydrogenase in people of the Jordan Valley in comparison with those activities in areas above seal level may be due to the environmental factors as well as genetic predisposition of the people of the below seal level areas of the Jordan Valley.

Reversal of Multidrug Resistance in Cancer

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Cancer is one of the world wide spread diseases. Two decades ago, 6 million new cases of cancer were diagnosed each year and 4 million deaths were reported annually due to the disease. Today these figures are 10 million and 6 million. It is predicted that if the current trends continue then by 2020 these figures are expected to reach 20 million and 10 million respectively. Most cancer deaths arise because the tumours have metastasized and/or have become resistance to chemotherapy. At present, available therapies cure a little more than half cancer patients. Surgery is considered the most efficient treatment, possibly because it is used to cure very small tumors, which are rarely accompanied by metastasis. Chemotherapy appears to be less efficient, possibly because it is used when metastases are already present, the tumor is large and spreading and, moreover, anticancer drug resistance is frequent. When patients with cancer are treated with a cytotoxic agent, the pharmacological goal is to deliver as much active drug as possible to the molecular target in the cancer cells; causing sufficient molecular damage to lead to cell death. On the other hand, the occurrence of drug resistance renders cells resistant not only to the drug used in the chemotherapy, but also to a broad spectrum of unrelated cytotoxic drugs as well. Chemotherapy against many types of common cancers often is ineffective because tumor cells possess cellular mechanisms that enable them to resist the effects of the cytotoxic agents. So clinical multidrug resistance (MDR) is a major barrier to overcome before chemotherapy can become curative for most patients presenting with cancer. In order to reviews number of strategies used to tackle drug resistance most efficiently, it is essential to establish the dominant mechanism of drug uptake and drug resistance.

Keywords: drug, resistance, cancer

Sickle Hemoglobin: Molecular, Path Physiological, Epidemiological And Drug Treatment Approaches

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Sickle cell anemia, one of the most common single-gene disorders worldwide, primarily affects people in Africa, the Mediterranean area, the Middle East, the Caribbean and the Indian subcontinent. More than 200 million people worldwide have an RBC enzyme abnormality. The most common types include hemoglobin SS (homozygous) disease, sickle cell-hemoglobin C disease, and the sickle β-thalassemia syndromes. Sickle cell anemia, a common disorder associated with reduced life span of the red blood cell is caused by a mutation in the β-hemoglobin gene. Patients often suffer from anemia, painful crises, infections, strokes, and cardiopulmonary complications. With this disorder oxidative, phenomena play a significant role in its pathophysiology. Even though this is a horrific disease, sickle cell patients can live normal lives due to new medication and treatments The main objectives of this presentation that will be followed by an article are fourfold: 1) to address at the molecular level the most important and common inherited red blood cell disorders in Middle Eastern patients, including glucose-6-phosphate dehydrogenase deficiency, the thalassemias, and sickle cell disorders, 2) to explain how Malaria has affected the human genome in high endemic parts of the world, and how this change enabled the human survival against malarial infection, and what human genetics can teach us about Malaria, 3) to assess the mode of action of drugs and new medications used for treatments of acute painful crises in children and adults. 4) to illustrate the role of natural and herbal medications that is effectively used to treat sickle cell patients.

Key words: Sickle hemoglobin, antisicklling agents, red blood cells, Herbal medications, Mg^{++} therapy, β- thalassemia, Human genome, recombinant DNA, hydroxyl urea, corticosterones, iron, vitamin E, peptides, hydrophobic amino acids, gallbladder disease, probes, Insulin, UV Resonance Raman Spectroscopy, Magnetic Resonance Spectroscopy, contact sites.

Clinical Usefulness of Biochemical Markers of Bone Turnover in Egyptian Children with Chronic Liver Diseases

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AIM: To clarify the association between serum levels of IGF-1, osteocalcin, and parathyroid hormone with the etiology and clinical condition of patients with chronic liver diseases.

