Kasr Al-Ainy Inernational Publications

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Faculty of Medicine

Dept. of Anatomy

789. The Effect of Mesenchymal Stem Cells and Chitosan Gel on Full Thickness Skin Wound Healing in Albino Rats: Histological, Immunohistochemical and Fluorescent Study

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Plos One, 10(9):e0137544: (2015) IF: 3.234

Background Wound healing involves the integration of complex biological processes. Several studies examined numerous approaches to enhance wound healing and to minimize its related morbidity. Both chitosan and mesenchymal stem cells (MSCs) were used in treating skin wounds. The aim of the current work was to compare MSCs versus chitosan in wound healing, evaluate the most efficient route of administration of MSCs, either intradermal or systemic injection, and elicit the mechanisms inducing epidermal and dermal cell regeneration using histological, immunohistochemical and fluorescent techniques.
Material and Methods Forty adult male Sprague Dawley albino rats were divided into four equal groups (ten rats in each group): control group (Group I); full thickness surgical skin wound model, Group II: Wound and chitosan gel. Group III: Wound treated with systemic injection of MSCs and Group IV: Wound treated with intradermal injection of MSCs. The healing ulcer was examined on day 3, 5, 10 and 15 for gross morphological evaluation and on day 10 and 15 for histological, immunohistochemical and fluorescent studies.
Results Chitosan was proved to promote wound healing more than the control group but none of their wound reached complete closure. Better and faster healing of wounds in MSCs treated groups were manifested more than the control or chitosan treated groups. It was found that the intradermal route of administration of stem cells enhanced the rate of healing of skin wounds better than the systemic administration to the extent that, by the end of the fifteenth day of the experiment, the wounds were completely healed in all rats of this group. Histologically, the wound areas of group IV were hardly demarcated from the adjacent normal skin and showed complete regeneration of the epidermis, dermis, hypodermis and underlyingmuscle fibers. Collagen fibers were arranged in many directions, with significant increase in their area percent, surrounding fully regenerated hair follicles and sebaceous glands in the dermis of the healed areas more than in other groups.
Conclusion MSCs enhanced the healing process of wound closure more than chitosan gel treatment. Furthermore, MSCs injected intradermally, were more efficient in accelerating wound healing than any other mode of treatment.

790. Concomitant Protective and Therapeutic Role of Verapamil in Chronic Mercury Induced Nephrotoxicity in the Adult Rat: Histological, Morphometric and Ultrastructural Study

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Arch Med Sci, 11(1): 199-209 (2015) IF: 2.03

Introduction: Mercury intoxication is a widespread problem as mercury is used in the manufacture of thermometers, batteries and electrical switches. It forms one of the most diffusible environmental pollutants. Mercury has a nephrotoxic effect which could occur at low exposure levels. Verapamil could help in the treatment of mercuric toxicity. The aim of the study was to examine the protective and therapeutic effect of concomitant verapamil on chronic mercuric chloride nephrotoxicity. This was done through histological, morphometric and transmission electron microscopic studies.
Material and Methods: Sixty adult male albino rats were used. The rats were divided into a control group and 4 experimental groups: group I (HgCl2), group II (concomitant HgCl2 and verapamil), group III (HgCl2 withdrawal) and group IV (HgCl2 withdrawal then verapamil treatment).
Results: Chronic administration of HgCl2 resulted in cortical nephrotoxic effects in the form of glomerular sclerosis, acute tubular necrosis and interstitial inflammatory cellular infiltration which eventually ended in interstitial fibrosis. Concomitant use of verapamil with HgCl2 improved the previous pathological changes partially. The findings in group III were less severe compared to group IV. The persistence of the pathological findings in these groups reflects the irreversible nephrotoxic changes caused by chronic HgCl2 exposure.
Conclusions: We concluded that the concomitant administration of verapamil has a much better effect in minimizing the nephrotoxic effect caused by chronic HgCl2 than its therapeutic administration. So, we recommended the prophylactic use of verapamil in suspected cases of chronic mercuric chloride nephrotoxicity to preserve renal function.
Keywords: Verapamil chronic mercury nephrotoxicity.

791. The Effect of Liquid Diet on the Parotid Gland and the Protective Role of L-Carnitine: Immunohistochemical and Ultrastructural Study

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Folia Morphologica, 74(1): 42-9 (2015) IF: 0.336

Background: The moisture content of diet and the dryness of the mouth alter the volume of parotid saliva secreted in rats and it plays an important part in mastication and swallowing. Temporary or permanent liquid diet feeding provides a nutritional regime for patients in certain medical situations. The aim of the present work is to investigate the sequel of liquid diet on parotid gland in rats and the possible protective role of L-carnitine (L-car).
Materials and Methods: Thirty adult male albino rats were divided into three groups (10 per group) — Control group: rats were fed on regular pellet diet, Liquid diet group and Liquid diet supplemented with L-car group were received liquid diet. The parotid glands were dissected for histological, immunohistochemical and ultrastructural analysis.
Results: By light microscope, liquid fed group showed some areas with degenerated irregularly shaped acini and atrophic acini with vacuolated cytoplasm and pyknotic nuclei. Acinar cells of parotid gland group on liquid diet supplemented with L-car, had normally eosinophilic cytoplasm with few vacuoles in their acinar cells. Periodic acid Schiff (PAS) staining, in liquid fed group showed that the serous acini were weakly stained with PAS that was localised in the apical portion of the cells where the secretory granules lie with lack of staining of the vacuoles. However,

moderately stained acinar epithelial cell and fewer vacuoles was seen in group given liquid diet supplemented with L-car. Immunohistochemistry of Caspase 3 showed more apoptotic cells with increased area per cent of Caspase 3 immunoexpression, seen in the acini and more in the ductal epithelium in liquid fed group. It was markedly reduced in the acinar cells in group on liquid diet supplemented with L-car. Electron microscopic study revealed in liquid fed group acini with multiple cytoplasmic vacuoles and reduced secretory granules, degenerated swollen mitochondria and dilated cisternae of endoplasmic reticulum. Degenerated condensed nuclear mass or indented nuclear membrane, nuclei with karyorrhexis and chromatin material leaked in the cytoplasm with rupture of the nuclear membranes were also seen. In parotid gland of liquid fed group supplemented with L-car, acinar cells showed normally distributed secretory granules and few cytoplasmic vacuoles. They showed normal appearance of the nuclei and their cytoplasmic organelles. **Conclusions**: Liquid diet caused cellular degenerative damages and apoptotic changes in parotid gland and these changes can be prevented by L-car supplementation probably by its antioxidant properties. (Folia Morphol 2015; 74, 1: 42–49)
Keywords: Parotid; Liquid diet; L-carnitine; Caspase 3; Ultrastructure.

792. Efficiency of Selenium in Attenuating Epididymal Histopathological Changes in Hypercholesterolaemic Adult Rat

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Folia Morphologica, 74 (3): 295-302 (2015) IF: 0.336

Background: Studies on sperm maturation, epididymal histology, or epididymal tubule physiology are significant parts in reproductive researches. The present study was aimed to evaluate the effect of induced hypercholesterolaemia on the epididymis of adult albino rats and to clarify the possible protective role of selenium.
Materials and Methods: Forty adult albino Wistar rats were divided into four groups; untreated control group (group I), sham control (group II), group with induced hypercholesterolaemia (group III), group with induced hypercholesterolaemia treated with selenium 0.25 mg/kg/day (group IV).
Results: Histological and ultrastructural examination of the epididymal epithelial cells of hypercholesterolaemic rats (group III) showed loss of cilia with many vacuolations, fatty degenerative changes and increased collagen fibres. Morphometrically significant increase ($p < 0.0001$) in the per cent area of collagen fibres with no significant change in the optical density of periodic acid Schiff reaction ($p > 0.05$). Selenium treated group (group IV) produced marked improvement in histological, ultrastructural and morphometric Results as compared with group III.
Conclusions: It could be concluded that hypercholesterolaemia produced deleterious effects to the epididymis and selenium could attenuate these effects.
Keywords: Epididymis; Histopathology; Hypercholesterolaemia; Selenium.

793. Prevalence of Obesity Among Male Adolescents in Arar Saudi Arabia: Future Risk of Cardiovascular Disease

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Indian Journal of Community Medicine, 40(3): 182-187 (2015)

Background: Obesity in adolescence is crucial as it represents an important stage in human life. Dietary habits are greatly associated with lifestyle. Many reports suggested direct relationship between adolescent fatness and increased risk of cardiovascular diseases (CVD) which will be found in young adult population. AIM: Determine the prevalence of overweight and obesity among male adolescents in Arar city, Saudi Arabia (KSA). We estimated the future risk of developing cardiovascular diseases in this age-group and its possible correlation to different lifestyles and dietary habits.
Results: A total of 523 male students with a mean age of 16.7 ± 0.9 years participated in the current study in which 30.4% of those students were obese and 17.2% were overweight. A direct relationship was found between body weight and different dietary and lifestyle habits. The risk of CVD based on waist height ratio (WHtR) was found in 33.5% of participants (30.4% obese, 2.1% overweight and 1% normal weight); moreover, the risk of CVD was strongly related to different dietary and lifestyle habits. **Conclusion**: Overweight and obesity were high among adolescent male students in Arar, who became susceptible to the risk of CVD. Arar showed the highest rate of obesity all over KSA. Both obesity and risk of CVD were strongly related to bad dietary habits and lifestyle.
Keywords: Ardiovascular; Disease; Lifestyle; Obesity.

Dept. of Andrology & Sexology

794. Relationship of Paternal Age with Outcome of Percutaneous Epididymal Sperm Aspiration-Intracytoplasmic Sperm Injection, in Cases of Congenital Bilateral Absence of the Vas Deferens

Samir Elhanbly, Moustafa A. El-Saied, Mohamed Fawzy, Abdelaziz El-Refaeey and Taymour Mostafa

Fertilitry Sterility, 104: 602-606 (2015) IF: 4.59

Objective To assess the relationship between paternal age and the outcome of percutaneous epididymal sperm aspiration-intracytoplasmic sperm injection (ICSI) in patients with congenital bilateral absence of the vas deferens (CBAVD).
Design: Prospective cohort study.
Setting: In vitro fertilization centers.
Patient(S): Eighty-five (male) CBAVD patients who underwent percutaneous epididymal sperm aspiration with ICSI were divided into 3 age groups; <30 years (n = 27); aged 30-40 years (n = 32); and aged >40 years (n = 26).
Intervention(S): History taking, clinical examination, semen analysis, percutaneous epididymal sperm aspiration with subsequent ICSI.
Main Outcome Measure (S): Sperm retrieval, clinical pregnancy, and "take-home baby."
Result(S): The number of sperm retrieved by percutaneous epididymal sperm aspiration significantly decreased with advancing age in the studied groups (0.63, 0.31, and 0.18 million,

respectively), concomitant with significant decreases in the outcomes of clinical pregnancy (55.5%, 43.7%, and 23.1%, respectively) and "take-home baby" (48.1%, 40.6%, and 11.5%, respectively). Male age was significantly negatively correlated with retrieved sperm count, sperm motility, sperm vitality, and normal sperm morphology. Multiple logistic regression, adjusted for confounding factors, with male age, and sperm count obtained using percutaneous epididymal sperm aspiration, was significant. The receiver operating characteristic curve showed that a sperm count of 0.55 million as a cutoff value could predict clinical pregnancy with an accuracy of 77.4%, with 82.9% sensitivity and 62% specificity, and "take-home baby" with an accuracy of 81.7%, with 93.1% sensitivity and 62.5% specificity. **Conclusion**(S): In cases of CBAVD, male age has a negative effect on retrieved-sperm count, motility, vitality, and normal sperm morphology; number of retrieved sperm predicted both clinical pregnancy and "take-home baby" outcomes in subsequent ICSI.

Keywords: Male infertility; ICSI; PESA; CBAVD; Semen.

795. Priapism as A Result of Chronic Myeloid Leukemia: Case Report, Pathology, and Review of the Literature

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Journal of Sexual Medicine, 12(3): 827-834 (2015) IF: 3.151

Introduction: Priapism is rare-presenting feature in male patients with chronic myeloid leukemia (CML). Several hypotheses for pathogenesis have been described. Management has been controversial; some authors described resolution following priapism-specific interventions, and others recommended addition of CML-specific therapy or even CML-specific therapy alone.
Aim: In this report, we describe presentation and management of a man with refractory priapism that was the first presenting manifestation of CML. We also report, for the first time, the pathology sections of the sinusoidal tissue in such cases. Literature is reviewed for similar cases and their outcome.
Methods: A 21-year-old male patient presented with painful priapism that started 6 days earlier and failed aspiration-irrigation. CBC revealed marked leucocytosis. Oncology care diagnosed CML, and treatment with Imatinib was commenced with prior semen cryopreservation. Following remission, a penile prosthesis was implanted, assisted by optical corporotomy. Sinusoidal tissue biopsy was stained by hematoxylin/eosin (H&E) and CD34. **Main Outcome Measures**: Pathology sections of cavernous tissue following CML-induced priapism.
Results: The penile implant survived without complications. H&E examination of the sinusoidal tissue biopsy revealed leukemic infiltration associated with vascular endothelial damage. CD34 staining showed the mixed picture of leukemic infiltrates, intact vascular endothelium with lumena showing leukemic cells, alternating with destroyed vessels, and no vascular lumena and ruminants of endothelial cells.
Conclusion: Priapism can be the first manifestation of previously undetected CML. The pathological picture of sinusoidal tissue in such cases is presented. In the case at hand, a complete blood picture was helpful in early diagnosis of CML and early initiation of targeted chemotherapy along with the corporal irrigation/aspiration or shunt surgery. It is therefore recommended to have a CBC examined at presentation of any case of ischemic priapism of unknown etiology, early initiation of CML therapy along with aspiration/irrigation, preferably cryopreserving a semen sample before CML therapy

Keywords: Priapism; CML; Chronic myeloid leukemia.

796. The International Society for Sexual Medicine'S Process of Care for the Assessment and Management of Testosterone Deficiency in Adult Men

John D. Dean, Chris G. McMahon, Andre T. Guay, Abraham Morgentaler, Stanley E. Althof, Edgardo F. Becher, Trinity J. Bivalacqua, Arthur L. Burnett, Jacques Buvat, Amr El Meliegy, Wayne J.G. Hellstrom, Emmanuele A. Jannini, Mario Maggi, Andrew McCullough, Luiz Otavio Torres and Michael Zitzmann

Journal of Sexual Medicine, 12: 1660-1686 (2015) IF: 3.151

Introduction: In 2014, the International Society for Sexual Medicine (ISSM) convened a panel of experts to develop an evidence-based process of care for the diagnosis and management of testosterone deficiency (TD) in adult men. The panel considered the definition, epidemiology, etiology, physiologic effects, diagnosis, assessment and treatment of TD. It also considered the treatment of TD in special populations and commented on contemporary controversies about testosterone replacement therapy, cardiovascular risk and prostate cancer.
Aim: The aim was to develop clearly worded, practical, evidenced-based recommendations for the diagnosis and treatment of diagnosis and management of TD for clinicians without expertise in endocrinology, such as physicians in family medicine and general urology practice.
Method: A comprehensive literature review was performed, followed by a structured, 3-day panel meeting and 6-month panel consultation process using electronic communication. The final guideline was compiled from reports by individual panel members on areas reflecting their special expertise, and then agreed by all through an iterative process.
Results: This article contains the report of the ISSM TD Process of Care Committee. It offers a definition of TD and recommendations for assessment and treatment in different populations. Finally, best practice treatment recommendations are presented to guide clinicians, both familiar and unfamiliar with TD.
Conclusion: Development of a process of care is an evolutionary process that continually reviews data and incorporates the best new research. We expect that ongoing research will lead to new insights into the pathophysiology of TD, as well as new, efficacious and safe treatments. We recommend that this process of care be reevaluated and updated by the ISSM in 4 years.

Keywords: Assessment of hypogonadism; Etiology of hypogonadism; Hypogonadism; Testosterone deficiency; Treatment of hypogonadism.

797. Ropporin Gene Expression in Infertile Asthenozoospermic Men with Varicocele Before and after Repair

Medhat K. Amer, Rashad M. Mostafa, Amal Fathy, Hany M. Saad and Taymour Mostafa

Urology, 85: 805-808 (2015) IF: 2.188

Objective: To assess Ropporin gene expression in the sperm of infertile asthenozoospermic men with varicocele (Vx) before and after repair.
Methods: This study included 24 infertile asthenozoospermic men with Vx. They were subjected to history taking, clinical examination, scrotal color Doppler, and semen analysis with sperm separation. Three months after varicocelectomy, they were subjected to postoperative color Doppler, semen analysis, and sperm semiquantitative Reverse Transcription-Polymerase Chain Reaction assay for Ropporin gene expression levels.
Results: Ropporin gene expression is significantly associated with different types of sperm motility, except for nonprogressive sperm motility. There was significant Ropporin gene overexpression postvaricocelectomy that was correlated with improved sperm count, sperm motility, and abnormal sperm morphology with decreased veins diameters.
Conclusion: Ropporin gene expression is related to the sperm motility. Its abnormal expression in the sperm of asthenozoospermic men with Vx is associated with impaired sperm motility that is improved after varicocelectomy.
Keywords: Male infertility; Semen; Ropporin gene; Oat.

798. Endothelial Nitric Oxide Synthase Gene Polymorphism Relationship with Semen Parameters and Oxidative Stress in Infertile Oligoasthenoteratozoospermic Men

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Urology, 85: 1058-1061 (2015) IF: 2.188

Objective: To assess endothelial nitric oxide synthase (eNOS) gene polymorphism relationship with semen parameters and oxidative stress in infertile oligoasthenoteratozoospermic (OAT) men.
Materials and Methods: Three hundred subjects were divided into healthy fertile men (n = 80) and infertile OAT men (n = 220). They were subjected to history taking, clinical examination, and semen analysis in addition to malondialdehyde and glutathione peroxidase estimation in seminal plasma. Polymorphisms of eNOS G894T and T786C genotypes in peripheral blood were identified by the polymerase chain reaction-restriction fragment length polymorphism analysis.
Results: Comparing infertile OAT men with fertile controls, eNOS genotype G894T demonstrated prevalence of 36.8% vs 50% for wild type (GG), 35.0% vs 47.5% for heterozygous type (GT), and 28.2% vs 2.5% for mutant homozygous type (TT). Compared with GG homozygotes, carriers with A allele exhibited >1.716-fold increased risk of OAT occurrence. Comparing infertile OAT men with fertile controls, eNOS genotype T786C demonstrated prevalence of 37.3% vs 51.3% for wild type (TT), 32.7% vs 45% for heterozygous type (TC), and 30% vs 3.7% for mutant type (CC) with significant differences. Compared with TT homozygotes, carriers with C allele exhibited >1.769-fold increased risk of OAT occurrence. G894T and T786C genotypes demonstrated significant negative correlation with sperm count, total sperm motility, sperm normal forms, and seminal glutathione peroxidase, and significant positive correlation with seminal malondialdehyde. G894T genotype demonstrated significant positive correlation with T786C genotype.
Conclusion: There is a significant relationship between eNOS genotypes T786C, G894T polymorphisms with decreased sperm parameters and increased seminal oxidative stress.
Keywords: Male infertility; Semen; Enos; Polymorphism.