METHODS: Eighty children with hepatocellular damage were divided into 3 groups according to the etiology of disease, bilharziasis (9 patients), HBV (12 patients) and HCV (29 patients) infections. The child score index was found as A(24),B(22), C(4). Thirty healthy subjects served as control group.HBsAg, HBcAbIgM, HBcAbIgG, and Anti-HCV were carries out using ELISA technique. HCN-RNA was measured by reverse transcription polymerase chain reaction (RT-PCR). Ant-bilharzias antibodies were done by indirect hem- agglutination test. Liver function tests were measured using autoanalyser. Serum levels of IGF-1 osteocalcin and PTH were measured by ELISA techniques. Abdominal ultrasonography was also done.

Results: Serum level of IGF-1 was significantly lower in all patient groups with liver diseases ,while serum levels of osteocalcin and PTH were significantly elevated in patients with HBV and HCV infections comparing with the control group. Serum concentrations of osteocalcin and PTH were associated with the severity of liver disease from child A to C. Child A patients unexpectedly showed significantly reduced IGF-1 levels in comparison to patients staged as child B or C. Serum level of osteocalcin was negatively correlated with albumin ($r= -0.409$, $p= 0.027$), while that for PTH was positively correlated with total protein ($r= 0.451$, $p= 0.014$) among group of patients with HCV infections.

Conclusion: Our findings showed that the low serum level of IGF-1 seems to play a critical role in the bone loss in these patients. The elevated biochemical markers of bone remodeling suggested high-turnover in patients with viral infection and reflects the severity of the clinical stage.

Key words: Liver disease, bone turnover, Biochemical markers

Pathology of Endemic Diseases and Associated Tumors

Construction of an Array Device and Its Use To Prepare High Density Tissue Microarray For Detection of Multiple Antibodies

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Background: Arrayers are instruments used to prepare a tissue microarray which allows the assessment of hundreds of tissue specimens on a single glass slide. Tissue microarrays are used for screening of antibodies circulating in the serum of man and animals formed after infection of various types of microorganisms or are found in cases of auto-immune diseases. Tissue microarrayers were extensively used for characterization of tumours, their progression and diagnosis. **Purpose:** The present work describes the manufacture of an arrayer. **Material and methods:** Modified simple student microscope. ***Results and conclusion:*** Using of our device the specimens were correctly alligned and were easy to be recognized and the area of tissue core in cut-section was sufficient to make diagnosis. The device can be adopted by small and mesium-sized laboratories and researchers with minimal financial investment.

Key words: Tissue microarrays - Arrayer - Antibody monitoring – Human and animal diseases.

DNA Ploidy and P53 Overexpression in Papilla of Vater in Cases with Obstructive Jaundice; A Clinicopathological Study

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Carcinoma of the papilla of Vater has a relatively good prognosis when compared with the case of other biliary tract neoplasm such as pancreatic carcinoma or bile duct carcinoma the adenoma–carcinoma development hypothesis is generally accepted for colorectal tumors. Recently, a genetic alteration model during colorectal tumor development has attracted much attention, leading to various studies. **Our aim** is to evaluate the clinicopathologic features, and the alteration of the p53 tumor suppressor gene using p53 immunohistochemical staining and the DNA ploidy of papilla of Vater epithelium in patients with obstructive jaundice. **Patients and methods:** The study included 70 patients had obstructive jaundice due to papillary lesions. The patient's papillary lesions were 40 adenocarcinoma, 10 cases pure adenoma of the papilla of Vater and 15 chronic papillitis as well as 5 patients had normal papilla as a control. We used imunohistochemistry technique to stain the tissue slides with p53 suppressor gene and Cell image analyzer to detect the DNA content of the epithelium through staining the tissue by felgin stain which stain the nuclei blue. **Results**: The patients were 34 to 76 years (mean age was [52.5 y]. There were 42 male and 28 female. The papillary lesions were benign in 30 cases and malignant in 40 cases. The papillary adenocarcinoma was well differentiated in 10 cases, moderately differentiated in 22 cases, and poorly differentiated in 8 cases. Positive staining for p53 protein was found only in the nuclei of tumor cells .Positive reaction for p53 were 0% on papillitis and in normal mucosal tissue , 20%(2/10) in adenomas , 50% (20/40) in adenocarcinoma. The percentage of p53 overexpression in the twenty cases of adenocarcinoma was 48% (7/15 for early carcinomas and 51.8% (13/25) for advanced carcinomas. The all cases of papillitis and adenoma