799. Impact of the Mode of Delivery on Female Sexual Function after Childbirth

M.A. Eid, A. Sayed, R. Abdel-Rehim and T. Mostafa

Inte. J. of Impotence Research, 27: 118-120 (2015) IF: 1.756

This cohort study aimed to assess the effect of the mode of delivery on female sexual function (FSF) after childbirth. Out of 256 primiparous women, 200 subjects that completed the study were divided into two groups; women that delivered vaginally and women that had elective cesarean section (CS). They were subjected to a translated version of female sexual function index (FSFI) questionnaire evaluating desire, lubrication, orgasm, satisfaction, pain both antenatally and 12 weeks postpartum. The mean FSFI total score of the two investigated groups demonstrated nonsignificant difference 12 weeks after delivery compared with these scores antenatally. Women that delivered vaginally demonstrated significant decreases in the scores of desire, arousal and lubrication domains 12 weeks after delivery compared with these scores antenatally where other scores demonstrated nonsignificant differences. Women that delivered by CS demonstrated a significant difference in desire domain 12 weeks after delivery compared with these scores antenatally where other scores demonstrated nonsignificant differences. It is concluded that the mode of delivery has nonsignificant effect on the FSF 12 weeks after childbirth. Specifically, vaginal delivery is associated with significant decrease in the desire, arousal and lubrication domains where elective CS is associated with significant decrease in the desire domain.
Keywords: Female sexual dysfunction; Pregnancy; Delivery; Desire.

800. Cytochrome P450-2D6*4 Polymorphism Seminal Relationship in Infertile Men

A. Zalata, A. Z. El-Samanoudy, G. Osman, S. Elhanbly, H. A. Nada and T. Mostafa

Andrologia, 47: 525-530 (2015) IF: 1.63

This study aimed to assess cytochrome (CY) P450-2D6*4 polymorphism relationship with semen variables in infertile men. In all, 308 men were included; fertile normozoospermia (N) (n = 77), asthenozoospermia (A) (n = 70), asthenoteratozoospermia (AT) (n = 75) and oligoasthenoteratozoospermia (OAT) (n = 86). They were subjected to history taking, clinical examination, semen analysis, sperm acrosin activity, seminal malondialdehyde (MDA) and CYP450-2D6*4 genotyping. CYP450-2D6*4 wild-type allele was represented in 76.5% of N, 70% of A, 66.7% of AT and 57.7% of OAT men where homozygous gene mutation was present in 5.9% of N, 20% of A, 26.6% of AT and 26.9% of OAT men, respectively. Sperm acrosin activity, sperm concentration, sperm motility, linear sperm velocity and sperm normal forms were significantly higher, and seminal MDA level was significantly lower in men with CYP450-2D6*4 wild-type allele compared with men with homozygous mutation. It is concluded that CYP450-2D6*4 wild-type allele has higher

frequency where homozygous-type allele has lower frequency in N men compared with A, AT and OAT men. Sperm acrosin activity index, sperm concentration, sperm motility, linear sperm velocity and sperm normal forms were significantly higher, and seminal MDA level was significantly lower in men with CYP450-2D6*4 wild-type allele compared with men with homozygous mutation.

Keywords: Acrosin activity; Cytochrome 450; Male infertility; Polymorphism; Semen.

801. Seminal Plasma Oxytocin and Oxidative Stress Levels in Infertile Men with Varicocele

T. Mostafa, L. A. Rashed, I. Osman and M. Marawan

Andrologia, 47: 209-213 (2015) IF: 1.63

This study aimed to assess seminal plasma oxytocin (OT) and oxidative stress (OS) levels in infertile men with varicocele (Vx). A total of 131 men were divided into fertile men (n = 20), fertile men with Vx (n = 17), infertile men without Vx (n = 40) and infertile men with Vx (n = 54). OT, malondialdehyde (MDA) and glutathione peroxidase (GPx) were estimated in seminal plasma. Mean levels of seminal OT, MDA were significantly decreased, and the mean level of GPx was significantly increased in fertile men with/without Vx compared with infertile men with/without Vx. Mean levels of OT, MDA were increased, and mean level of GPx was significantly decreased in Vx grade III cases compared with Vx grades I, II cases and in bilateral Vx cases compared with unilateral Vx. There was significant negative correlation between seminal OT with sperm count, sperm motility, seminal GPx and significant positive correlation with sperm abnormal forms, seminal MDA. It is concluded that seminal OT is significantly decreased in fertile men with/without Vx compared with infertile men with/without Vx. Seminal OT demonstrated significant negative correlation with sperm count, sperm motility, seminal GPx and significant positive correlation with sperm abnormal forms, seminal MDA. Seminal OT is associated with Vx grade and its bilaterality.

Keywords: Male infertility; Oxidative stress; Oxytocin; Semen; Varicocele.

802. Penile Length-somatometric Parameters Relationship in Healthy Egyptian Men

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Andrologia, 47: 402-406 (2015) IF: 1.63

This study aimed to assess the penile length-somatometric parameters relationship in healthy Egyptian men. Two thousand physically normal men (22-40 years) were subjected to measurement of stretched penile length, glans penis, testis size, index finger, weight, height, span, body mass index (BMI), waist circumference, hip circumference and waist/hip ratio. The mean stretched penile length of the studied subjects was 13.84 ± 1.35 cm (range 12-19 cm), and the mean glans penis length was 2.6 ± 0.4 cm (range 1.7-3.8 cm). Penile length demonstrated positive significant correlation with glans penis length, index finger length, BMI and significant negative correlation with waist/hip ratio. On the other hand, penile length demonstrated nonsignificant correlation with age, weight, height, waist circumference, span or testicular size. It is concluded that the penile length-somatometric parameters relationship in healthy Egyptian men is mostly related to glans penis and index finger lengths.

Keywords: Glans penis; Index finger; Penis; Somatometrics; Testis.

803. Glutathione-s-transferase-oxidative Stress Relationship in the Internal Spermatic Vein Blood of Infertile Men with Varicocele

T. Mostafa, L. A. Rashed, A. S. Zeidan and A. Hosni

Andrologia, 47: 47-51 (2015) IF: 1.63

This study aimed to assess glutathione-S-transferase (GST) enzyme- oxidative stress (OS) relationship in the internal spermatic vein (ISV) of infertile men associated with varicocele (Vx). Ninety five infertile oligoasthenoteratozoospemic (OAT) men associated with Vx were subjected to history taking, clinical examination and semen analysis. During inguinal varicocelectomy, GST, malondialdehyde (MDA) and glutathione peroxidase (GPx) were estimated in the blood samples drawn from ISV and median cubital veins. The mean levels of GST, GPx were significantly decreased and the mean level of GPx was significantly increased in the ISV compared with the peripheral blood. The mean level of GST and GPx in the ISV was significantly decreased, and the mean level of MDA was significantly increased in Vx grade III compared with Vx grade II cases. There was nonsignificant difference in the mean level of GST in the ISV in unilateral Vx cases compared with bilateral Vx cases. There was significant positive correlation of GST with sperm count, sperm motility, GPx and significant negative correlation with sperm abnormal forms, MDA. It is concluded that ISV of infertile men associated with Vx has decreased levels of GST compared with peripheral venous circulation that is correlated with both OS and Vx grade.

Keywords: Glutathione-s-transferase; Internal spermatic vein; Male infertility; Oxidative stress; Varicocele.

804. in Vitro Effect of Cell Phone Radiation on Motility, DNA Fragmentation and Clusterin Gene Expression in Human Sperm

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Int J Fertil Steril, 9: 129-136 (2015)

Background: Use of cellular phones emitting radiofrequency electromagnetic field (RF-EMF) has been increased exponentially and become a part of everyday life. This study aimed to investigate the effects of in vitro RF-EMF exposure emitted from cellular phones on sperm motility index, sperm DNA fragmentation and seminal clusterin (CLU) gene expression. **Materials and Methods**: In this prospective study, a total of 124 semen samples were grouped into the following main categories: i. normozoospermia (N, n=26), ii. asthenozoospermia (A, n=32), iii. asthenoteratozoospermia (AT, n=31) and iv. oligoasthenoteratozoospermia (OAT, n=35). The same semen samples were then divided into two portions non-exposed and exposed samples to cell phone radiation for 1 hour. Before and immediately after exposure, both aliquots were subjected to different assessments for sperm motility, acrosin activity, sperm

DNA fragmentation and CLU gene expression. Statistical differences were analyzed using paired t student test for comparisons between two sub-groups where $p<0.05$ was set as significant.

Results: There was a significant decrease in sperm motility, sperm linear velocity, sperm linearity index, and sperm acrosin activity, whereas there was a significant increase in sperm DNA fragmentation percent, CLU gene expression and CLU protein levels in the exposed semen samples to RF-EMF compared with non-exposed samples in OAT>AT>A>N groups, respectively ($p<0.05$).

Conclusion: Cell phone emissions have a negative impact on exposed sperm motility index, sperm acrosin activity, sperm DNA fragmentation and seminal CLU gene expression, especially in OAT cases.

Keywords: Cell phone; Electromagnetic radiation; Sperm motility; Spermatozoa.

Dept. of Cardiology

805. Association Between Surgical Indications, Operative Risk, and Clinical Outcome in Infective Endocarditis A Prospective Study from the International Collaboration on Endocarditis

Vivian H., Lawrence P. Park, Eugene Athan, Francois Delahaye, Tomas Freiberger, Cristiane Lamas, Jose M. Miro, Daniel W. Mudrick, Jacob Strahilevitz, Christophe Tribouilloy, Emanuele Durante-Mangoni, Juan M. Pericas, Nuria Fernández-Hidalgo, Francisco Nacinovich, Hussien Rizk, Vladimir Krajinovic, Efthymia Giannitsioti, John P. Hurley, Margaret M. Hannan and Andrew Wang

Circulation., 2015;131:131-140 IF: 15.073

Background: Use of surgery for the treatment of infective endocarditis (IE) as related to surgical indications and operative risk for mortality has not been well defined.

Methods and Results: The International Collaboration on Endocarditis–PLUS (ICE-PLUS) is a prospective cohort of consecutively enrolled patients with definite IE from 29 centers in 16 countries. We included patients from ICE-PLUS with definite left-sided, non–cardiac device–related IE who were enrolled between September 1, 2008, and December 31, 2012. A total of 1296 patients with left-sided IE were included. Surgical treatment was performed in 57% of the overall cohort and in 76% of patients with a surgical indication. Reasons for nonsurgical treatment included poor prognosis (33.7%), hemodynamic instability (19.8%), death before surgery (23.3%), stroke (22.7%), and sepsis (21%).

Among patients with a surgical indication, surgical treatment was independently associated with the presence of severe aortic regurgitation, abscess, embolization before surgical treatment, and transfer from an outside hospital. Variables associated with nonsurgical treatment were a history of moderate/severe liver disease, stroke before surgical decision, and Staphyloccus aureus etiology. The integration of surgical indication, Society of Thoracic Surgeons IE score, and use of surgery was associated with 6-month survival in IE.

Conclusions: Surgical decision making in IE is largely consistent with established guidelines, although nearly one quarter of patients with surgical indications do not undergo surgery. Operative risk assessment by Society of Thoracic Surgeons IE score provides prognostic information for survival beyond the operative period. S aureus IE was significantly associated with nonsurgical management.

Keywords: Endocarditis; Infection; Mortality; Surgery; Valve.

806. When A Thrombus is Life-saving

Abdalla Elagha and Azza Farag

Circulation., 132: 199-201 (2015) IF: 15.073

A 37-year-old previously healthy man, a manual sugarcane juicer who lives in a rural area, presented with a 1-month history of atypical chest pain in his left shoulder area and a 2-week history of breathlessness on moderate exertion. On admission, the patient was tachycardic and tachypneic and had a blood pressure of 90/60 mm Hg with pulsus paradoxus. Physical examination showed elevated jugular venous pressure and distant heart sounds. ECG revealed ST-segment elevation in the anterior precordial leads (Figure 1A), but his troponin level was normal. Chest x-ray demonstrated an increased cardiothoracic ratio with a flask-shape appearance (Figure 1B). Echocardiography demonstrated massive pericardial effusion with signs of tamponade, left ventricular mass, and dyskinetic apex (Figure 1C and Movie I in the online-only Data Supplement). On the basis of previous investigations, urgent pericardiocentesis was performed; 2000 cm3 of hemorrhagic fluid was aspirated and sent for laboratory investigations. One day later, reaccumulation of pericardial fluid occurred. Cardiac magnetic resonance imaging was requested for further investigations. Surprisingly, a small area of perforation in the dyskinetic apex was demonstrated (Figure 2A). Uncommonly, this perforation was sealed from the inside rather than outside by a left ventricular thrombus, slowing the amount of blood escaping the left ventricular cavity and improving the prognosis (Figure 2B and Movie II in the online-only Data Supplement). Moreover, delayed-hyperenhancement images clearly showed the scar in the left ventricular apex and adjacent segments, with the nonenhanced thrombus overlying it (Figure 2C). Urgent coronary angiography showed total proximal left anterior descending artery occlusion (Figure 3), after which urgent surgical intervention was performed. In the operating room, magnetic resonance imaging findings were confirmed, and a left ventricular aneurysmectomy (Figure 4A), evacuation of a huge mural thrombus (Figure 4B), ventricular reconstruction (Figure 4C), and a left internal mammary artery graft to the left anterior descending artery were performed. When myocardial infarction is complicated by myocardial rupture, usually it occurs within 2 weeks of onset.1 If not diagnosed early and treated promptly, it is fatal.2 However, in this educational case, the formation of a large apical thrombus in the left ventricle overlying the site of myocardial rupture offered a sealing mechanism that decreased the rate of bleeding into the pericardium and temporarily saved the patient from sudden collapse and death.

807. Impact of Early Valve Surgery on Outcome of Staphylococcus Aureus Prosthetic Valve Infective Endocarditis: Analysis in the International Collaboration of Endocarditis-prospective Cohort Study

Hussien Rizk

Clinical Infectious Diseases, 60(5): 741-749 (2015) IF: 8.886

Background: The impact of early valve surgery (EVS) on the outcome of Staphylococcus aureus (SA) prosthetic valve infective endocarditis (PVIE) is unresolved. The objective of this study was to evaluate the association between EVS, performed within the first 60 days of hospitalization, and outcome of SA PVIE within the International Collaboration on Endocarditis–Prospective Cohort Study.
Methods: Participants were enrolled between June 2000 and December 2006. Cox proportional hazards modeling that included surgery as a time-dependent covariate and propensity adjustment for likelihood to receive cardiac surgery was used to evaluate the impact of EVS and 1-year all-cause mortality on patients with definite left-sided S. aureus PVIE and no history of injection drug use.
Results: EVS was performed in 74 of the 168 (44.3%) patients. One-year mortality was significantly higher among patients with S. aureus PVIE than in patients with non–S. aureus PVIE (48.2% vs 32.9%; P = .003). Staphylococcus aureus PVIE patients who underwent EVS had a significantly lower 1-year mortality rate (33.8% vs 59.1%; P = .001). In multivariate, propensity-adjusted models, EVS was not associated with 1-year mortality (risk ratio, 0.67 [95% confidence interval, .39–1.15]; P = .15).
Conclusions: In this prospective, multinational cohort of patients with S. aureus PVIE, EVS was not associated with reduced 1-year mortality. The decision to pursue EVS should be individualized for each patient, based upon infection-specific characteristics rather than solely upon the microbiology of the infection causing PVIE.
Keywords: Endocarditis; Prosthetic valve; Surgery; 1-Year mortality.

808. One-year Outcome Following Biological or Mechanical Valve Replacement for Infective Endocarditis

Hussien Rizk

International Journal of Cardiology, 178: 117-123 (2015) IF: 4.036

Background: Nearly half of patients require cardiac surgery during the acute phase of infective endocarditis (IE). Wedescribe the characteristics of patients according to the type of valve replacement (mechanical or biological), and examine whether the type of prosthesis was associated with in-hospital and 1-year mortality.
Methods and Results: Among 5591 patients included in the International Collaboration on Endocarditis Prospective Cohort Study, 1467 patients with definite IE were operated on during the active phase and had a biological (37%) or mechanical (63%) valve replacement. Patients who received bioprostheses were older (62 vs 54 years), more often had a history of cancer (9% vs 6%), and had moderate or severe renal disease (9% vs 4%); proportion of health care-associated IE was higher (26% vs 17%); intracardiac abscesseswere more frequent (30% vs 23%). In-hospital and 1-year death rateswere higher in the bioprosthesis group, 20.5% vs 14.0% (p= 0.0009) and 25.3% vs 16.6% (p b .0001), respectively. In multivariable analysis, mechanical prostheses were less commonly implanted in older patients (odds ratio: 0.64 for every 10 years), and in patients with a history of cancer (0.72), but were more commonly implanted in mitral position (1.60). Bioprosthesis was independently associated with 1-year mortality (hazard ratio: 1.298).
Conclusions: Patients with IE who receive a biological valve replacement have significant differences in clinical characteristics compared to patients who receive a mechanical prosthesis. Biological valve replacement is independently associated with a higher in-hospital and 1-year mortality, a result which is possibly related to patient characteristics rather than valve dysfunction.
Keywords: Infective endocarditis; Surgery; Valve prosthesis.

809. Scar Characteristics for Prediction of Ventricular Arrhythmia in Ischemic Cardiomyopathy

Sherif Gouda, Amir Abdelwahab, Mohamed Salem and Magdy Abdel Hamid

Pace-Pacing and Clinical Electrophysiology, 38: 311-318 (2015) IF: 1.129

Background Better risk-stratification tools are needed to identify the best candidates for implantable cardioverter defibrillator implantation. Infarct characterization by cardiac magnetic resonance (CMR) has become an evolving potential tool for risk stratification. Objective We assessed the ability of scar characteristics by CMR in patients with postinfarction left ventricular (LV) dysfunction to predict sustained monomorphic ventricular tachycardia (SMVT). Methods Forty-eight patients with postinfarction LV dysfunction underwent CMR study. Twenty-four patients had history of SMVT and the other 24 were control group and underwent electrophysiological study to assess SMVT inducibilty. Various scar characteristics were assessed in the spontaneous SMVT group and were compared with the inducible and noninducible SMVT groups. Results Only six patients in the control group had inducible SMVT. In univariable analysis, total scar (absolute and as percent of LV), scar core (absolute and as percent of LV), peri-infarct zone (absolute and as percent of LV), mean infarct transmurality, and number of segments with late gadolinium enhancement (LGE) were statistically significant predictors of spontaneous SMVT experience and SMVT inducibility. In multivariable analysis, total infarct as percent of LV mass was the only significant independent predictor of spontaneous SMVT experience (odds ratio [OR] 1.33 per% change, 95% confidence interval [CI] 1.12–1.6, P = 0.001) and SMVT inducibility (OR 1.3 per% change, 95% CI 1.1–1.6, P = 0.004). Conclusion Characterization of myocardial infarct by LGE-CMR, specifically total infarct size, is better predictor of spontaneous SMVT experience and SMVT inducibility than LV ejection fraction.
Keywords: Sudden cardiac death; Ventricular tachycardia; Ischemic cardiomyopathy; Cardiac magnetic resonance.

Dept. of Chemical Pathology

810. Mutations in Recombination Activating Gene 1 and 2 in Patients with Severe Combined Immunodeficiency Disorders in Egypt

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Clinical Immunology, 158: 167-173 (2015) IF: 3.672

The Recombination Activating Genes (RAG) 1/2 are important for the development and function of T and B cells. Loss of RAG1/2 function Results in severe combined immunodeficiency (SCID), which could lead to early death. We studied the prevalence of RAG1/2 mutations in ten SCID patients in Egypt. We identified two novel homozygous nonsense mutations in RAG1, a novel homozygous deletion, and a previously reported homozygous missense mutation from four patients, as well as two homozygous mutations in RAG2 from the same patient. Prenatal diagnosis performed in the mother of a patient with RAG1 deficiency determined that the fetus was heterozygous for the same mutation. This represents the first report on RAG1/2 mutations in SCID patients in Egypt. The early diagnosis dramatically affects the outcome of the disease by allowing bone marrow transplantation at an early age, and providing prenatal diagnosis and genetic counseling for families with a history of SCID.

Keywords: Egypt; Omenn syndrome; Prenatal diagnosis; Rag; Severe combined immunodeficiency.

Dept. of Clinical & Chemical Pathology

811. Potential Genetic Markers for Prediction of Treatment Response in Egyptian Children Infected with HCV Genotype 4

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Cytokine, 75: 349-355 (2015) IF: 2.664

Background: Egypt has a high prevalence of hepatitis C virus (HCV) infection. Limitations of the current HCV treatment in children are low rate of sustained virological response, significant side effects and high expenses, making prediction of treatment response crucial.Aim: This study aimed to investigate association of single nucleotide polymorphisms (SNPs) in interleukins (IL) 10, 28 and 29 genes in predicting the response to therapy in HCV infected children.

Methods: Sixty-six Egyptian children infected with HCV genotype 4, receiving pegylated interferon alpha 2b and ribavirin, were included. Genotyping of six SNPs in interleukin 10, 28B and 29 gene as well as HCV genotype were analyzed by real-time polymerase chain reaction.

Results: The CC genotype in IL28B; rs12979860 had 8.547 folds higher chance to develop sustained virological response than CT and TTgenotypes (P = 0.014). Genotype distribution of rs8099917 in IL28B gene (TG and GGgenotypes) was found to be 3.348 more likely not to respond to treatment than the TTgenotype (P = 0.018). In multivariate analysis, interleukin 28 gene single nucleotide polymorphisms rs 12979860, interleukin 10 single nucleotide polymorphisms -592A > Cand basal viral load were independent variables that significantly improved prediction of response to HCV therapy.

Conclusion: This association can be translated into clinical decision making for HCV treatment.

Keywords: Children; HCV; Interleukin 10; Interleukin 28; SNPs.

812. Assessment of Interleukin 28B Genotype as A Predictor of Response to Combined Therapy with Pegylated Interferon Plus Ribavirin in HCV Infected Egyptian Patients

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Cytokine, 74: 268-272 (2015) IF: 2.664

Background and Aim: Single nucleotide polymorphisms (SNPs) of interleukin 28B (IL28B) gene is associated with spontaneous clearance and variable response to combined therapy with pegylated interferon (PEG-IFN) and ribavirin (RBV) in chronic hepatitis C virus (HCV) infected patients. This study aimed at assessing the value of IL28B rs8099917 gene polymorphism in predicting sustained virological response (SVR) among HCV infected Egyptian patients treated with PEG-IFN and RBV.

Methods: Our study was conducted on 153 chronic HCV infected patients treated with PEG-IFN and RBV. Genotyping of rs8099917 near the IL-28B gene wasperformedby Real Time PCR using Taq-Man probe assay.

Results: The overall SVR was achieved in 49.6% of patients. Patients with TT genotype showed significantly higher SVR rate than minor allele (TG/GG) carriers (74% vs. 26%, P = 0.004). Logistic regression analysis revealed that TT carriers had 2.8 higher chance for SVR achievement than G allele carriers TG/GG (OR = 2.8, 95% CI = 1.4–5.6, P = 0.004). Younger age, male sex and low activity grading were significant predictors of SVR (P = 0.003, P = <0.001 and P < 0.001 respectively). High pretreatment AST levels and advanced liver fibrosis were negative predictors of SVR (P = 0.04 and P < 0.001 respectively).

Conclusion: IL28B genotype is a significant pre-treatment predictor of response to PEG-IFN/RBV in HCV infected Egyptian patients.

Keywords: Interleukin 28B; Genotype; Real time PCR; Interferon λ.

813. Impact of Serology and Molecular Methods on Improving the Microbiologic Diagnosis of Infective Endocarditis in Egypt

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Infection, 43: 523-529 (2015) IF: 2.618

Background Conventional diagnosis of infective endocarditis (IE) is based mainly on culture-dependent Methods that may fail because of antibiotic therapy or fastidious microorganisms. Objectives We aimed to evaluate the added values of serological and molecular Methods for diagnosis of infective endocarditis. Patients and Methods One hundred and fifty-six cases of suspected endocarditis were enrolled in the study. For each patient, three sets of blood culture were withdrawn and serum sample was collected for Brucella, Bartonella and Coxiella burnetii antibody testing. Galactomannan antigen was added if fungal endocarditis was suspected. Broad range PCR targeting bacterial and fungal pathogens were done on blood culture bottles followed by sequencing. Culture and molecular studies were done on excised valve tissue when available. Results One hundred and thirty-two cases were diagnosed as definite IE. Causative organisms were detected by blood cultures in 40 (30.3 %) of

cases. Blood culture-negative endocarditis (BCNE) represented 69.7 %. Of these cases, PCR followed by sequencing on blood and valvular tissue could diagnose five cases of Aspergillus flavus. Eleven patients with BCNE (8.3 %) were diagnosed as zoonotic endocarditis by serology and PCR including five cases of Brucella spp, four cases of Bartonella spp and two cases ofCoxiella burnetii. PCR detected three cases of Brucella spp and two cases of Bartonella spp, while cases of Coxiella burnetii were PCR negative. The Results of all diagnostic tools decreased the percentage of non-identified cases of BCNE from 69.7 to 49.2 %. Conclusion Our data underline the role of serologic and molecular tools for the diagnosis of blood culture-negative endocarditis.

Keywords: Blood culture-negative endocarditis; Brucella Spp; Broad Range PCR.

814. Plasma Circulating Cell-free Nuclear and Mitochondrial DNA as Potential Biomarkers in the Peripheral Blood of Breast Cancer Patients

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Asian Pac J Cancer Prev, 16(18): 8299-8305 (2015) IF: 2.514

Background: In Egypt, breast cancer is estimated to be the most common cancer among females. It is also a leading cause of cancer-related mortality. Use of circulating cell-free DNA (ccf-DNA) as non-invasive biomarkers is a promising tool for diagnosis and follow-up of breast cancer (BC) patients. Objective To assess the role of circulating cell free DNA (nuclear and mitochondrial) in diagnosing BC.

Materials and Methods: Multiplex real time PCR was used to detect the level of ccf nuclear and mitochondrial DNA in the peripheral blood of 50 breast cancer patients together with 30 patients with benign lesions and 20 healthy controls. Laboratory investigations, histopathological staging and receptor studies were carried out for the cancer group. Receiver operating characteristic curves were used to evaluate the performance of ccf-nDNA and mtDNA.

Results: The levels of both nDNA and mtDNA in the cancer group were significantly higher in comparison to the benign and the healthy control group. There was a statistically significant association between nDNA and mtDNA levels and well established prognostic parameters; namely, histological grade, tumour stage, lymph node status andhormonal receptor status.

Conclusions: Our data suggests that nuclear and mitochondrial ccf-DNA may be used as non-invasive biomarkers in BC.

Keywords: Breast cancer; Ccf nuclear DNA; CCF mitochondrial DNA diagnostic markers.

815. The Role of Ompk 35, Ompk 36 Porins, and Production of β-Lactamases on Imipenem Susceptibility in Klebsiella Pneumoniae Clinical Isolates, Cairo, Egypt

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Microbial Drug Resistance, 21: 577-580 (2015) IF: 2.49

Background: OmpK35 and OmpK36 are the major outer membrane porins of Klebsiella pneumoniae. We aimed to study the effect of combined porin loss and production of extended-spectrum β-lactamases (ESBLs) on imipenem susceptibility among K. pneumoniae clinical isolates.

Materials and Methods: This study included 91 suspected ESBL-producing K. pneumoniae clinical isolates, isolated from different patient specimens at the Cairo University hospital from January to June 2010. All isolates were subjected to genotypic analysis of the outer membrane protein gene expression using reverse transcription-PCR (RT-PCR) and analysis of OmpK35/36 of 38 isolates by sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS-PAGE).

Results: By RT-PCR, loss of Omp35 was detected in 78 (85.7%) isolates, loss of Omp36 was detected in 64 (70.32%), and loss of both porins was detected in 62 (68.1%). Out of 91 isolates, 45 (49.5%) were resistant to cefoxitin, and 17 (18.7%) were confirmed as derepressed AmpC producers. Omp35 was lost in all FOX-resistant isolates, whereas Omp36 was lost in 42 (93.3%) (p-value 0.002). The mean of ceftazidime inhibition zone diameter was significantly decreased among ESBL-producing isolates with loss of Omp35/36 (p-value 0.041 and 0.006), respectively. The mean of imipenem minimal inhibitory concentration (MIC) was markedly increased to 8.55μg/ml among AmpC-producing isolates with Omp35/36 loss, while the mean of imipenem MIC among the 66 confirmed ESBL producers was 0.32μg/ml.

Conclusion: Imipenem MIC was markedly increased among K. pneumoniae isolates showing AmpC production with loss of both porins OmpK35/36. Meanwhile, the association of porin OmpK35/36 loss with ESBL production was not a direct cause of resistance to imipenem.

Keywords: K. Pneumoniae, Omp35-Omp36-ESBL-imi resistance.

816. Sex Chromosome Mosaicism in the Gonads of DSD Patients: A Karyotype/ Phenotype Correlation

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Sexual Development, 9: 279-288 (2015) IF: 2.288

Sex chromosome mosaicism Results in a large clinical spectrum of disorders of sexual development (DSD). The percentage of 45,X cells in the developing gonad plays a major role in sex determination. However, few reports on the gonadal mosaic status have been published, and the phenotype is usually correlated with peripheral lymphocyte karyotypes, which makes the phenotype prediction imprecise. This study was conducted on 7 Egyptian DSD patients to demonstrate the effect of sex chromosome constitution of both blood lymphocytes and gonadal tissues on the phenotypic manifestations. Conventional cytogenetic and FISH analyses of blood lymphocytes were conducted, and laparoscopy with gonadal biopsy was performed for histopathologic examination and FISH analysis. Gonosomal mosaicism was detected in 3 patients who had a non-mosaic chromosome pattern in blood lymphocytes. Two patients showed the same type of sex chromosome mosaicism in both the blood and gonadal tissues but with different distributions. Two other patients revealed a non-mosaic pattern in both tissues. The present study elucidates the importance of examining sex chromosome mosaicism in gonadal tissues of DSD patients and highlights the critical role of 45,X mosaicism which can lead to serious effects during early gonadal organogenesis.

Keywords: Disorders of sexual development; FISH; Gonadal mosaicism; SRY; 45,X mosaicism.

817. Antimicrobial Stewardship to Optimize the use of Antimicrobials for Surgical Prophylaxis in Egypt: A Multicenter Pilot Intervention Study

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American Journal of Infection Control, 43: 0-0 (2015) IF: 2.206

Objective To measure the impact of an antimicrobial stewardship (AMS) program on the use of antibiotics for surgical prophylaxis at acute care hospitals in Egypt.
Methods: This was a before-and-after intervention study conducted in 5 tertiary, acute-care surgical hospitals. The baseline, intervention, and follow-up periods were 3, 6, and 3 months, respectively. The impact of the intervention was measured by preintervention and postintervention surveys for surgical patients with clean and clean-contaminated wounds. Information was collected on demographic characteristics and antibiotic use. The intervention focused mainly on educating surgical staff on the optimal timing and duration of antibiotics used for surgical prophylaxis. Only 3 hospitals identified a surgeon to audit antibiotic surgical prescriptions. The primary outcome measures were the percentages of surgical patients receiving optimal timing and duration of surgical prophylaxis.
Results: Data were collected for 745 patients before the intervention and for 558 patients after the intervention. The optimal timing of the first dose improved significantly in 3 hospitals, increasing from 6.7% to 38.7% (P <.01), from 2.6% to 15.2% (P <.01), and from 0% to 11% (P <.01). All hospitals showed a significant rise in the optimal duration of surgical prophylaxis, with an overall increase of 3%-28% (P < .01). Days of therapy per 1000 patient-days were decreased significantly in hospitals A, B, C, and D, with no change in hospital E.
Conclusions: An AMS program focusing on education supported by auditing and feedback can have a significant impact on optimizing antibiotic use in surgical prophylaxis practices.
Keywords: Antimicrobial stewardship; Preoperative antibiotic prophylaxis; Antibiotics in Egypt.

818. Birth Weight, Insulin Resistance, and Blood Pressure in Late Preterm Infants

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American Journal of Perinatology, 32: 865-872 (2015) IF: 1.905

Objectives: This study aims to compare insulin sensitivity, lipid profile, and blood pressure in late preterm infants born at appropriate for gestational age (AGA) and small for gestational age (SGA).
Study Design: We conducted a prospective, observational study on AGA and SGA late preterm infants. Blood pressure, fasting blood glucose, insulin, insulin-like growth factor 1 (IGF-1), insulin resistance, and lipid profile were measured on the 1st day and in the 2nd week of life.
Results: Results Overall 81 infants (41 AGA and 40 SGA) were included in the study. At the time of enrollment, there was no difference in blood pressure, insulin resistance, and lipid profile. At follow-up SGA patients had significantly decreased diastolic blood pressure (48 ± 11 mm Hg vs. 42 ± 11 mm Hg, p ¼ 0.04), and decreased IGF-1 (139 ng/mL [119–153] vs. 124 ng/mL [115–138], p ¼ 0.05). No linear association was found between the insulin resistance and either birth weight percentile, day of life, or average 1st week daily caloric intake.
Conclusion: As compared with AGA, SGA late preterm infants had lower diastolic blood pressure and lower IGF-1 during the 2nd week of life, but similar insulin resistance and lipid profile. We speculate that although metabolic derangements in SGA infants could have occurred at a much earlier age in fetal life, their manifestations may not be present in the immediate postnatal life.
Keywords: Glucose; SGA; Metabolic syndrome; Premature; Nutrition.

819. Association of Genetic Polymorphism of Pre-MicroRNA-146A rs2910164 and Serum High-Mobility Group Box 1 with Febrile Seizures in Egyptian Children

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Journal of Child Neurology, 30: 437-444 (2015) IF: 1.717

Interaction between immune-inflammatory process and genetic factors might be implicated in the pathogenesis of febrile seizures. Pre-microRNA (miR)-146a rs2910164 polymorphism is postulated to modulate expression of miR-146a whose anti-inflammatory role involves regulation of high-mobility group box 1. Our aim is to examine whether rs2910164 polymorphism influences serum high-mobility group box 1 levels and whether an association exists between both and febrile seizures. The study included 136 children, divided into 4 groups. Real-time polymerase chain reaction was used for detection of rs2910164 polymorphism and high-mobility group box 1 was measured using enzyme-linked immunosorbent assay. High-mobility group box 1 levels were higher in febrile seizure patients compared to the other groups. Rs2910164 polymorphism was not associated with increased risk of febrile seizures. Rs2910164 polymorphism might be accompanied by an upregulation of the proinflammatory process as it might be associated with an increase in high-mobility group box 1 and leukocytic count.
Keywords: MiRNA-146a; Nc_000005.10; High-mobility group box 1; Febrile convulsions.

820. Clinical and Quality Evaluation of Apheresis Vs Random-donor Platelet Concentrates Stored for 7 Days

E. Hussein

Transfusion Medicine, 1: 20-26 (2015) IF: 1.647

Background and Objectives: The clinical efficacy of different types of platelets remains under debate. We conducted a pilot study to prospectively evaluate the impact of subsequent storage on the in vitro quality and post-transfusion outcome of apheresis prepared platelets (APCs) vs random donor platelets (RDPs).

Materials and Methods: We studied 30 units of APCs, and 30units of RDPs. We performed assays on days 1, 3, 5 and 7, evaluating ADP aggregation, platelet count and pH. Fifteen thrombocytopenic patients with haematologic conditions were evaluated. Each patient received prophylactic transfusions of both components, and their post-transfusion platelet increments were compared. Twenty-five transfusions were apheresis prepared, and 35 transfusions were received as RDPs. None of the RDPs were leukoreduced.
Results: The median platelet counts for APCs on days 1, 3, 5 and 7 were; 2070, 1990, 1680 and 1240 × 10^3 μL^{-1}, respectively, and were; 1290, 850, 499 and 284 × 10^3 μL^{-1}, respectively for RDPs. The pH of all units was more than 6·2. Both groups demonstrated a significant decrease of ADP aggregation after 3 days of storage (P <0·05). However, APCs provided satisfactory increments for 90·9% of transfusions. On the sixth and seventh days of storage, APCs provided significantly higher platelet increments (18·7 × 10^3 μL^{-1}) compared with RDPs (3·20 × 10^3 μL^{-1}) (P <0·05). Significantly longer transfusion intervals were also achieved with APCs (P <0·05).
Conclusion: Although other variables may have confounded the Results, subsequent storage of APCs appeared to provide higher increments with longer intervals of transfusion compared with RDPs. Future prospective studies are needed, adjusting for other possible confounding variables.
Keywords: Apheresis platelets; Platelet aggregation; Platelet increments; Random donor platelets.

821. The Role of MDR-Acinetobacter Baumannii in Orthopedic Surgical Site Infections

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Surgical Infections, 16: 518-522 (2015) IF: 1.448

Background: Gram-positive microorganisms were the main causative organisms of orthopedic surgical site infections (SSI); however the rising incidence of multiple drug resistant Acinetobacter baumannii (MDR-AB) infections in orthopedic operations causes a great concern because of their limited array of therapeutic options. Objective Our objective was to remark the changing microbiology in orthopedic SSI and to evaluate the MDR CHROMagar Acinetobacter media for screening of MDR-AB.
Methods: Aspirated pus samples were collected from infected wounds of 100 patients in the orthopedics unit of El-Helal Hospital, samples were cultured on conventional media and MDR CHROMagar Acinetobacter media, the reveled MDR-AB colonies were subjected to polymerase chain reaction (PCR) to detect blaOXA-51 like gene.
Results: Out of 100 infected wounds SSI cases represented 90/100 (90%) according to CDC 2013 definitions. Staphylococcus aureus was the dominant organism 40/90 (44.4%) (P value 0.038), all S. aureus isolates were methicillin-resistant Staphylococcus aureus (MRSA), followed by Klebsiella pneumoniae 22/90 (24.44%) and Acinetobacter 15/90 (16.67%). Implant was highly associated with SSI cases 80/90 (89%). Also, prolonged hospital stay >7d was significantly associated with SSI 69/90 (77%) (p=0.001).
Conclusion: Staphylococcus aureus was the main causative organism of orthopedic SSI (44.4%), whereas A. baumannii represented only (16.67%) of the causative organisms. MDR Acinetobacter CHROMagar reduced the turnaround time for screening of MDR-AB.
Keywords: MDR acinetobacter baumannii; Orthopedic SSI; MDR chromagaracinetobacter.