exhibit DNA diploid histogram, while 16/40 (40%) of adenocarcinoma cases exhibit diploid histogram and the rest of cases 60% (24/40) exhibit aneuploid histogram. There was increase in the number of cells at the proliferative S phase in the chronic papillitis, adenoma and adenocarcinoma compared to control cases $p<0.01$and $p<0.05$ respectively. In conclusion, the p53 immunohistochemical staining may be useful in the diagnosis of carcinoma of the ampulla of Vater if the submitted specimen contains adenomatous areas. It is most likely that the molecular events leading to p53 accumulation in neoplasms of the ampulla of Vater occurred relatively late during the oncogenetic process. The DNA ploidy can help in diagnosis and outcome of papillary neoplasm. Our results confirm that this group of tumors is heterogeneous and underline the need for earlier markers of an aggressive behavior.
Keywords: DNA content, P53 _expression, Papilla of vater

Apoptosis and DNA Changes In Hepatocytes after Selective Portal Vein Embolization; Controlled Experimental Study

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Introduction: Management of hepatic malignancy is one of the most controversial areas. Extensive hepatic resection is not a safe technique which does not allow complete resection of the liver tumor with preservation of liver parenchyma. Preoperative portal vein embolization (PVE), to induce compensatory hypertrophy in the predicted remnant liver, decreases the clinical complications after hepatectomy. **Aim:** The aim of this study is to evaluate the effect of selective portal vein embolization on hepatocytes both on embolized (E) and non embolized (NE) part of the liver. Methods: The study was done on 23 adult Shin Sheila rabbits weighing an average of 2.5 kg. with an average age of 6 months. Under general anesthesia, laparotomy along midline incision and embolization of the lateral right branch of the portal vein using Histoacryl was done. The animals divided into two groups: group A (early); 12 animals sacrificed in less than 30 days and group B (late); 11animals sacrificed between 30 to 60 days. Biopsies were taken from embolized (E) and non embolized (NE) lobes and examined histopathologically and by DNA image analysis: **Results:** Disturbance in hepatic lobular architecture was noticed histrologicaly. Hepatocytic degeneration was remarkable in (E) lobe due to interferance in its portal blood supply. This was more apparent in group A (early), while it was not noticeable in group B (late) due to occurrence of neovascularization and consequently improvement of its blood supply.

Hepatocytic regeneration was evident in (E) lobe in group B (Late). Heptocytic proliferation occurred in (NE) lobes. It was more evident in group A (early) in the (NE) lobes. This is explained by the redistribution of blood flow after embolization. Regeneration was marked in group B(late) in the (E) lobe due to occurrence of neo-vasculrization of embolized lobe and the development of capsular collateral circulation. Morphometeric DNA study showed increased cellular proliferation pool (S phase) in group A (early) in the (NE) lobes than the (E) lobe. The increase was more in the (E) lobe than the (NE) lobes in the group B(late). The number of cells in apoptosis was more in the (E) lobe of group A (early) than in the (NE) lobes. While in group B(late) the number of apoptotic cells was nearly the same in both (E) & (NE) lobes. Conclusion: PVE induce apoptotic changes in embolized lobe in the early stage this was re-compensated by increased cellular proliferation in late stage evident by increased in S phase fraction of DNA by image analysis study.

Evaluation of the Activity of Panax Ginseng C. A. Meyer in Diabetic Rats

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Aim: The present study was conducted to investigate the effects of Panax ginseng C. A. Meyer on diabetic albino rats.
Method: Thirty rats were used and divided into three groups; control, diabetic, and treated diabetic groups. This work includes biochemical and histopathological studies.
Results: The present study showed that diabetic groups revealed highly significant increases in blood glucose level as compared with the control group. On the other hand, treated diabetic groups revealed highly significant decreases in blood glucose level as compared with their controls. Blood insulin levels showed a highly significant decrease as compared with the control group, while the treated diabetic group showed a highly significant increase. Histopathologically, the liver of diabetic rats demonstrated dilated and congested veins in the portal tract, focal necrosis and periportal necrosis of the hepatocytes that surrounded the portal area. The livers of diabetic rat that treated with ginseng appear more or less as the control. The pancreas of diabetic rat showed shrunken of the exocrine pancreatic cells. Fatty changes characterized by vacuolation in the acinus cells were noticed and the endocrine pancreas revealed some degenerative changes. Also, interlobular hemorrhage was noticed. In the pancreas of diabetic rat which treated with ginseng, the islets of Langerhans appeared relatively larger than the control one. The exocrine pancreas appeared more or less as the control.
Conclusion: In conclusion, Panax ginseng C. A. Meyer is an effective anti-diabetic that can be used safely, within its allowed dosage, with diabetic subjects to lower the number and severity of complications of this disease.
Keywords: biochemical, histopathological, liver, pancreas, ginseng

Histopathological studies on Acute and Chronic Stages of *Toxoplasma gondii* in Murine Model

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Objective: The present work was aimed to study the histopathologicl changes in acute and chronic stages *T.gondii* in infected mice. **Material and Method:** The work was carried out on one hundred and fifteen albino mice. They were divided into ***3*** main groups: group A, infected intraperitoneally with ***3 x 10^3*** *T. gondii* RH strain tachyzoites for acute stage induction. Group B, infected peroraly with 3 ***x10^2*** sporulated *T. gondii* oocysts for chronic stage induction and **group C** which served as a control. **Results:** Histopathological study revealed significant differences between the two groups. In ***group A***., Inflammatory cellular infiltration could not be detected. In ***group B,*** normal mucosal pattern, dense inflammatory cellular infiltration, mitotic change in the basal crypts of the villi, with mild oedema and congested blood vessels were detected. Severe superficial sloughing with mild lymphocytic infiltration and frequent mitotic changes, severe oedema with congested blood vessels could be detected. So, we can be concluded that the histopathological effect of oocysts infected mice more vigorus than the effect of tachyzoites infection and tissue damage more obvious than in group two.

Endemic Liver Diseases: Hepatitis

Nightmare of Hepatitis C in Egypt When: Is It Going to End?

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Egypt has the highest prevalence of hepatitis C virus in the world 15-18 % of the countries 70 million inhabitants (8-10 million) have infection with hepatitis C. It is the single most important cause of liver disease in Egypt, where the sero prevalence 10-20 folds higher than the United States. In addition, of causing many serious liver diseases as cirrhosis and hepatocellular carcinoma, hepatitis C can be linked to may extra-hepatic diseases as lymphoma in Egypt. According to the results of hepatitis C project in Egypt, the prevalence among entire population is 12-15% it is high in lower and Middle Egypt, and lowest in the cities. Genotype distribution is very homogenous, 90%.is type 4. Risk factors include blood transfusions, dental procedures, hospital admission, panenteral antischistosomiasis and frequent injections. Now there is changing pattern of infections, including mainly house hold contacts especially in villages, healthcare workers unsafe injections and iatrogenic transmission.

Conclusion: Hepatitis C caused a panic and nightmare in Egypt, affecting health, Life, economy, social, martial and even psychological aspects of many Egyptians. Efforts must be directed mainly prevention of transmission through wide national program.