822. Inducible Nitric Oxide Synthase Promoter Polymorphism: A Molecular Susceptibility Marker for Vitiligo in Egyptians

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International Journal of Dermatology, 54(6): 675-679 (2015) IF: 1.312

Background: Vitiligo is a depigmentary disease characterized by loss of melanocytes from the skin and mucous membranes. The pathomechanism of vitiligo is still obscure. Inducible nitric oxide synthase (iNOS) produces very large amounts of nitric oxide (NO). Promotor polymorphisms within iNOS gene have been reported to be associated with overproduction of NO, which may induce melanocyte destruction.
Aim: The current study aimed at investigating the possible association between iNOS gene polymorphism (-954 G/C and Ex 16+14 C/T) and susceptibility to non-segmental vitiligo in a cohort of Egyptians.
Methods: The study was conducted on 200 participants: 100 patients with vitiligo and 100 aged matched healthy controls. Polymerase chain reaction using restriction fragment length polymorphism method (PCR-RFLP) was used to identify the genotypes.
Results: Our Results showed that iNOS -954 G/C heteromutant genotype (GC) was associated with increased risk of vitiligo (OR = 3.35, 95% CI = 1.77-6.33), and the risk increased when confined to females (OR = 7.4, 95% CI = 2.80-19.40). iNOS Ex 16 + 14 C/T heteromutant genotype (CT) conferred two folds increased risk of vitiligo (OR = 2.47, 95% CI = 1.39-4.37). Furthermore, the risk of vitiligo increased when the heteromutant genotype of iNOS -954 G/C (GC) was co-inherited with the wild genotype of iNOS Ex16+14 C/T (CC) (OR = 23.2, 95% CI = 3.04-177.21).
Conclusions: Inducible nitric oxide synthase -954 G/C and Ex 16+14 C/T might be considered as genetic susceptibility markers for non-segmental vitiligo among Egyptians.
Keywords: iNOS; Polymorphism; Vitiligo; Egypt.

823. Study of Prognostic Significance of Marrow Angiogenesis Assessment in Patients with De Novo Acute Leukemia

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Hematology, 20: 504-510 (2015) IF: 1.253

Background: Angiogenesis is the highly ordered formation of new blood vessels from pre-existing vessels. It is seen throughout growth, in wound healing, menses, and is important in cancer, where pro- and antiangiogenic signals can be released by cancer cells, endothelial cells, stromal cells, blood, and the extracellular matrix. Aim of the study is to use standardized method for counting blood vessels to verify the significance and prognostic

value of assessing marrow angiogenesis at diagnosis of de novo acute leukemia.
Subjects and Methods: The study included 70 newly diagnosed acute leukemia cases and a control group composed of 35 bone marrow biopsy sections obtained from breast cancer patients. Examination of CD34 immunohistochemically stained sections for the assessment of marrow angiogenesis by quantification of its microvessel density (MVD).
Results: MVD was significantly increased in acute leukemia patients in comparison to control group (P-value <0.001). Increased MVD was associated with unfavorable outcome.
Conclusion: The study demonstrated an evidence of increased angiogenesis in acute leukemia detected by high bone marrow MVD which may play a significant role in leukemic process. Understanding its role may help in designing new therapeutic strategies for acute leukemia.
Keywords: Acute leukemia; Angiogenesis; Microvessel density; Prognosis; Clinical outcome.

824. Flow Cytometric Assessment of Endothelial and Platelet Microparticles in Preeclampsia and their Relation to Disease Severity and Doppler Parameters

Mahmoud Salem, Sahar Kamal, Walid El Sherbiny and Asmaa A. Abdel Aal

Hematology, 20: 154-159 (2015) IF: 1.253

Objective: Platelet (P) and endothelial (E) microparticle (MP) levels increase in preeclampsia. However, their relation to the severity of the disease needs to be clarified. The objectives of this study were to compare the levels of EMP and PMP in severe and mild preeclampsia to healthy gravidas to find possible correlations to severity of the disease, Doppler changes, and complications.
Methods: A comparative prospective clinical trial (Canadian Task Force II-1) was conducted on 135 pregnant women divided into three groups: 35 women with severe preeclampsia (group 1), 40 with mild preeclampsia (group 2), and 60 healthy gravids (group 3). Assessment of EMP and PMP was done by flow cytometry using anti-CD31 and anti-CD42b antibodies.
Results: Expression of CD31 and CD42b (EMPs) was higher in group 1 compared to groups 2 and 3 with $P < 0.001$, while expression of CD42b alone (PMPs) did not show a statistically significant difference ($P = 0.957$). EMPs were correlated positively to umbilical and middle cerebral artery resistance index. There was a significant negative correlation between platelet count and EMPs. Also, EMPs were correlated positively to aspartate transferase and bilirubin levels and were significantly higher with neonatal death.
Discussion: The present study revealed a significant association between plasma levels of EMPs and severity of preeclampsia together with poor neonatal outcome as regards birth weight and percent of neonatal death. So, EMPs assay could be a good predictor of maternal and fetal outcomes and in cases with preeclampsia.
Keywords: Preeclampsia; Endothelial microparticles; Umbilical doppler.

825. Mediterranean Fever Gene Mutations: Correlation with Cytotoxic T-lymphocyte-associated Antigen 4 Gene Polymorphism

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Microbiology and Immunology, 59: 160-165 (2015) IF: 1.242

Mutations in the Mediterranean fever (MEFV) gene lead to familial Mediterranean fever (FMF), a pro-inflammatory state characterized by outbursts of inflammatory cytokines. The aims of this study were to identify the common mutations of MEFV gene in Egyptian patients with FMF, to study cytotoxic T lymphocyte associated antigen 4 (CTLA-4) gene polymorphism and to evaluate correlations between CTLA4–1661 polymorphisms and MEFV mutations and clinical symptoms. Four hundred and twenty-four patients with clinical pictures suspicious of FMF were enrolled in this study. Mutations in MEFV gene were confirmed by reversed hybridization. Patients with homozygous and compound heterozygous mutations and 120 healthy controls were investigated for polymorphism of 1661 CTLA4 gene and the findings correlated with disease incidence and clinical symptoms of the disease. Ninety-seven patients had single heterozygous mutations and 78 had compound heterozygous or homozygous MEFV gene mutations.M694I/V726A was the most common genotype (14.1%), followed by homozygous M694I. There was no statistically significant difference between patients and controls in incidence of1661 A/G single nucleotide polymorphism CTLA4 (P¼0.189), nor any significant correlation with any of the clinical symptoms of FMF and MEFV gene mutations.
Keywords: Adaptive immune response; CTLA4; Gene polymorphism.

826. Chondrogenic Differentiation of Human Umbilical Cord Blood-derived Mesenchymal Stem Cells in Vitro

Azza Mostafa Ibrahim, Nesrine Mohamed Elgharabawi, Manal Mohamed Makhlouf and Omnia yahia Ibrahim

Microscopy Research and Technique, 78: 667-675 (2015) IF: 1.154

Different therapeutic techniques have been developed for regeneration of articular cartilage injuries, but none has provided an optimal solution to their treatment. Human umbilical cord blood-mesenchymal Stem Cells (HUCB-MSCs) have been considered as promising alternative cell source for cartilage repair. Objectives: Examining the success rate of MSCs isolation from HUCB as well as chondrogenic differentiation potential of HUCB-MSCs in vitro.
Materials and Methods: 32 UCB samples were collected, in addition to 5 bone marrow (BM) and 5 peripheral blood (PB) samples, taken as reference controls. Samples were used for mononuclear cells isolation from which MSCs were expanded under complete aseptic conditions, were verified morphologically and through the presence of CD44 and CD105, and absence of CD34.
Results: Success rate of UCB-MSCs isolation was (25%), a rate that was lower than those of PB (40%) and BM (80%). Accordingly, certain input parameters have been recommended for successful MSCs isolation from UCB. On selecting samples in which recommended parameters were fulfilled, success rate was

increased to 72%. This was together with providing optimal experiment conditions; mainly type of expansion medium, success rate reached 80%. Then, successfully expanded MSCs were subjected to chondrogenic differentiation by culturing in pelleted micromass system in presence of transforming growth factor beta-1 and chondrogenic medium devoid of fetal bovine serum to evaluate their ability to undergo chondrogenesis. Differentiation was verified microscopically using special stains, and proved by reverse transcriptase-polymerase chain reaction for expression of aggrecan and collagen II genes. In Conclusion, in vitro differentiation into chondrocytes is possible from HUCB-MSCs.

Keywords: MSCs; HUCB; Chondrogenic differentiation; RT-PCR.

827. Detection of Bacterial Biofilms in Chronic Pharyngitis Resistant to Medical Treatment

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Annals of Otology, Rhinology and Laryngology, 124: 567-571 (2015) IF: 1.094

Objective: To evaluate the role played by adenoids as a reservoir for infection in children assigned for adenoidectomy. Methodology: The study included 35 children with adenoid hypertrophy. All patients underwent clinical examination and adenoidectomy, adenotonsillectomy, or myringotomy with insertion of aeration tube according to indications. Surgical specimens were processed for conventional bacterial culture examination and to assay for biofilm formation. The obtained adherence values using spectrophotometer at 595 nm (OD595) was used to classify isolates according to its biofilm forming capacity.

Results: We did adenotonsillectomy and myringotomy with insertion of aeration tube in 5 patients having adenotonsillitis with otitis media with effusion. We did adenotonsillectomy in 12 patients having adenotonsillitis and adenoidectomy in 18 patients having adenoid hypertrophy. Thirty-one surgical specimens showed bacterial growth on conventional media, while 4 specimens failed to give growth. The predominant organism was H influenzae then Staph aureus and Strept pneumoniae. Thirty-two specimens showed biofilm forming capacity (BFC) of variable extent, while others showed no BFC.

Conclusion: Adenoids act as a bacterial reservoir secondary to bacterial biofilm formation so could induce chronicity and initiate development of complications. Determination of BFC using the proposed protocol is feasible, inexpensive, and available and spares the need for sophisticated instruments or approaches.

Keywords: Adenoid; Bacterial growth; Otitis media; Biofilm forming capacity; H Influenzae.

828. Rapid Identification of Nosocomial Acinetobacter Baumannii Isolated from A Surgical Intensive Care Unit in Egypt

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Annals of Saudi Medicine, 35: 440-444 (2015) IF: 0.486

Background: The rapid and accurate identification of nosocomial clinical isolates is the first essential step in investigating nosocomial outbreaks. We aimed to evaluate the performance of MDR-CHROMagar Acinetobacter versus matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) in rapid detection of nosocomial Acinetobacter baumannii isolated from patients admitted to the surgical intensive care unit (SICU) of Kasr Alainy- Cairo University.

Methods: Over a period of 9 months from January 2014 until September 2014, 234 samples were collected. All samples were directly cultured on MDR-CHROMagar Acinetobacter media. MALDI-TOF MS was used to identify all non-lactose fermenting colonies on conventional media. Confirmation of species identification was done by detecting the blaOXA-51 like gene by PCR.

Results: Statistical evaluation of MDR-CHROMagar Acinetobacter against blaOXA-51 like PCR as the reference method for identification of A baumannii showed a sensitivity of 100% (95% confidence interval [CI]: 93.36% to 100%), specificity 98.8% (95% confidence interval [CI]: 96.04% to 99.68%), positive predictive value 96.4% (95%CI: 86.61% to 99.37%), negative predictive value 100% (95% CI: 97.36% to 100%). The statistical evaluation of MALDI-TOF against blaOXA-51 PCR was 100% concordance.

Conclusion: MALDI-TOF MS was more specific than CHROMagar in identifying Acinetobacter spp and allowed further identification of non-A Baumannii species such as A hemolyticus and A nosocomialis, which are less common Acinetobacter spp involved in hospital-acquired infections.

Keywords: MALDI-TOF; MDR-acinetobacter baumannii; MDR-CHROMagar acinetobacter; BlaOXA-51Like gene.

829. Role of Prolactin as A Cardiovascular Risk in Type 2 Diabetes Mellitus Patients: A Case-Control Study in Egypt

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International Journal of Diabetes in Developing Countries, 35: 565-569 (2015) IF: 0.343

Prolactin is a recognized platelet co-stimulator due to enhancement of ADP-induced platelet aggregation, and hence participates in the atherosclerotic process. Studies had shown that human adipose tissue produces PRL as well as expresses the PRL receptor (PRLR), which highlights a previously unappreciated action of PRL as a cytokine involved in adipose tissue function. The aim of our study was to asses whether prolactin level is associated with the presence of cardiovascular risk in patients with acute myocardial infarction (AMI) and patients with type 2 diabetes mellitus (DM). This case-control study was conducted on 89 adult males (ages 40–60 years) divided into four groups: 25 diabetics with AMI patients (group 1), 24 non-diabetics with AMI patients (group 2), 20 diabetics but not known to have AMI (group 3), and 20 healthy controls (group 4), in whom serum prolactin was determined using commercially available ELISA kits. Prolactin levels increased along with increased serum troponin; group 1 had the highest level of serum prolactin (10.6 ± 6 ng/ml) in comparison to groups 2 (8.8 ± 4 ng/ml), 3 (6.9 ± 2 ng/ml), and 4 (5 ± 2 ng/ml). According to the cutoff of the receiver operating characteristic (ROC) curve, prolactin is considered better positive than negative marker in cases of AMI.

Hyperprolactinemia may be associated with increased risk of atherosclerotic process and hence occurrence of AMI, as one of the serious macrovascular complications in diabetics. Elevated prolactin levels detected in diabetics having AMI supports the recent trend of using dopamine agonists, e.g., bromocriptine in treatment of type 2 DM especially those who had a prior ischemic event. Also, increased prolactin being associated with increased troponin level in AMI patients may be considered a prognostic factor correlated with the extent of myocardial damage.

Keywords: Prolactin; Acute myocardial infarction; Atherosclerosis; Diabetes.

830. Impact of Circulating Erythrocyte-derived Microparticles on Coagulation Activation in Sickle Cell Disease

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Comparative Clinical Pathology, 24: 1123-1128 (2015)

Sickle cell disease (SCD) is characterized by a hypercoagulable state as a result of multiple factors, including chronic hemolysis and the presence of circulating cell-derived microparticles (MPs). The aim of this work was to study the impact of erythrocyte-derived circulating microparticles (glycophorin A; CD235 positive) on coagulation activation and their probable role in contribution to painful crisis in SCD patients. Peripheral blood samples of 25 SCD patients during painful crisis and in steady state were studied for the presence of erythrocyte-derived MPs using flow cytometry. Estimation of D-dimer level, as a marker of coagulation activation, was done using semiquantitative assay. Thirty-six healthy individuals, age- and sex-matched, were included as a control group. Erythrocyte-derived MPs level was significantly higher in SCD patients during painful crisis compared to control group ($p=0.02$), but no statistically significant difference was found between erythrocyte-derived MPs level in SCD patients in steady state compared to controls or to SCD patients during painful crisis ($p=0.3$ and 0.49, respectively). D-dimer level was higher in SCD patients both during crisis and in steady state compared to controls ($p<0.001$). SCD during painful crisis is associated with increased levels of erythrocytederived MPs and D-dimer which may contribute to the hypercoagulable state observed in such group of patients.

Keywords: Coagulation activation; D-dimer; Erythrocyte-derived microparticles; Sickle cell disease.

831. Bone Marrow Examination in Egyptian Patients with Bicytopenia/Pancytopenia

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Comparative Clinical Pathology, 24: 915-919 (2015)

The incidences of diseases that cause peripheral blood (PB) cytopenias differ between countries according to the prevalent health problems. This study was carried out in order to identify bone marrow findings and underlying disorders in adult Egyptian patients with PB cytopenias (bicytopenia and pancytopenia).

The study involved patients newly diagnosed as having PB cytopenias over a period of 1 year. Clinical and hematological parameters of patients were recorded. Bone marrow specimens were examined. Sixty-two pancytopenia and 50 bicytopenia patients were included in the study. The most common cause of pancytopenia was clonal hematopoietic disorders (34 %), hypersplenism (27 %), and aplastic anemia (21 %).

The most common cause of bicytopenia was clonal hematopoietic disorders (34 %), ITP (24 %), and hypersplenism (18 %). Lymphoid neoplasms were the most common and account for 57 % of clonal pancytopenia patients and 65 % of clonal bicytopenia patients. Most hypersplenism patients (86 %) had history of hepatitis C viral infection. Our Results show that, in Egypt, clonal hematopoietic disorders, hypersplenism due to chronic liver disease, ITP, and aplastic anemia are the common causes of PB cytopenias. In our setting, causes underlying bicytopenia are as important as those of pancytopenia.

Keywords: Bone marrow examination; Pancytopenia; Bicytopenia; Hypersplenism; Aplastic anemia; HCV; Egypt.

Dept. of Clinical Oncology and Nuclear Medicine

832. TIF1γ Interferes with TGFβ1/SMAD4 Signaling to Promote Poor Outcome in Operable Breast Cancer Patients

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Bmc Cancer, 15: 453-0 (2015) IF: 3.362

Background: The Transforming growth factor β (TGFβ) signaling has a paradoxical role in cancer development and outcome. Besides, the prognostic significance of the TGFβ1, SMAD4 in breast cancer patients is an area of many contradictions. The transcriptional intermediary factor 1γ (TIF1γ) is thought to interact with the TGFβ/SMAD signaling through different mechanisms. Our study aims to define the prognostic significance of TGFβ1, SMAD4 and TIF1γ expression in breast cancer patients and to detect possible interactions among those markers that might affect the outcome.

Methods: Immunohistochemistry was performed on tissue microarray (TMA) blocks prepared from samples of 248 operable breast cancer patients who presented at Centre Léon Bérard (CLB) between 1998 and 2001. The intensity and the percentage of stained tumor cells were integrated into a single score (0–6) and a cutoff was defined for high or low expression for each marker. Correlation was done between TGFβ1, SMAD4 and TIF1γ expression with the clinico-pathologic parameters using Pearson's chi-square test. Kaplan-Meier method was used to estimate distant metastasis free survival (DMFS), disease free survival (DFS) and overall survival (OS) and the difference between the groups was evaluated with log-rank test.