A Potential Prognostic Test for Prediction of HCV Response to IFN Therapy

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Viral factors that influence the response of HCV to interferon therapy have been a subject for much debate. The sequence located at the 5' upstream end from the interferon sensitivity determining region (ISDR) of the non structural 5A (NS5A) gene of HCV is believed to be part of a binding site for the interferon (IFN) stimulated human 2',5' Oligo Adenylate Synthetase (OAS) enzyme, an enzyme involved in degradation of viral genomic RNA. We have cloned this region from basal serum samples derived from early and delayed responder HCV patients with chronic hepatitis associated with type 4a infection. Our results revealed that the early responder patients had several clones (each represents distinct quasispecies) all of them are identical with the same nucleotide sequence. On the other hand delayed responders had two groups of clones; the prototype and a mutant clone with only a single base mutation leading to single amino acid substitution. Analysis of clones from this viral region after 24 weeks of IFN + ribavirin therapy revealed that the mutant clone has been completely disappeared, whereas those clones carrying the prototype strain remained detectable even after extension of IFN+ ribavirin therapy to 48 weeks, thus suggesting a functional deterioration of the binding site for OAS with a subsequent degradation of viral RNA in mutant strain. A specific Restriction Fragment Length Polymorphism (RFLP) analysis was then designed for rapid screening of this prognostic mutation where non responder HCV strain was called P (from prototype) while the responder HCV strain was called M (from mutant). To verify the potency of this prognostic procedure we examined, in a retrospective study, the structure of this viral region in 71 chronic HCV patients including 37 non responders, 27 delayed responders and 7 super responders. Our results were highly encouraging i.e. only P strain was detected in non responders; only M strain was detected in

super responders while P and M strains were both detected in delayed responders.
We recommend expanding the use of this test in a multi-center study to validate this test as an accurate inclusion criterion for guaranteed success of IFN as an anti HCV agent.

Relation between Hepatitis C and Osteoporosis

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Hepatitis is a clinico-pathological condition that results from damage of the liver cells either by viral, bacterial, pharmacological, or immune-mediated damage.

Viral hepatitis is a major cause of morbidity and mortality with an estimated 200 millions chronically infected individuals world wide.

Infection may be asymptomatic or may cause acute anicteric or icteric hepatitis, chronic hepatitis, cirrhosis or hepatocellular carcinoma. Hepatitis C virus (HCV) infection is very high among Egyptians, the potential importance of HCV as a cause of liver disease in Egypt has been noticed. Rates of 11-22% seropositivity were reported among volunteer donors. Osteoporosis is a systemic skeletal disease characterized by low bone mass and microarchitectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fractures. Osteoporosis is one of the growing health problems affecting 75 million people in developed countries. Hepatic osteodystrophy occur in up to 50% of patients with chronic liver disease and is mainly due to an imbalance between bone formation and bone resorption that results in osteoporosis, so osteoporosis is one of the important metabolic complications of chronic liver diseases.

Epidemiologic Study of Skin Manifestations among Chronic HCV Patients in Egypt

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Background: Chronic HCV infection may be associated with various dermatologic manifestations. The prevalence of skin manifestations varies from one geographic area to another.
The aim of the study: To detect the dermatologic manifestations related to chronic HCV infection in Egyptian patients.
Patients and methods: One hundred and fifty-five patients with chronic HCV infection (51 females, 104 males) followed up at the Hepatology and Dermatology Outpatient Clinic of National Research Center were recruited into the study.
Results: Seventy-one patients had dermatologic manifestations (45.8%) in the form: of: pruritus without evient skin lesions in 33 patients (21.3%); pigmented pupuric eruption in eight patients (5.2%); aphthous ulcer and lichen planus each was present in six patients (3.9%); leucocytoclastic vasculitis in four patients (2.6%); psoriasis in three patients(1.9%); tinea versicolor in two patients (1.3%); vasculitis, melasma, localised neurodermatitis, pseudofolliculitis, pytiriasis rosea, chronic eczema, scabies and stasis eczema each was present in one patient (0.6%).
Development of pruritus among cirrhotic patients carry significant risk, that is twice more than its development among chronic hepatitis (CH) (RR= 2.81, CI = 1.31- 6.02), Moreover, Development of other skin lesions among cirrhotic patients carry significant risk equal to three times more than its development among CH (RR= 3.78, CI = 1.80- 7.93). Development of pruritus among males carry risk nearly twice more than its development among females but insignificant (RR= 1.84, CI = 0.84- 4.06).
Conclusion: Chronic hepatitis C virus infection is associated with different skin manifestations and cirrhotic patients carry more risk to develop these skin lesions.