Results: 223 cases were assessable for TIF1γ, 204 for TGFβ1 and 173 for SMAD4. Median age at diagnosis was 55.8 years (range: 27 to 89 years). Tumors were larger than 20 mm in 49.2 % and 45.2 % had axillary lymph node (LN) metastasis (N1a to N3). 19.4 % of the patients had SBR grade I tumors, 46.8 % grade II tumors and 33.9 % grade III tumors. ER was positive in 85.4 %, PR in 75.5 % and Her2-neu was over-expressed in 10 % of the cases.

Nuclear TIF1γ, cytoplasmic TGFβ1, nuclear and cytoplasmic SMAD4 stainings were high in 35.9 %, 30.4 %, 27.7 % and 52.6 % respectively. TIF1γ expression was associated with younger age ($p = 0.006$), higher SBR grade ($p < 0.001$), more ER negativity ($p = 0.035$), and tumors larger than 2 cm ($p = 0.081$),

while TGFβ1 was not associated with any of the traditional prognostic factors.
TGFβ1 expression in tumor cells was a marker of poor prognosis regarding DMFS (HR = 2.28; 95 % CI: 1.4 to 3.8; p = 0.002), DFS (HR = 2.00; 95 % CI: 1.25 to 3.5; p = 0.005) and OS (HR = 1.89; 95 % CI: 1.04 to 3.43; p = 0.037). TIF1γ expression carried a tendency towards poorer DMFS (p = 0.091), DFS (p = 0.143) and OS (p = 0.091).
In the multivariate analysis TGFβ1 remained an independent predictor of shorter DMFS, DFS and OS. Moreover, the prognostic significance of TGFβ1 was more obvious in the TIF1γ high patient subgroup than in the patients with TIF1γ low expression. The subgroup expressing both markers had the worst DMFS (HR = 3.2; 95 % CI: 1.7 to 5.9; p < 0.0001), DFS (HR = 3.02; 95 % CI: 1.6 to 5.6; p < 0.0001) and OS (HR = 2.7; 95 % CI: 1.4 to 5.4; p = 0.005).
Conclusion: There is a crosstalk between the TIF1γ and the TGFβ1/SMAD4 signaling that deteriorates the outcome of operable breast cancer patients and when combined together they can serve as an effective prognostic tool for those patients.
Keywords: Breast cancer; TIF1γ; TGF β1.

833. Evaluation of Circulating ADH and MIC-1 as Diagnostic Markers in Egyptian Patients with Pancreatic Cancer

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Pancreatology, 15: 34-39 (2015) IF: 2.837

Background Despite the incidence rate of pancreatic cancer (PC) is uncommon in developing countries, it is considered as one of the most lethal disease. Improving patients' survival requires diagnosis of the disease at early stage.
Therefore, it is imperative to identify more specific and sensitive marker(s) to be used for early detection of PC. Objectives Our aim is to evaluate the potential role of circulating ADH and MIC-1 to be used as diagnostic markers in Egyptian patients and assess their value either alone or combined with CA19-9 in early detection of PC.
Methods Alcohol dehydrogenase (ADH), macrophage inhibitory cytokine (MIC-1) and CA19-9 were measured by ELISA in serum procured from PC patients (n = 50) versus normal subjects (n = 20). Results Our Results demonstrate that the circulating levels of ADH, MIC-1 and CA19-9 in blood of PC were significantly higher than in healthy controls (HCs) (p < 0.001). The highest marker sensitivity observed at early stage was MIC-1 (90%) and specificity was ADH (83%). The level of all three markers was elevated significantly in early stage of PC in comparison to HCs.
The addition of ADH and MIC-1 to CA19-9 significantly improved the efficacy of diagnosis (p = 0.023). Conclusion Our data demonstrate that not only the combination of ADH and MIC-1 to CA19-9 can be used in early detection of PC but also can improve the overall quality of diagnosis of this lethal disease.
Keywords: Pancreatic cancer; Diagnostic markers; ADH; MIC-1, CA19-9; Specificity and sensitivity.

834. Impact of Bilateral Breast Cancer on Prognosis: Synchronous Versus Metachronous Tumors

Noha Y Ibrahim, Mahmoud Y Sroor and Dalia O Darwish

Asian Pacific Journal of Cancer Prevention, 16(3): 1007-1010 (2015) IF: 2.514

Background: The clinical significance of bilateral breast cancer is unclear and its influence on prognosis is controversial. **Materials and Methods**: Between 2005 and 2009 we identified 110 cases of bilateral breast cancer (BBC) ; 49 patients had synchronous (duration between the occurrence of carcinoma in both breasts was less than 12 months) and 61 had metachronous (duration was more than one year with no ipsilateral local recurrence). We compared the patient characteristics including age, menopausal status, clinical stage, tumor size, histological classification, lymph node status, and hormone receptor and Her-2 status. We also compared the treatment given and overall and disease free survival (DFS) of both groups.
Results: Synchronous cases tend to present more aggressively than metachronous cases and age at first presentation adversely affects survival. The 5 year overall survival was 78.7% for metachronous and 60% for synchronous. Patients with positive hormonal status had better five year disease free survival in metachronous compared to synchronous cases, at 76% and 63%, respectively. Age at first presentation >45years had better DFS (65%) compared to those with age =45 years (52%) at 5 years follow up.
Conclusions: Patients with synchronous breast cancer may have worse prognosis. Young age and hormone receptor negative were risk factors in our study. Close follow up and early detection of contralateral breast cancer is mandatory.
Keywords: Bilateral breast cancer; Synchronous; Metachronous; Survival; Prognosis.

835. Taxane-based Regimens as Adjuvant Treatment for Breast Cancer: A Retrospective Study in Egyptian Cancer Patients

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Asian Pacific Journal of Cancer Prevention, 16(1): 65-69 (2015) IF: 2.514

Background: To evaluate the impact of adding taxanes to anthracycline-based regimens in the adjuvant setting in ocalized young female breast cancer patients on the overall survival (OS) and the disease free survival (DFS).
Materials and Methods: This retrospective study included all female breast cancer patients who were candidates for adjuvant chemotherapy presenting to Kasr Al Ainy centre of clinical oncology and Cairo oncology centre (Cairo Cure) in the period from January 2005 till December 2010.
Results: Our study included 865 patients, 732 of whom received anthracycline based regimens and 133 taxane based regimens. The mean age of patients was 39 years. After a median follow up of 50 months the median DFS was 48.4 months. Survival analysis indicated that the tumor size (>5cm vs. <5cm) p=0.001), nodal involvement (Yes vs. No) p=0.0001) and pathology (invasive lobular vs. ductal) p=0.048) affected DFS. As regards hormonal status, ER, PR and HER 2neu positive patients had longer DFS

(p=0.001, 0.003, 0.106). On multivariate analysis DFS was affected by tumor size and lymph node involvement (p=0.014, 0.007). Subgroup analysis showed improvement in arms treated with taxanes in terms of DFS with positive Her2neu, ER and PR, but this was not statistically significant.
Conclusions: Adding adjuvant taxanes to anthracyclines is beneficial for treatment of localized breast cancer among all subgroups, especially higher risk groups .The type of adjuvant chemotherapy regimens and tumor characteristics have direct effects on DFS.
Keywords: Breast cancer; Egypt; Adjuvant chemotherapy; Taxanes; Her2neu; Hormonal status.

836. Efficacy and Toxicity of Sunitinib in Metastatic Renal Cell Carcinoma Patients in Egypt

Wael Abdelgawad Edesa and Raafat Ragaey Abdelmalek

Asian Pacific Journal of Cancer Prevention, 16: 1971-1976 (2015) IF: 2.514

Background: To evaluate our Results in terms of response, survival and toxicity profile of sunitinib among Egyptian patients with metastatic renal cell carcinoma.
Materials and Methods: Between January 2010 and December 2013, 44 patients with metastatic renal cell carcinoma who received sunitinib at an oncology center of Cairo university hospitals were enrolled in this retrospective analysis.
Results: The median age of the patients was 53 years, 22 (50%) having localized disease at presentation ,while the remaining half of the patients presented with metastasis. At a median follow up of 19 months, 9 (21%) patients achieved partial remission, while disease was reported stable in 20 cases (45%) and progressive in 7 (16%), 4 (9%) being lost to follow up, and 4 (9%) had discontinued therapy due to toxicity. The median overall survival was 23 months (95%CI 15.2 - 30.9), while progression free survival was 12 months (95%CI 11.6 - 12.3). The most commonly reported non hematological grade 3 adverse events included mucositis (15.9%), hand-foot syndrome (13.6%), and fatigue (9%), while the predominant grade 3 or 4 laboratory abnormalities were neutropenia (6.8%), followed by anemia in 4.5% of patients.
Conclusions: Our efficacy data were comparable to the published literature in terms of progression free survival and overall survival , while toxicity profile is different from Asian and western countries. However, sunitinib adverse events were manageable and tolerable in most of our Egyptian patients
Keywords: Renal cell carcinoma; Sunitinib; Toxicity; Efficacy; Egyptian cases.

837. The Added Value of PET/Ce-CT/DW-MRI Fusion in Assessment of Hepatic Focal Lesions: Pet/Ce-Ct/Dw-Mri Fusion in Hepatic Focal Lesion

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Nuclear Medicine and Biology, 42: 637-642 (2015) IF: 2.412

Introduction: The liver hosts a variety of benign and malignant tumors. Accurate diagnosis can be challenging in certain cases, especially in patients with a history of malignancy or in those with underlying liver pathology, such as cirrhosis.
Objectives: To evaluate the added clinical value of multi-modality liver imaging utilizing PET/Ce-CT/DW-MRI for characterization of hepatic focal lesions (HFL) and compare it with each diagnostic modality when interpreted alone.
Methods: The study included 35 patients with HFL. They were 7 females & 28 males; their age ranged from 41 to 78years, all patients underwent PET/Ce-CT and DW-MRI scans. Ce-CT, PET and DW-MR images were reviewed independently, and then combined PET/Ce-CT, PET/DW-MRI and PET/Ce-CT/DW-MRI scans were analyzed. The Results were correlated with histopathology or clinical/imaging follow-up.
Results: The 35 patients had 98 focal lesions. Fifty-three lesions were finally diagnosed as primary hepatocellular carcinoma, 18 lesions were metastases, 7 lesions were lymphoma and 20 lesions were benign. On a patient based analysis; the sensitivity, specificity, PPV, NPV and accuracy were 100%, 67%, 94%, 100% and 94% for PET/Ce-CT compared to 97%, 83%, 97%, 83% and 94 % for DW-MRI, respectively. Combined PET/Ce-CT/DW-MR scans raise those parameters up to 100%. On a lesion based analysis; the sensitivity, specificity, PPV, NPV and accuracy were 94%, 75%, 94%, 75%, 90% for PET/Ce-CT compared to 94%, 95%, 99%, 97% and 94 % for DW-MRI, respectively. All these parameters were 100 % with PET/Ce-CT/DW-MRI.
Conclusions: The addition of DW-MRI to PET/Ce-CT is valuable in the characterization of hepatic focal lesions.
Keywords: Hepatic focal lesions; Magnetic resonance imaging; Positron emission computed tomography/computed tomography; Magnetic resonance imaging.

838. Gestational Trophoblastic Neoplasia: Treatment Outcomes from A Single Institutional Experience

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Clinical and Translational Oncology, 17: 409-415 (2015) IF: 2.007

Purpose To report the outcomes of gestational trophoblastic neoplasia (GTN) at a single institution and to determine the factors affecting response to chemotherapy and survival. Methods/Patients From 1979–2010, we retrospectively reviewed the data of 221 patients treated at our center. GTN Patients were assigned to low-risk (score B6) or high-risk (score C7) based on the WHO risk factor scoring system. Overall survival (OS) probabilities were estimated using Kaplan–Meier method. Logistic regression was applied to study the impact of different factors on the response to initial therapy. Results Patients' OS rate was 97 %. Median age at diagnosis was 37 year. 131 (59 %) patients had low-risk and 88 (40 %) cases had high-risk GTN. Complete remission rates to initial chemotherapy in low-risk group were 53 % and 87 % for single-agent methotrexate or dactinomycin, respectively. In high-risk group, 94 % achieved complete remission to initial chemotherapy with etoposide, methotrexate, dactinomycin, cyclophosphamide, and vincristine (EMA-CO). Etoposide, cisplatin, and dactinomycin as primary therapy in high-risk patients was successful in 70 %, while bleomycin, etoposide, and cisplatin (BEP) was successful in 53 % of cases. Salvage chemotherapy, surgical intervention or radiation therapy resulted in overall complete remission of 90 % in low-risk and 73 % in high-risk groups. Factors associated with resistance

to initial chemotherapy were advanced-stage III/ IV (p = 0.005), metastatic site other than lung or vagina (p = 0.005) and high-risk prognostic score (p = 0.05). OS was significantly influenced by the type of antecedent pregnancy (molar 98 % vs. others 93 %; p = 0.04), FIGO stage (I, II 100 % vs. III, IV 94 %; p = 0.02), score (lowrisk 100 % vs. high-risk 92 %; p = 0.01), and site of metastasis (lung/vagina 98 % vs. others 85 %; p = 0.002). Conclusions GTNs have excellent prognosis if properly treated at experienced centers. Single-agent dactinomycin seems more effective for low-risk GTN. EMA-CO remains the preferred primary treatment regimen for high-risk group. The excellent outcome reflects the success of salvage therapy.

Keywords: Gestational trophoblastic disease; Chemotherapy, treatment; Survival; Clinical outcomes; Salvage therapy.

839. Comparative Assessment of Gastric Emptying in Obese Patients Before and after Laparoscopic Sleeve Gastrectomy Using Radionuclide Scintigraphy

Ahmed A. Kandeel, Mohamed D. Sarhan, Tarek Hegazy, Moustafa M. Mahmoud and Mohamed H. Ali

Nuclear Medicine Communications, 36: 854-862 (2015) IF: 1.669

Radionuclide scintigraphy provides a standard physiologic evaluation of gastric emptying (GE) after laparoscopic sleeve gastrectomy (LSG). This operation can be associated with motor gastric dysfunction and abnormal GE. The aim of this study was to evaluate the short-term effect of LSG on GE quantitative indices for liquids and solids compared with preoperative results. Forty obese patients were divided into two equal groups, the liquid and solid groups. ^{99m}Tc–sulfur colloid GE scintigraphy was performed on all patients submitted to LSG before and after surgery (1–4 weeks for liquids and 4–6 weeks for solids). The quantitative indices included half emptying time ($T_{1/2}$) and percentage gastric retention at 15, 30, and 60 min for liquids and at 30, 60, 90, and 120 min for solids. A modified technique was used to label a boiled egg in order to be tolerated by the patients. $T_{1/2}$ was significantly enhanced after LSG compared with baseline (25.3±4.4 vs. 11.8±3.0 min for liquids and 74.9±7.1 vs. 28.4±8.3 min for solids, respectively, P<0.001). The percentage of gastric retention in operated patients was significantly less than that at baseline for liquids at 15, 30, and 60 min (33.9±5.6, 17.7±3.9, and 7.5±2.8% vs. 69.4±10.5, 55.6±14.95, and 26.1±4.7%, respectively, P<0.001), as well as for solids at 30, 60, 90, and 120 min (42.0±11.1, 20.8±6.1, 11.0±5.9, and 3.8±2.7% vs. 79.9±8.7, 67.4±12.2, 37.0±10.9%, and 13.8±4.4%, respectively, P<0.001). The significant acceleration of GE of liquids and solids after LSG may have contributed to weight loss in the immediate postoperative period (4–6 weeks). It remains to be determined whether the weight loss will continue beyond that period.

Keywords: Gastric emptying; Laparoscopic sleeve gastrectomy; Obesity; Radionuclide scintigraphy.

840. Comparison Between Low and High Radioactive Iodine (^{131}I) Reablation Dose in Patients with Papillary Thyroid Cancer

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Nuclear Medicine Communications, 36: 114-119 (2015) IF: 1.669

Aim: The aim of this study was to assess ablation outcome after a second ablation dose and compare the ablation rate after low and high reablation doses of iodine-131 (^{131}I) after failure of the first ablation with 3700MBq.

Patients and Methods: The study included 81 patients with papillary thyroid cancer; they failed to achieve complete ablation after a first ablative dose of 3700MBq. Their first follow-up ^{131}I whole-body scan carried out 6–9 months after ablation showed small residual functioning tissue in the thyroid bed, with no functioning metastases. This is associated with unsuppressed serum thyroglobulin level (Tg) higher than 2 ng/ml. The patients received a second ablation dose, which was low (1110MBq) in 37 patients and high in the remaining 44 patients (2960MBq in 36 patients and 3700MBq in eight patients). A whole-body scan and Tg level assessment were carried out 6–9 months later. The criteria for complete ablation included absence of residual functioning thyroid tissue and a Tg level lower than 2 ng/ml.

Results: The overall successful complete ablation rate after the second reablation dose was 75%. This was achieved in 27 of 37 patients (73%) who received a low reablation dose and in 34 of 44 patients (77%) who received a highreablation dose; no statistically significant difference was found between the two groups (P>0.05).

Conclusion: In patients with papillary thyroid cancer who failed to achieve complete ablation after the first ablation dose of 3700MBq, the overall complete ablation rate after both a low and a high second ^{131}I dose was 75%, with no statistically significant difference in ablation rate between low (1110MBq) and high (2960 and 3700MBq) doses.

Keywords: Complete successful ablation; Papillary thyroid cancer; Radioactive iodine remnant ablation; Second reablative radioiodine dose.

841. Bone Scintigraphy in Axial Seronegative Spondyloarthritis Patients: Role in Detection of Subclinical Peripheral Arthritis and Disease Activity

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International Journal of Rheumatic Diseases, 18: 553-559 (2015) IF: 1.469

Aim: To detect subclinical peripheral arthritis and disease activity in axial seronegative spondyloarthritis (SpA) patients using bone scintigraphy.

Methods: Seronegative SpA patients with an established diagnosis and no clinically evident arthritis at the time of the study were included. After excluding symptomatic cases, 20 patients were recruited; 18 with ankylosing spondylitis (AS) and another two with psoriatic arthritis (PsA). Conventional bone scintigraphy was performed to detect the distribution of increased uptake, blood vascular pool (vascularity) and activity.

Results: The peripheral joints in all the patients were asymptomatic with no signs of arthritis on clinical examination. Disease activity was higher in those with hypervascularity and activity (75%) detected by scintigraphy. Scintigraphic activity of the sacroiliac joints was found in 10 patients (50%) with a mean sacroiliac joint index of 2.4 ± 0.6. Subclinical involvement of the hips, knees, shoulders, ankles, small joints of the hands, ankles and sternoclavicular joints, as well as the small joints of the feet were detected with descending frequencies (25%, 25%, 20%, 20%, 15%, 10% and 10%, respectively). Dorsal spine increased uptake was found in 35% and hypervascularity of the skull in two cases. Avascular necrosis of the hip was present in one case with hypovascularity.
Conclusion: The spectrum of joint involvement in seronegative SpAs should not be limited to sacroiliitis. Bone scintigraphy provides a cost-effective method for detecting the extent of involvement in this group of autoimmune systemic diseases (axial SpA) without clinical evidence of peripheral arthritis.
Keywords: Ankylosing spondylitis; Bone scintigraphy; Psoriatic arthritis; Seronegative spondyloarthritis.