Prevalence of Hepatitis G Infection in Hemodialysis Patients

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Background: Viral hepatitis is a major public health problem and the main impact is not only on health but also on national economics. A novel virus termed hepatitis G virus (HGV) was discovered by a novel polymerase chain reaction (PCR) technique. **Objectives:** This study was undertaken to determine the prevalence of hepatitis G in different age groups. **Subjects and Methods:** Seventy one Egyptian patients were included in this study. They were collected from two hemodialysis units that used to send their patient' serum at regular 3months duration for testing HBsAg, HCV and HIV antibodies.All patients have been subjected to complete medical history, full clinical examination, liver function tests including alanine amino transferase (ALT), asparagines aminotransferase(AST), serum alkaline phosphatase(ALP) , serum creatinine , HCV antibodies, HBsAG, HIV antibodies in serum by ELISA Technique and HGV-RNA detection in serum by RT-PCR. A group of 10 normal healthy individuals were selected as a control. **Results:** The prevalence of HGV in hemodialysis patients was found to be 17% with prevalence of HCV in HGV positive hemodialysis patients higher 83.3% than the prevalence of HBV 6.3%. Blood transfusion was reported 66.6% in positive cases (P value <0.05) and combined HCV infection was 83.3% (P <0.01). Also there was highly significant correlation between duration of renal dialysis and positive detection of GBV-C/HGV-RNA in serum. On the other hand GBV-C/HGVRNA positive showed no predilection to certain sex or age group. **Conclusion:** HGV is less prevalent than HCV in hemodialysis patients who are at high risk of acquiring both HGV and HCV infections via blood transfusion and hemodialysis equipments. There is a significant association between HGV and HCV infection raising the possibility that HCV infection may be risk factor for HGV infection and both viruses share routes of transmission.

Key words: serum alkaline phosphatase, serum alanine aminotransferase, hepatitis C virus, hepatitis G virus and polymerase chain reaction (PCR).

Caspase 3 Activity in Monocytes and Liver Cell Injury in Hepatitis C Patients

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Hepatic cirrhosis is a frequent complication in chronic hepatitis C virus (HCV) infection that occurs via an unclear mechanism. Apoptosis has been claimed to be associated in liver cirrhosis. Caspases play important roles not only in cell death by apoptosis but also maturation and function of many cells. Monocytes play important roles in inflammations as antigen presenting cells and major sources of inflammatory cytokines. We have studied the role of caspase 3 in monocytes in hepatitis patients with HCV infection using two caspase assays: blot assay and flow cytometry assay. Purified monocytes demonstrated caspase 3 activities by western blot at 0 time point in 12 patients with HCV infection (10 HCV patients with elevated liver enzymes and 2 out of 10 HCV patient with normal liver enzymes). At the same time, purified monocytes from normal healthy controls showed caspase 3 activities only after 16 hr culture. Caspase 3 activation was also confirmed by flow cytometry analysis using the PhiPhiLux assay where in 12 hepatitis patients' samples; caspase 3 activation was detected at 0 time before culture. Using the PhiPhiLux assay the differences were highly significant for both hepatitis patients groups in comparison to the normal healthy control ($p^{**} < 0.001$). The average mean fluorescence intensity was 222 ± 63 in the hepatitis patients with elevated liver enzymes, 52 ± 34 in patients with normal liver enzymes and 8.6 ± 2.8 for the normal healthy controls. Moreover, there was a significant correlation between caspase 3 activity and liver enzyme levels in the hepatitis patients. This results show that caspase 3 activation is associated with inflammatory reactions in chronic HCV infection and caspase 3 activation levels, especially in monocytes, might be reliable tools to detect high levels of liver Injury in chronic HCV infection.