842. The Relation Between the Timing of Palliative Care and the Frequency and Timing of Do-Not-Resuscitate Orders Among Cancer Deaths in A Tertiary Care Hospital

Samy A. Alsirafy, Amrallah A. Mohammed, Abdullah S. Al-Zahrani, Ahmad A. Raheem and Amr T. El-Kashif

American Journal of Hospice and Palliative Medicine, 32: 544-548 (2015) IF: 1.383

The medical records of 246 in-hospital cancer deaths were reviewed to explore the relation between palliative care (PC) timing and the frequency and timing of do-not-resuscitate (DNR) designation. The rate of DNR designation was 100% in patients referred to PC and 82% in those never referred (P < .001). Patients were grouped into 4 groups: early PC (>90 days from PC referral to death), intermediate PC (>30-90 days), late PC (=30 days), and no PC. The median DNR to death time was 96, 41, 11, and 3 days, respectively (P < .001). The proportion of intensive care unit (ICU) deaths was 0%, 1%, 3%, and 27%, respectively (P < .001). In Conclusion, in a tertiary care hospital, earlier PC was associated with earlier DNR designation and less frequent ICU deaths among in-hospital cancer deaths.
Keywords: Timing of palliative care; Cancer deaths; Do-not-resuscitate orders; Intensive care unit; End-of-life care; Aggressiveness.

843. Palliative Care Consultation Versus Palliative Care Unit: Which Is Associated with Shorter Terminal Hospitalization Length of Stay Among Patients with Cancer?

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American Journal of Hospice and Palliative Medicine, 32: 275-279 (2015) IF: 1.383

Hospital length of stay (LoS) may be used to assess end-of-life care aggressiveness and health care delivery efficiency. We describe the terminal hospitalization LoS of patients with cancer managed by a hospital-based palliative care (PC) program comprising a palliative care consultation (PCC) service and an inpatient palliative care unit (PCU). A total of 328 in-hospital cancer deaths were divided into 2 groups. The PCU group included patients admitted by the PC team directly to the PCU. The PCC group included patients admitted by other specialties and referred to the PCC team. The LoS of the PCU group was significantly shorter than that of the PCC group (9.9 [±9.4] vs 17.8 [±19.7] days, respectively; P < .001). Direct terminal hospitalization to PCU is not associated with longer LoS among cancer deaths managed by a hospital-based PC service.
Keywords: Palliative care unit; Palliative care consultation; Length of stay; End-of-life care; Advanced cancer; Tertiary care hospital.

844. Advanced Luminal Breast Cancer (Hormone Receptor-positive, HER2 Negative): New Therapeutic Options in 2015

Vanacker H, Bally O, Kassem L, Tredan O, Heudel P and Bachelot T

Bulletin Du Cancer, 102: 0-0 (2015) IF: 0.604

Despite improvements in early detection, surgery and systemic therapy, metastatic breast cancer remains a major cause of death. Luminal type breast cancers expressing hormone estrogen receptor (ER) or progesterone (PR) and without HER2 overexpression are generally sensitive to endocrine therapy, but raise the issue of the occurrence of resistance to treatment, particularly at metastatic stage. A better understanding of hormone resistance may guide the development of new therapeutics. New strategies aim at enhancing and prolonging of endocrine sensitivity, by optimizing existing schemes, or by combining an endocrine therapy with a targeted therapies specific to hormone resistance pathways: ER signaling, PI3K/AKT/mTOR and Cyclin Dependent Kinase (CDK). Key corners of 2014 include confirmation of benefit of high dose fulvestrant, and commercialization of everolimus as the first mTOR inhibitor in this indication. Other strategies are being tested dealing with new endocrine therapies or new molecular targets such as PI3K inhibitors, insulin-like growth factor receptor (IGF-R) and histone deacetylase (HDAC) inhibitors. Coming years may be fruitful and might radically change our way to treat these patients.
Keywords: Cancer du sein; Hormone; Hormone therapy; Hormonothérapie; Targeted therapy; Thérapies moléculaires; advanced breast cancer; ciblées; hormonosensible; receptor-positive.

845. Using Neuroleptics to Treat Delirium in Dying Cancer Patients at A Cancer Center in Saudi Arabia

Mohammad Zafir Al-Shahri, Mahmoud Yassin Sroor, Wael Ali Ghareeb, Enas Noshy Aboulela and Wael Edesa

Journal of Pain & Palliative Care Pharmacotherapy, 29: 365-369 (2015)

Neuroleptics are commonly used for treating delirium as a common problem in terminally ill cancer patients. However, prescribing patterns are believed to substantially vary among health professionals. The aim of this study is to determine the pattern of prescribing neuroleptics for treating delirium in cancer patients dying in a palliative care unit in Saudi Arabia. We

reviewed the medical records of adults with advanced cancer who died in the palliative care unit over 23 months. In addition to patients' demographics, data collection included the pattern of prescribing neuroleptics for the treatment of delirium during the last week of life. For the 271 patients included (57.6% females), the median age was 54 years. Although 62% of patients were on around-the-clock (ATC) neuroleptics to treat delirium, about two thirds of these were requiring rescue doses (PRN [pro re nata]) as well. The ATC neuroleptics included haloperidol alone (89.3%), levomepromazine alone (2.4%), or both (8.3%). All neuroleptics were administered via the parenteral route. On average, the maximum daily doses of the ATC neuroleptics were 4 mg for haloperidol and 15.5 mg for levomepromazine. Patients with primary or metastatic brain cancers were less likely to be on neuroleptics ($P < .0001$). The authors conclude that in their palliative care unit, haloperidol is by far the most commonly used neuroleptic, followed by levomepromazine, to treat the common problem of delirium in patients dying with advanced cancer. The generally low doses of neuroleptics required may be attributed to several factors in this population, including cultural motives.

Keywords: Cancer; Delirium; End of life, Palliative care.

846. The Fear of Using Tramadol for Pain Control (Tramadolophobia) Among Egyptian Patients with Cancer

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Journal of Opioid Management, 11: 474-480 (2015)

Objectives: The fear of using tramadol for pain control (tramadolophobia) by Egyptian patients with cancer is a frequent problem in our practice. This study was conducted to explore the prevalence of and the reasons behind tramadolophobia among Egyptian patients with cancer.

Methods: A structured interview including open-ended and closed questions. The study included 178 adult patients with cancer from two cancer centers in Cairo and Sharkia, Egypt.

Results: The source of information about tramadol was a non-healthcare-related source in 168 (94 percent) patients, mainly the media (50 percent). The believed uses of tramadol were abuse related in 94 (53 percent) patients, stimulant (physical, sexual, and to boost alertness) in 59 (33 percent), and analgesic in 55 (31 percent). Twenty-six (15 percent) patients gave history of tramadol use, largely (69 percent) as a stimulant. In case tramadol was prescribed for pain control, 90 (51 percent) patients refused to take it, 59 (33 percent) patients agreed to take it with concern about addiction, and only 29 (16 percent) patients agreed without concerns. Among those who refused taking tramadol for pain, the mentioned reason of refusal was addiction-related fears in 57 percent.

Conclusions: The stigmatization and misconceptions about tramadol may have resulted in tramadolophobia among the majority of Egyptian patients with cancer. This further complicates the barriers to cancer pain control in Egypt. Being the only available World Health Organization step-II analgesic in Egypt, interventions to overcome tramadolophobia should be taken.

Keywords: Cancer; Pain; Tramadol; Abuse; Phobia; Egypt.

847. The Place of Death of Patients with Cancer in Kuwait

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Bmj Supportive and Palliative Care, 5: 510-512 (2015)

Background The place of death (PoD) has a significant effect on end-of-life care for patients dying of cancer. Little is known about the place of cancer deaths in our region.

Methods: To identify the PoD of patients with cancer in Kuwait, we reviewed the death certificates submitted to the Kuwait Cancer Registry in 2009.

Results Of 611 cancer deaths, 603 (98.7%) died in hospitals and only 6 (1%) patients died at home. More than half (57.3%) of inhospital deaths were in the Kuwait Cancer Control Center. Among those for whom the exact PoD within the hospital was identified (484 patients), 116 (24%) patients died in intensive care units and 12 (2.5%) patients died in emergency rooms.

Conclusions This almost exclusive inhospital death of patients with cancer in Kuwait is the highest ever reported. Research is needed to identify the reasons behind this pattern of PoD and to explore interventions promoting out-of-hospital death among terminally ill cancer patients in Kuwait.

Keywords: Place of death; Palliative care; Cancer; Kuwait.

848. Influence of Low Grade Exercise on Skeletal Scintigraphy Using TC-99M Methylene Diphosphonate

Amr Amin, Maha Abd El-Kareem and Abu Baker Yahia

Nuclear Medicine Review, 18: 61-64 (2015)

Background: Tc-99m methylene diphosphonate [MDP] bone scan is the basis of the skeletal imaging in nuclear medicine being a highly sensitive tool for detecting bone diseases. Mechanical stimulation induced by low grade exercise or whole-body vibration appears to be advantageous regarding the maintenance and/or improvement of skeletal mass in humans. We aimed to assess the physiological influence of low grade exercise on the quality of skeletal scintigraphy using Tc-99m MDP.

Material and Methods: Tc-99m MDP bone scan was done for 92 volunteers [Group 1; G1]. Five days later, the same subjects were re-scanned [Group 2; G2] after an exercise on treadmill for 5 minutes. Image quality was assessed using quantitative measures whereby equal regions of interest (ROI) were drawn over the femoral diaphysis, and the contralateral adductor area. The total number of counts from the bone [B] ROI and soft tissue [ST] ROI was expressed as a ratio [B:ST ratio] and a mean value for each was established.

Results: Statistically significant difference was found between the B:ST ratio means [$p = 0.001$] in G1 and G2.

Conclusion: This study raised a physiological influence of low grade exercise on the image quality of tc-99m MDP skeletal scintigraphy by increasing MDP osseous uptake.

Keywords: Bone scan; Tc-99M MDP; Physiological effect of exercise; Osseous uptake.

849. Impact of Imatinib Interruption and Duration of Prior Hydroxyurea on the Treatment Outcome in Patients with Chronic Myeloid Leukemia: Singleinstitution Experience

Wael Abdelgawad Edesa and Raafat Ragaey Abdel-malek

Journal of the Egyptian National Cancer Institute, 27: 69-75 (2015)

Background: Optimal response requires that patients should be maintained on the drug continuously. Objectives: To evaluate the influence of imatinib interruption and prior hydroxyurea use on the outcome of patients with chronic myeloid leukemia.
Materials and Methods: Between January 2010 and November 2013, patients with chronic phase who received imatinib at the Kasr Al-ainy Center of Clinical Oncology were included.
Results: Sixty patients were included in this study, thirty three patients (55%) received imatinib upfront, while 27 (45%) received imatinib post hydroxyurea. Imatinib was not given regularly in 50% of patients. In terms of response, only major molecular response and complete molecular response were statistically significant in favor of patients who were receiving imatinib regularly compared to those who had interruption ($p< 0.001$, $p<0.001$, respectively) , while there was no difference in patients stratified according to prior hydroxyurea. The median progression free survival was 30.3 months (95% CI 24.3–36.3). Among the group of patients who received imatinib regularly, progression free survival was longer ($p=0.049$), there was no difference between those who received prior hydroxyurea versus those who did not ($p= 0.67$).
Conclusion: Duration of prior hydroxyurea had no impact on response or progression free survival, while patients regular on imatinib had statistically significant difference with respect to majormolecular response, complete molecular response and progression free survival compared to those who had periods of drug interruption, thus we need more governmental support to supply the drug without interruption to improve the outcome of therapy.
Keywords: Chronic myeloid leukemia; Imatinib; Hydroxyurea; Treatment interruption.

Dept. of Clinical Pathology

850. Susceptibility and Progression of End Stage Renal Disease Are Not Associated with Angiotensin Ii Type 1 Receptor Gene Polymorphism

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Journal of Receptors and Signal Transduction, 35: 381-385 (2015) IF: 2.277

Context: The role of the angiotensin II type 1 receptor (AT1R) gene polymorphism, A1166C, has been shown to be associated with end stage renal disease (ESRD) and its progression. There is also some evidence that HLA class II alleles are associated with ESRD independent of other factors. Objective To examine the association between AT1R gene polymorphism in the susceptibility and progression to ESRD in patients with chronic renal failure and to investigate if the AT1R genotypes and HLA-DR alleles predict the time to ESRD.
Materials and Methods: Genotyping was performed in 50 ESRD patients and 44 control subjects for the AT1R A1166C gene polymorphism using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). ESRD patients were examined for HLA-DRB1 alleles according to a reverse hybridization line probe assay.
Results: Allele and genotype frequencies of the AT1R polymorphism did not differ significantly between ESRD patients and controls. Furthermore, there was no association between the AT1R gene polymorphism or HLA-DRB1 alleles with the time to the occurrence of end stage failure.
Discussion and Conclusion: We concluded that the AT1R genotype does not contribute to the genetic susceptibility of ESRD and is not associated with progression of chronic kidney failure to ESRD.
Keywords: Angiotensin II type 1 receptor; DNA polymorphism; End stage renal disease.

851. Peripheral Expression of Hepcidin Gene in Egyptian β-Thalassemia Major

Azza Aboul-Enein, Amal EL-Beshlawy, MonaHamdy, Iman Shaheen, Zainab El-Saadany, Ahmed Samir and Hala Abd El-Samie

Gene, 564: 206-209 (2015) IF: 2.138

Iron overload is the major cause of morbidity and mortality in transfusion dependent β-thalassemia major patients. There is a sophisticated balance of body iron metabolism of storage and transport which is regulated by several factors including the peptide hepcidin. Hepcidin is the main iron regulatory molecule; it is secreted mainly by the liver and other tissues including monocytes and lymphocytes. Expression of hepcidin in such cells is unclear and has been studied in few reports with controverted result. Peripheral expression of hepcidin was measured using quantitative real time PCR (qRT-PCR) in 50 α-thalassemia major patients, in addition to 20 healthy volunteers as a control group.Hepcidin levels in β-thalassemia major patients showed statistically significant decrease in comparison to the control group, and was correlated to cardiac iron stores (T2*). However, hepcidin level was not different among the patients according to the HCV status or whether splenectomized or not. In Conclusion; peripheral expression of hepcidin, in iron overloaded β-thalassemia major patients, is a reflection of hepatic expression. It can be used as a molecular predictor for the severity of cardiac iron overload and can be used as a future target for therapy in α-thalassemia major patients
Keywords: β-Thalassemia; Hepcidin expression; qRT; PCR; Cardiac iron (T2*)

852. A Study of VEGF Gene Polymorphism in Egyptian Patients with Diabetic Retinopathy

Rasha Mohamad Hosny Shahin, Mohamad Amr Salah Eddin Abdelhakim, Mohammed El Sayed Mahmoud Owid and Mohamed El-Nady

Ophthalmic Genetics, 36: 315-320 (2015) IF: 1.455

Background: There are subgroups of patients with diabetes mellitus (DM) in whom diabetic retinopathy (DR) does not develop despite poor long-term control of their disease, while

others exercising fairly good control, develop retinopathy. So, we aimed to investigate the association of DR with 2578 polymorphism of the vascular endothelial growth factor (VEGF) gene, which has been reported to be associated with increased VEGF production, in Egyptian diabetic patients.

Materials and Methods: This is a case control study in which 148 diabetic patients were enrolled. Among them, 44 subjects had proliferative diabetic retinopathy (PDR), 30 had non-proliferative diabetic retinopathy (NPDR), and 74 individuals without retinopathy served as controls. A single nucleotide polymorphism (SNP) of the VEGF gene, a C!A transversion at 2578 (the C/A polymorphism), was investigated by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP).

Results: We found a higher frequency of the polymorphic genotype in both the NPDR (66.7%) and PDR (72.7%) groups compared to the wild C/C genotype (33.3% in NPDR and 27.3% in PDR), but with no statistically significant difference from the control group. Significant association of the progression of DR to the polymorphic genotype was achieved at diabetes duration more than 20 years.

Conclusion: Despite of the higher frequency of both the polymorphic genotype and the A allele in cases with DR compared to the control group, there might be no significant association between the VEGF gene polymorphism and DR per se, unless it is longstanding.

Keywords: Diabetic retinopathy; Egypt; VEGF C-2578A.

853. Immunomodulatory Effects of Umbilical Cord-Derived Mesenchymal Stem Cells

Shereen Shawki, Taghrid Gaafar, Hadeel Erfan, Engy El Khateeb, Ahmad El Sheikhah and Rabab El Hawary

Microbiol Immunol, 59: 348-356 (2015) IF: 1.242

Umbilical cord blood (UCB) is of great interest as a source of stem cells for use in cellular therapies. The immunomodulatory effect of mesenchymal stem cells (MSCs) originating from bone marrow, adipose tissue and amniotic membrane has previously been reported. In this study, MSCs were isolated from UCB with the aim of evaluating their immunomodulatory effects on proliferation of PB lymphocytes by two different techniques; namely, 5-bromo-2-deoxyuridine ELISA and a carboxy fluorescein diacetate succinimidyl ester flow cytometric technique. MSCs were isolated from UCB, propagated until Passage four, and then characterized for cell surface markers by flow cytometry and ability to differentiate towards osteocytes and adipocytes. Immunosuppressive effects on PB lymphocytes were examined by co-culturing mitomycin C-treated UCB MSCs with mitogenstimulated lymphocytes for 72 hr. Thereafter, proliferation of lymphocytes was detected by CFSE flow cytometry and colorimetric ELISA. The titers of cytokines in cell culture supernatant were also assayed to clarify possible mechanisms of immunomodulation. UCB MSCs suppressed mitogenstimulated lymphocyte proliferation, which occurs via both cell-cell contact and cytokine secretion. Titers of transforming growth factor beta and IL 10 increased, whereas that of IFN-g decreased in the supernatants of co-cultures. Thus, UCB MSCs suppress the proliferation of mitogen-stimulated lymphocytes. However further in vivo studies are required to fully evaluate the immunomodulatory effects of UCB MSCs.

Keywords: Cord blood; Immunomodulation; Mesenchymal stem cells; Proliferation.

854. Contribution of HLA-DR to Polycystic Kidney Disease in A Sample of Egyptian Patients

Rasha Mohamad Hosny Shahin and Ahmed Mahmoud Ahmed Shouman

Comparative Clinical Pathology, 24: 423-426 (2015)

The aim of this study was to investigate whether certain DR alleles might contribute to the genetic susceptibility among adult polycystic kidney disease patients in Egypt. This case–control study involved human leukocyte antigen (HLA)-DR typing for 40 non-related Egyptian patients with autosomal dominant polycystic kidney disease. Patients were compared with a group of 50 healthy subjects. Human leukocyte antigen DRB1 typing was carried out on allele level (DRB1*01 — DRB1*16) using polymerase chain reaction-sequencespecific oligonucleotide probes (PCR-SSOP). No statistically significant association of the disease with HLADRB1 was observed. So, HLA-DRB1 does not contribute to polycystic kidney disease in Egyptian patients.

Keywords: Polycystic kidney disease; Human leukocyte antigen; Egypt.

Dept. of Dermatology

855. Developing Core Outcome Set for Vitiligo Clinical Trials: International E-delphi Consensus

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Pigment Cell & Melanoma Research, 8: 363-369 (2015) IF: 4.619

Vitiligo is the most common depigmentating disorder affecting about 0.5% of the population worldwide (Whitton et al., 2010). Currently, there is a lack of consensus on the definition and Methods of assessment of vitiligo, which makes it difficult to perform meta-analyses or to compare the outcomes of different studies (Gonzalez et al., 2011; Whitton et al., 2010). It has been increasingly recognized that 'core outcomes' should be agreed upon and reported in all trials to allow the Results of trials to be compared and combined in meta-analyses (COMET Initiative: Core Outcome Measures Initiative www.comet-initiative.org). A recently conducted systematic review of outcome measures used in randomized controlled trials (RCTs) of patients with vitiligo as well as a survey of the most desirable outcomes for patients and clinicians concluded that there is no unified scale to measure repigmentation and that patient input in outcomes assessment is limited. Twenty-five outcomes were measured in 54 RCTs (Eleftheriadou et al., 2012). Moreover, another systematic review on outcome measures in vitiligo showed that none of the scales used was validated and met the COSMIN criteria (Vrijman et al., 2012). These two systematic reviews identified a huge problem in vitiligo research and an urgent need for developing a core outcome set at the first place. Vitiligo is a cosmetically and psychologically devastating disease (Lerner and Nordlund, 1978). Therefore, one would expect that subjective perception of the disease (i.e. patients' views on the effectiveness of a treatment) would be considered important. However, patient-centred

outcomes have rarely been included in vitiligo trials, despite previous recommendations for their inclusion in studies of patients with vitiligo (Eleftheriadou et al., 2012; Gonzalez et al., 2011; Whitton et al., 2010). It is crucial to achieve a better standardization in the outcomes applied in clinical research, and therefore, it is necessary to reach consensus among researchers to ensure that the outcomes used in trials for vitiligo treatments are reliable, clinically relevant and important to both clinicians and patients (Gonzalez et al., 2011; Whitton et al., 2010). This study aimed to develop international consensus over a core outcome set for vitiligo trials that is acceptable to healthcare professionals, patients and their caregivers, researchers and regulatory bodies. This consensus project was conducted as part of an international collaboration coordinated through the International Federation of Pigment Cell Societies (IFPCS) and the Centre of Evidence Based Dermatology at the University of Nottingham.

Keywords: Vitiligo; Vitiligo clinical trials; Vitiligo consensus.

856. Association of Angiotensin-Converting Enzyme (ACE) Gene Polymorphism with Inflammation and Cellular Cytotoxicity in Vitiligo Patients

Laila Rashed, Rania Abdel Hay, Rania Mahmoud, Nermeen Hasan, Amr Zahra and Salwa Fayez

Plos One, (2015) IF: 3.234

Background: Vitiligo is a disorder with profound heterogeneity in its aetio-pathophysiology. Angiotensin converting enzyme (ACE) plays an important role in the physiology of the vasculature, blood pressure and inflammation. An insertion/deletion (I/D) polymorphism of the ACE gene was reported be associated with the development of vitiligo.
Objective: Our aim was to evaluate the ACE I/D polymorphism in vitiligo patients and controls. Our second aim was to find a possible association between ACE gene polymorphism and inflammatory mediators (as interleukin (IL)-6) and/or cellular cytotoxicity induced by serum nitrite (as a breakdown product of the cytotoxic nitric oxide) in vitiligo patients.
Methods: This case-control study included 74 vitiligo patients and 75 apparently healthy controls. The distribution of ACE gene I/D genotype was investigated using PCR. Serum ACE, IL-6 and nitrite were measured by colorimetric method, ELISA and Griess assay respectively.
Results: The ACE allele frequency was significantly different between vitiligo patients and healthy controls ($P = 0.026$). However there was no significant difference between the ACE genotyping frequency in both groups ($P = 0.115$). There were statistically significant higher VIDA score ($P = 0.007$), and serum IL-6 ($P < 0.001$) in patients with the DD genotype when compared to other genotypes. Serum nitrite in patients with the DD genotype was significantly higher ($P = 0.007$) when compared to patients with II genotype. Serum levels of ACE, IL-6 and nitrite in vitiligo patients were statistically significantly higher than those in controls.
Conclusion: As a Conclusion, ACE gene polymorphism might grant susceptibility to develop vitiligo. Serum IL-6 and nitrite levels might have an important role in the pathogenesis of vitiligo. Targeting these two factors might have an implication in the treatment of some resistant cases.

Keywords: Angiotensin converting enzyme; Gene polymorphism; Vitiligo.

857. Vitamin D and the Skin: Focus on A Complex Relationship: A Review

Wedad Z. Mostafa and Rehab A. Hegazy

Journal of Advanced Research, 6: 793-804 (2015) IF: 3

The "sunshine" vitamin is a hot topic that attracted ample attention over the past decades, specially that a considerable proportion of the worldwide population are deficient in this essential nutrient. Vitamin D was primarily acknowledged for its importance in bone formation, however; increasing evidence point to its interference with the proper function of nearly every tissue in our bodies including brain, heart, muscles, immune system and skin. Thereby its deficiency has been incriminated in a long panel of diseases including cancers, autoimmune diseases, cardiovascular and neurological disorders. Its involvement in the pathogenesis of different dermatological diseases is no exception and has been the subject of much research over the recent years. In the current review, we will throw light on this highly disputed vitamin that is creating a significant concern from a dermatological perspective. Furthermore, the consequences of its deficiency on the skin will be in focus.

Keywords: Vitamin D; Deficiency; Dermatology; Immunological.

858. Acroosteolysis Presenting with Brachyonychia Following Exposure to Cold

M.H.M. EL-Komy and R. Baran

Journal of the European Academy of Dermatology and Venereology, 29: 2252-2254 (2015) IF: 2.826

Background: A vast number of conditions ranging from simple trauma to hereditary and collagen vascular disease had been described in association with acroosteolysis.
Objective: To demonstrate that severe cold exposure not mounting to frostbite may be associated with acroosteolysis.
Methods: A 16-year-old girl with acroosteolysis presenting with brachyonychia was fully investigated for possible cause of her nail and bone deformity.
Results: Lab investigations including Parathormone levels, Anti Scl 70, ANA, Anti-CCP and RF levels were all normal. X-ray imaging revealed resorption of the tufts of the terminal phalanges bilaterally. Disruption of nail fold capillaries with sluggish flow in capillary loops was evident on capillaroscopy.
Conclusion: It had been repeatedly reported that frostbite, Raynaud's disease and diseases associated with repeated chilblains may be associated with secondary cold-induced acroosteolysis. Here, we present a case of acroosteolysis associated with brachyonychia following exposure to severe cold not mounting to frostbite.

Keywords: Brachyonychia; Acroosteolysis; Nail.

859. Medical Ethical Standards in Dermatology: An Analytical Study of Knowledge, Attitudes and Practices

W.Z. Mostafa, R.M. Abdel Hay and M.I. El Lawindi

Journal of the European Academy of Dermatology and Venereology, 29: 143-147 (2015) IF: 2.826

Background Dermatology practice has not been ethically justified at all times.
Objective The objective of the study was to find out dermatologists' knowledge about medical ethics, their attitudes towards regulatory measures and their practices, and to study the different factors influencing the knowledge, the attitude and the practices of dermatologists.
Methods This is a cross-sectional comparative study conducted among 214 dermatologists, from five Academic Universities and from participants in two conferences. A 54 items structured anonymous questionnaire was designed to describe the demographical characteristics of the study group as well as their knowledge, attitude and practices regarding the medical ethics standards in clinical and research settings. Five scoring indices were estimated regarding knowledge, attitude and practice. Inferential statistics were used to test differences between groups as indicated. The Student's t-test and analysis of variance were carried out for quantitative variables. The chi-squared test was conducted for qualitative variables. The Results were considered statistically significant at a $P > 0.05$.
Results Analysis of the possible factors having impact on the overall scores revealed that the highest knowledge scores were among dermatologists who practice in an academic setting plus an additional place; however, this difference was statistically non-significant ($P = 0.060$). Female dermatologists showed a higher attitude score compared to males ($P = 0.028$). The highest significant attitude score ($P = 0.019$) regarding clinical practice was recorded among those practicing cosmetic dermatology. The different studied groups of dermatologists revealed a significant impact on the attitude score ($P = 0.049$), and the evidence-practice score ($P < 0.001$).
Conclusion Ethical practices will improve the quality and integrity of dermatology research.
Keywords: Dermatology; Knowledge; Practice.

860. Platelet-rich Plasma for Resistant Oral Erosions of Pemphigus Vulgaris: A Pilot Study

Mohamed Hussein Medhat EL-Komy, Akmal Saad Hassan, Heba Mohammed Abdel Raheem, Sally Sameh Doss, Mona EL-Kaliouby, Noha Adly Saleh and Marwah Adly Saleh

Wound Repair and Regeneration, 23: 953-955 (2015) IF: 2.745

Oral erosions and ulcers of pemphigus vulgaris (PV) are a debilitating condition that is usually difficult to treat. The wound healing properties of platelet-rich plasma (PRP) encouraged us to evaluate its usefulness in treatment of non-healing oral PV lesions. Seven patients with chronic oral PV, resistant to conventional therapy, were treated with weekly to monthly injections of PRP of affected mucosal membranes. All recruits reported improvement in pain and mastication and 6 of 7 patients had an improvement in pemphigus disease area index scores with PRP treatment. PRP injections seems to accelerate the healing process and decrease the pain and eating discomfort associated with the oral erosions and ulcers induced by PV.
Keywords: Autoimmune bullous diseases; Pemphigus; Platelet rich plasma.

861. Efficacy of Different Modes of Fractional CO_2 Laser in the Treatment of Primary Cutaneous Amyloidosis: A Randomized Clinical Trial

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Laser in Surgery and Medicine, 47: 388-395 (2015) IF: 2.619

Background: Primary cutaneous amyloidosis (PCA) comprises three main forms: macular, lichen, and nodular amyloidosis. The current available treatments are quite disappointing. Objectives: Assess and compare the clinical and histological changes induced by different modes of Fractional CO2 laser in treatment of PCA.
Patients and Methods: Twenty five patients with PCA (16 macular and 9 lichen amyloidosis) were treated by fractional CO2 using; superficial ablation (area A) and deep rejuvenation (area B). Each patient received 4 sessions with 4 weeks intervals. Skin biopsies were obtained from all patients at baseline and one month after the last session. Patients were assessed clinically and histologically (Congo red staining, polarized light). Patients were followed-up for 3 months after treatment.
Results: Both modes yielded significant reduction of pigmentation, thickness, itching, and amyloid deposits (P-value<0.001). However, the percentage of reduction of pigmentation was significantly higher in area A (Pvalue ¼0.003). Pain was significantly higher in area B. Significant reduction in dermal amyloid deposits denotes their trans-epidermal elimination induced by fractional photothermolysis.
Conclusion: Both superficial and deep modes of fractional CO2 laser showed comparable efficacy in treatment of PCA. Superficial mode being better tolerated by patients, is recommended as a valid therapeutic option.
Keywords: Primary cutaneous amyloidosis; Fractional CO_2; Superficial ablation; Deep rejuvenation.

862. 1064 Nd:YAG Laser for the Treatment of Chronic Paronychia: a Pilot Study

M. H. M. EL-Komy and N. Samir

Lasers Med Sci, 30:1623–1626 (2015) IF: 2.489

Paronychia, which can be acute or chronic, is characterized by erythema, edema, and tenderness at the proximal and occasionally lateral nail folds. Causes of chronic paronychia include excessive moisture, contact irritants, trauma, and candida infection. Chronic paronychia is usually multifactorial and difficult to treat. The aim of the present work was to assess the role of neodymium-doped yttrium aluminium garnet (Nd:YAG) laser as a new modality for the treatment of chronic paronychia. In this interventional pilot study, eight female patients suffering from long-standing paronychia received 2–5 Nd:YAG laser sessions (4 weeks apart). Fluences ranged between 70 to 80 J/cm^2, using a 2.5-mm spot size handpiece, and pulse duration was set at 0.7 ms. Patients were digitally photographed and clinically evaluated before starting the treatment and at each session. Seven of our patients showed various degree of improvement regarding erythema and swelling of their proximal nail folds. Nail plate abnormalities also improved in six patients. These preliminary results document the efficacy and feasibility of Nd:YAG laser as one of the treatments that could ameliorate chronic paronychia.
Keywords: Paronychia; Nd:YAG laser.

863. Gene Expression of Osteopontin in Alopecia Areata? A Case Controlled Study

Amr A. Rateb, Faisal N. Mohammed, Khadiga S. Sayed, Rehab A. Hegazy, Razan R. Al Agha, Laila A. Rashed and Safinaz S. Sayed

Skin Pharacology and Physiology, 28(2): 84-90 (2015) IF: 2.366

Purpose of the Study: To study the expression of osteopontin (OPN) in alopecia areata (AA) lesions in a trial to clarify its possible role in the pathogenesis of such a disease. Procedures: Tissue level of OPN was measured in 28 AA patients as well as 25 age- and sex-matched healthy controls using both real-time polymerase chain reaction (PCR) and immunohistochemistry.
Results: The tissue level of OPN by real-time PCR (4.5–12.8, 8.93 ± 1.9) and immunohistochemical expression of positive OPN mean area percent (7.1–21.2%, 12 ± 5.5%) were significantly higher in patients compared to controls (1–4.6, 2.11 ± 0.93; 3.9–12.02%, 6.8 ± 2.8%, respectively; $p < 0.0000$). The Severity of Alopecia Tool score showed no significant correlation with the OPN mRNA expression ($r = 0.11$, $p = 0.55$).
Conclusion: High OPN mRNA expression is associated with AA. OPN might play an important role in the pathogenesis of AA.
Keywords: Alopecia areata; Osteopontin; Inflammation; Cytokine.

864. Low Pathogenicity of Anti-desmoglein 3 Immunoglobulin G Autoantibodies Contributes to the Atypical Clinical Phenotypes in Pemphigus

Marwah A. Saleh, Rena Hashimoto, Yuko Kase, Masayuki Amagai and Jun Yamagami

Journal of Dermatology, 42: 685-689 (2015) IF: 2.252

The clinical phenotypes of pemphigus can be explained by the desmoglein (Dsg) compensation theory. However, some atypical cases such as cutaneous pemphigus vulgaris (cPV), in which patients have anti-Dsg3 antibodies without oral erosions, do not conform to this theory. To explain the discrepancy between clinical phenotypes and anti-Dsg antibody profiles, the pathogenic strength of immunoglobulin (Ig)G autoantibodies against Dsg3 must be taken into consideration. We analyzed the epitopes and blister-inducing pathogenic strength of the sera from three patients having IgG against Dsg3 without oral erosions with domain-swapped recombinant proteins and dissociation assay using cultured normal human epidermal keratinocytes. The Results showed that all sera contained IgG directed against the amino terminal EC1 domain of Dsg3, as is found in most PV sera. However, dissociation assays revealed that the pathogenic strength of the anti-Dsg3 antibodies in all three cases was extremely lower than that of typical PV cases with mucosal involvement. In Conclusion, when anti-Dsg3 IgG antibodies are not sufficient to inhibit the expression of Dsg3 in the oral mucosa, but can inhibit the expression in the skin, skin blisters can result. Therefore, the pathogenicity of anti-Dsg3 antibodies should be regarded as a key factor contributing to the clinical phenotype in pemphigus patients with conflicting antibody profiles.
Keywords: Autoimmune bullous diseases; Anti-desmoglein 3; Pemphigus.

865. Pemphigus in the Arab World

Marwah A. Saleh

Journal of Dermatology, 42: 27-30 (2015) IF: 2.252

The Arab world lies geographically between the Atlantic coasts of northern Africa and the Arabian Gulf. This area has wide latitudinal differences as well as variable environmental conditions ranging from deserts to forests. Approximately 370 million individuals who share the Arabic language live in this area. Pemphigus vulgaris (PV) and pemphigus foliaceus (PF) are the main subtypes of the pemphigus disease. Both pemphigus subtypes are present in many Arab countries; however, there is variation in the predominant subtype among countries. PV is the most common subtype in Egypt, Sudan, Morocco, Syria, Kuwait, Saudi Arabia and Yemen. On the other hand, PF is more prevalent in Libya and is endemic in Tunisia. Interestingly, there is variation in the dominant subtype in some cities within Morocco. For example, PF is more common in Marrakech which is the second largest city. The presence of anti-desmoglein 1 antibodies in the sera of normal Tunisians and the presence of anti-desmoglein 3 in normal Egyptians' sera suggested that environmental factors played a role in the disease pathogenesis in those areas. Further researches detected that traditional cosmetics were among the risk factors in Tunisia. Moreover, farming was suggested as a risk factor in Egypt, Tunisia and Sudan. Because there is no consensus for pemphigus treatment among the Arab countries, there is diversity in their pemphigus treatment regimens. Studying the demographic characteristics and the environmental conditions which caused the variations in the prevailing clinical phenotype will help us fill the gaps to understand the pathogenesis of the pemphigus disease.
Keywords: Arab; Autoimmune bullous diseases; Anti-desmoglein 3; Pemphigus; Vularis.

866. Combination of Radiofrequency and Intralesional Steroids in the Treatment of Keloids: A Pilot Study

Ahmed Hany Weshay, Rania Mounir Abdel Hay, Khadiga Sayed, Marwa Safwat El Hawary and Faisal Nour-Edin

Dermatologic Surgery, 41: 731-735 (2015) IF: 2.109

Background: None of therapeutic options for the treatment of keloids has been found completely effective and satisfactory. A combination approach is the best modality.
Objective To assess the clinical safety and efficacy of radiofrequency (RF) followed by intralesional (IL) steroid injection in keloids.
Materials and Methods: This pilot study included 18 patients who were suffering from keloids. All patients were subjected to 3 to 4 sessions of RF followed by IL steroid injection. Assessment of the scar volume and both objective and subjective parameters has been performed before and after completion of the sessions.
Results: There was a significant reduction of volume of all lesions in all patients after a total of 3 to 4 sessions ($p = .001$), with a mean volume reduction of 95.4%. There was a significant reduction of keloid pliability, height, and erythema compared with baseline ($p < .001$). Patients reported a significant reduction of their subjective symptoms compared with baseline ($p < .001$). No pain, infection, nor bleeding were reported after the RF procedure.

Conclusion: Radiofrequency tissue volume reduction combined with IL steroid is an effective treatment modality for keloids. It is an easy procedure with acceptable cosmetic outcome and less rate of recurrence.
Keywords: Keloid; Radiofrequency; Steroid.

867. Study of T Helper 1 and T Helper 2 Responses in Pemphigus Vulgaris Patients Receiving Interferon Alpha 2A Injections in Addition to A Standard Protocol Therapy: A Randomized Controlled Trial

Mohammad A. El-Darouti, Rehab A. Hegazy, Rania M. Abdel Hay, Marwa S. El Hawary, Amira M. Tawdy, Marwa M. Fawzy and Laila A. Rashed

Archives of Dermatological Research, 307: 299-307 (2015) IF: 1.902

T helper (Th)1 insufficiency was recently found to be related to the pathogenesis of pemphigus vulgaris (PV). Decreased Th1 response was particularly noticed in the early stages of PV. Therefore, administration of interferon alpha in the early stages of aggressive PV may lead to rapid control of the acute stage of the disease. Our aim was to evaluate the role of interferon alpha in the treatment of PV. 30 patients with acute severe PV (>60 % affection) and 30 age and sex-matched healthy subjects were included in this RCT. Patients were randomly divided into two groups (A and B). Group B patients received interferon retard (one subcutaneous injection/week for 4 weeks) in addition to our protocol for the treatment of PV (systemic pulse corticosteroids/cyclophosphamide in combination with sulphasalazine and pentoxifylline) that was administered to all the included patients. IFN-γ and IL-4 were estimated by ELISA before treatment, after 4 weeks and at the end of the study duration (12 weeks). Clinical assessment was done by PAAS on a biweekly basis. All PV patients showed significantly ($P < 0.001$) elevated levels of IL-4 and significantly ($P < 0.001$) depressed mean concentration of IFN-γ as compared with healthy controls. Twelve weeks after therapy both groups showed significant improvement in their mean PAAS being more evident and more rapid in group B. IFN-γ was elevated significantly and IL-4 was dropped significantly in group B patients in comparison to group A ($P < 0.001$). As a Conclusion, interferon therapy in severe PV could achieve a more prompt and better clinical response.
Keywords: Acantholysis; Blistering disease; Interferon-gamma; Interleukin-4.

868. The Efficacy of Intralesional Cryosurgery in the Treatment of Small-and Medium-sized Basal Cell Carcinoma: A Pilot Study

Ahmed H. Weshahy, Rania M. Abdel Hay, Dina Metwally, Omar A. Weshahy and Zeiad Gad

J. of Dermatological Treatment, 26: 147-150 (2015) IF: 1.669

Background: Cryotherapy has been used in treatment of basal cell carcinoma (BCC). In 1993, Weshahy described his technique for applying cryotherapy in depth, i.e. intralesional cryosurgery (ILC), using Weshahy's cryoneedles.
Objective To assess the clinical efficacy of ILC using Weshahy cryoneedles in the treatment of small- and medium-sized BCC with >5-year follow-up.
Patients and Methods: This pilot study included 43 patients with histopathologically proven BCCs of the nodular and superficial type. All BCCs were treated by Intralesional cryosurgery (Weshahy's technique) using specially designed angled or hook shaped needles.
Results: The study included 22 men (51.2%) and 21 women (48.8%). Out of 46 lesions, 45 lesions (97.8%) showed a cure in one session, and only 1 nodular lesion showed a small recurrence in a marginal region of the site treated. In relation to the cosmetic outcome, 32 (69.6%) lesions showed a good to excellent outcome, 11 (23.9%) a moderate to good outcome and 3 (6.5%) a poor cosmetic outcome. The cosmetic outcome was better in females (p¼0.578), with small lesions (p¼0.048), and between 40 and 70 years old (p¼0.046).
Conclusion: Cryotherapy is an alternative treatment for a small- to medium-sized BCC in selected patients.
Keywords: Basal cell carcinoma; Cryotherapy; Intralesional cryosurgery.

869. Clinical Effects of "Pioglitazone", an Insulin Sensitizing Drug, on Psoriasis Vulgaris and Its Co-Morbidities, A Double Blinded Randomized Controlled Trialx1

Hafez VG, Bosseila M, Abdel Halim MR, Shaker OG, Kamal M and Kareem HS.

Dermatol Treat, 26 (3): 208-214 (2015) IF: 1.669

Objectives: To evaluate the therapeutic efficacy of pioglitazone on psoriasis vulgaris and its comorbidities.
Materials and Methods: Forty-eight patients with moderate-to-severe psoriasis vulgaris were enrolled in this randomized double blinded placebo-controlled trial. Active treatment included: oral pioglitazone 30mg daily for 10 weeks. Primary outcome (treatment success) was PASI-75. Secondary outcomes included changes in metabolic syndrome, insulin resistance and cardiovascular risk.
Results: Treatment success was achieved in 5/24 (21%) in the pioglitazone group compared to 1/24 (4%) in the placebo group; however, this difference was not significant (p=0.081). Compared to placebo, no significant difference existed as regards high-sensitive C reactive protein. Metabolic syndrome and insulin resistance were not affected.
Conclusions: This short term (10 weeks duration) study revealed no effect of pioglitazone 30mg daily neither on the clinical response of moderate-to-severe psoriasis nor on metabolic syndrome and insulin resistance. Cardio-protective role appears to be more related to improvement of psoriasis. LIMITATION: Short duration of treatment and small number of subgroups.
Keywords: Cardiovascular risk; Insulin resistance; Metabolic syndrome; Pioglitazone; Psoriasis; Randomized controlled trial.

870. Evaluation of Angiogenesis in Early Mycosis Fungoides Patients: Dermoscopic and Immunohistochemical Study

Manal Bosseila, Khadiga Sayed Sayed, Safinaz Salah El-Din Sayed and Noha Ali Abd El Monaem

Dermatology, 231(1): 82-86 (2015) IF: 1.569

Background: Angiogenesis is the production of new blood vessels from an existing vascular network; it plays a critical role in solid tumor development and metastasis.
Objectives: To assess angiogenesis in early cases of mycosis fungoides (MF) and to determine vascular patterns in MF dermoscopically.
Methods: 25 patients with MF and 20 healthy controls were included. The MF lesions were assessed dermoscopically. CD34 immunohistochemistry was performed to count dermal microvessel density (MVD).
Results: The total dermal MVD was significantly higher in MF patients (19.77 ± 5.81) than in controls (4.44 ± 3.16; p = 0.013). Among them, there were 10.8 ± 4.1 sprouts of endothelial buds (clusters of cells per field) in patients and 2.4 ± 2 in controls (p = 0.000). The dotted pattern of blood vessels was the most frequently encountered pattern in the MF lesions by dermoscopy.
Conclusions: Our findings support that neoangiogenesis is significantly increased in early MF lesions and that the main dermoscopic feature of MF is dotted blood vessels.
Keywords: Angiogenesis; Dermoscopy; Cd34; Mycosis fungoides.

871. Bimatoprost Versus Mometasone Furoate in the Treatment of Scalp Alopecia Areata: A Pilot Study

Hesham Zaher, Heba I. Gawdat, Rehab A. Hegazy and Marwa Hassan

Dermatology, 230: 308-313 (2015) IF: 1.569

Background: Alopecia areata (AA) is an immune-mediated disease that targets anagen hair follicles. Despite various therapeutic options, there is no cure for AA. Prostaglandin analogues have been recognized as being capable of inducing hypertrichosis.
Objective To compare the efficacy and safety of bimatoprost to those of corticosteroid in the treatment of scalp AA.
Methods: Thirty adult patients with patchy AA (S1) were included. Two AA patches were randomly assigned to treatment either by mometasone furoate 0.1% cream once daily (area A) or bimatoprost 0.03% solution twice daily (area B) for 3 months. Patients were assessed using the Severity of Alopecia Tool (SALT) scoring system for hair re-growth.
Results: All responding AA patches showed significant reduction in their SALT score after therapy. Area B demonstrated significantly better Results regarding rapidity of response in weeks, percentage of hair re-growth and side effects compared to area A.
Conclusion: Bimatoprost solution represents a therapeutic option for scalp AA.
Keywords: Alopecia areata; Bimatoprost; Corticosteroids; Efficacy; Side effects.

872. Frequency of Hypopigmented Mycosis Fungoides in Egyptian Patients Presenting with Hypopigmented Lesions of the Trunk

Mona Abdel-Halim, Eman El-Nabarawy, Reham El Nemr and Abeer M. Hassan

American Journal of Dermatopathology, 37: 834-840 (2015) IF: 1.387

Hypopigmented mycosis fungoides (HMF) is an uncommon variant of mycosis fungoides with an unknown exact frequency. We aimed to study the frequency of HMF in a cohort of Egyptian patients presenting to a tertiary care center in Cairo, Egypt, with hypopigmented lesions of the trunk. Hundred patients with hypopigmented lesions involving the trunk (with or without other sites involvement) were subjected to thorough clinical and histopathological examination. Immunohistochemical studies (S100, CD4, and CD8) were performed when indicated. Constellation of findings was used to reach a final diagnosis. Sixteen cases had HMF (16%). Other than HMF, our cohort included hypopigmented parapsoriasis en plaque (42 cases), postinflammatory hypopigmentation (28 cases), progressive macular hypomelanosis (12 cases), and pityriasis alba (2 cases). In comparison with other hypopigmented disorders, HMF was significantly associated with progressive disease course (P = 0.004), affection of distal upper limbs (P = 0.005), proximal lower limbs (P = 0.003), large-sized lesions (.5 cm) (P , 0.0001), well-defined margin (P , 0.0001), scaliness (P = 0.002), erythema (P , 0.0001), atrophy (P = 0.012), and mottled pigmentation (P , 0.0001). Awareness of HMF and its characteristic clinical features is mandatory to avoid underdiagnosis or overdiagnosis with subsequent morbidity or unnecessary aggressive therapy, respectively.
Keywords: Hypopigmented mycosis fungoides; Hypopigmented lesions; Frequency; Histopathology; Epidermotropism; CD4; CD8.

873. Do Normal Egyptians Possess Anti-desmoglein 3 Antibodies?

Marwah A. Saleh and Mohamed M. El-Bahy

International Journal of Dermatology, 54: 1145-1149 (2015) IF: 1.312

Background: Pemphigus is a group of autoimmune blistering diseases targeting the cell-cell adhesion molecules, desmogleins (Dsgs). Anti-Dsg antibodies, the hallmark of the disease, were not detected in normal individuals in many populations. In spite of the rarity of pemphigus vulgaris (PV) disease in many parts of the world, PV is not rare in Egypt. The purpose of the present study is to investigate the presence of anti-Dsg3 antibodies in normal Egyptians aiming to determine the reason for the increase in number of patients in Egypt with pemphigus.
Methods: Anti-Dsg3 antibodies were evaluated in 200 normal human sera, 20 first-degree relatives with PV in comparison with 10 patients with PV as controls using the enzyme-linked immunosorbent assay technique.
Results: Fourteen of 200 (7%) normal individuals and two of 20 (10%) first-degree relatives with PV had anti-Dsg3 antibodies using enzyme-linked immunosorbent assay technique, and 11 of 16 were still positive after confirmation by indirect immunofluorescence. The sera were positive for IgG1, IgG3, and IgG4 subclasses. The presence of IgG4 subclass in normal individuals is suggestive that they may be in the preclinical stage and therefore are at higher risk to develop the PV disease.
Conclusion: The study proved the presence of anti-Dsg3 antibodies in normal Egyptians with significant relation to some environmental factors. Follow-up of those individuals is necessary to determine who will develop the disease and the triggering factors.

Keywords: Autoimmune bullous diseases; Anti-desmoglein 3; Pemphigus.

874. Are Normolipidaemic Patients with Xanthelasma Prone to Atherosclerosis?

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Clinical and Experimental Dermatology, 40: 373-378 (2015) IF: 1.092

Background.When patients with xanthelasma are found to have normal lipid levels, dermatologists usually proceed with their treatment without further investigations. However, there is some evidence that normolipidaemic patients with xanthelasma (NPX) have a similar cardiovascular risk to hyperlipidaemic patients with xanthelasma (HPX). Aim. To evaluate the risk of atherosclerosis in Egyptian NPX compared with HPX and controls.
Methods. In total, 20 NPX, 20 HPX and 40 normolipidaemic controls were enrolled. All participants were matched for age and sex. Diabetes was an exclusion factor. Carotid ultrasonography was used to measure intima–media thickness (IMT). Other risk factors of atherosclerosis such as high blood pressure, obesity and smoking were also assessed, as well as atherosclerotic markers, including total leucocytic count (TLC), C-reactive protein and lipoprotein a.
Results. Although still within the normal range, total cholesterol and triglycerides were significantly higher in NPX compared with controls. IMT was significantly higher in NPX compared with controls, but lower than that of HPX. The increased IMT in NPX was not related to any of the studied risk factors. Apart from significantly higher body mass index and TLC, NPX showed no significant differences from controls for other risk factors of atherosclerosis or for atherosclerotic markers.
Conclusion. NPX seem to have a higher risk of atherosclerosis independent of lipid concentrations, and should therefore be fully investigated in order to allow detection and early management of such risk.
Keywords: Xanthelasma; Atherosclerosis.

875. Kallin Syndrome Associated with Vitiligo

M. A. El Darouti, M. S. El Hawary and R. M. Abdel Hay

Clinical and Experimental Dermatology, 40: 35-38 (2015) IF: 1.092

Kallin syndrome (KS) is a variant of epidermolysis bullosa simplex (EBS), which, in addition to the classic features of EBS, also presents with deafness, alopecia, hypodontia and nail dystrophy. We report the case of a 17-year-old boy who presented to our clinic with trauma-induced skin blistering, alopecia, deafness, dental caries, nail dystrophy and vitiliginous areas. The skin blisters had been appearing since birth, and healed without scarring. The vitiliginous areas were unrelated to the sites of the blisters. Electron microscopy of the skin blisters was diagnostic of EBS, and the depigmented lesions were similar to those of vitiligo. An association of vitiligo with EBS has not been reported previously. Multiple genetic findings have confirmed a role for keratin in regulating skin pigmentation. Apoptosis of melanosome-bearing keratinocytes may participate in the reduction of melanin density and result in depigmentation. Further studies on the defective proteins in KS may clarify the mechanism underlying the association with vitiligo.
Keywords: Epidermolysis bullosa; Kallin syndrome; Vitiligo.

876. Reduction in Tissue Plasmin: A New Mechanism of Action of Narrowband Ultraviolet B in Psoriasis

D. Metwally, K. Sayed, R. Abdel Hay and L. Rashed

Clinical and Experimental Dermatology, 40: 416-420 (2015) IF: 1.092

Background Plasmin (PL) is a potent inflammatory cell activator, and ultraviolet (UV)B has immunomodulatory effects on cutaneous inflammatory responses. There are no previous studies comparing the effect of narrowband (NB)-UVB on tissue PL levels in psoriasis. Aim To estimate the possible role of PL in the pathogenesis of psoriasis, and to evaluate the effect of NB-UVB on tissue PL in psoriasis.
Methods This case–control study enrolled 21 patients with psoriasis and 20 clinically healthy volunteers matched for age and sex. Patients underwent 24 sessions of NB-UVB radiation. Biopsy samples using a 4 mm punch were taken from all patients before and after treatment and from the controls for estimation of tissue PL level by ELISA.
Results Tissue PL was significantly upregulated in psoriasis before treatment (mean ± SD 1.73 ± 1.23 ng/mg protein) compared with controls (0.21 ± 0.15 ng/mg protein) ($P < 0.001$). A statistically significant positive correlation ($P = 0.02$) was found between the tissue PL before treatment and the Psoriasis Area and Severity Index. Patients received 24 sessions of NB-UVB, with a mean cumulative dose of 23.25 ± 8.14 mJ/cm2. Tissue PL levels were reduced by a mean of 30.3% post-treatment compared with baseline ($P < 0.001$). The reduction in Pl levels was significantly correlated with the cumulative dose of NB-UVB, and with the percentage reduction in PASI ($P < 0.001$).
Conclusions Our study highlights the possible role played by tissue PL level in the pathogenesis of psoriasis. PL level appears to reflect disease severity, and is a possible marker of therapeutic efficacy of NB-UVB on psoriatic skin.
Keywords: Plasmin; Psoriasis; NB-UVB; Reduction.

877. Intralesional Botulinum Toxin Type A Equally Effective and Better Tolerated Than Intralesional Steroid in the Treatment of Keloids: A Randomized Controlled Trial

Eman Shaarawy, Rehab A. Hegazy and Rania M. Abdel Hay

Journal of Cosmetic Dermatology, 14: 161-166 (2015) IF: 0.876

Intralesional (IL) corticosteroid therapy is a treatment for keloids. IL botulinum toxin type A (BTA) has been postulated in such an indication with controversial reports. To compare efficacy and safety of IL BTA to the IL corticosteroid therapy in treatment of keloids. Twenty-four patients with keloids were randomly divided into two equal groups: receiving IL steroid repeated every 4 weeks for six sessions (group A) and IL BTA 5 IU/cm3 repeated every 8 weeks for three sessions (group B). Objective parameters (hardness, elevation, and redness), subjective complaints (itching,

pain, and tenderness), patient satisfaction, and side effects were evaluated. There was a significant decrease in the volume of the lesions after treatment ($P < 0.01$), with a volume reduction of 82.7% and 79.2%, respectively, in both groups. A significant softening of lesions vs. baseline was observed ($P < 0.01$), with statistically significant improvement in softening in group A ($P < 0.01$). There was a significant decrease in height of lesions and in redness score compared with baseline ($P < 0.01$) with no significant difference in between both groups. All patients mentioned a significant reduction of their subjective complaints ($P < 0.01$) that were more significant in group B. Skin atrophy and telangiectasia were evident in three patients of group A. The efficacy and safety of the IL BTA were clearly evident in the current work from the rapid significant amelioration of the subjective complaints and the comparable significant improvement of the objective parameters as well as the volume of the keloids in comparison with the IL corticosteroids.

Keywords: Botulinum toxin; Intralesional steroids; Off-label indication; Scar.

878. Crude Coal Tar and Ultraviolet (UV) A Radiation (Modified Goeckerman Technique) in Treatment of Psoriasis

Mohamed A. EL Darouti, Heba I. Gawdat, Rehab A. Hegazy, Amira El Tawdy, Marwa M. Fawzy and Dalia M. AbdelHalim

Acta Dermatovenereologica Crotica, 23: 165-170 (2015) IF: 0.431

Psoriasis is a chronic inflammatory dermatosis that has a substantial impact on the quality of life. Goeckerman's technique (GT) has been implemented for the treatment of psoriasis with high clearance rates and long periods of remission. The objective of this article was to evaluate the efficacy and safety of modified GT (crude coal tar 2.5% plus UVA) as an alternative therapeutic modality for psoriatic patients with skin types III-V. Twenty two patients with moderate, severe, and erythrodermic psoriasis were included in this study. All patients received modified GT (crude coal tar 2.5% plus UVA) six days per week for a period of 3 months. Assessment of the rate of reduction of psoriasis area severity index (PASI) was performed, as well as photographic documentation of each patient at baseline and after completion of therapy. There was a significant reduction in PASI scores after therapy in all patients (P=0.001). The rate of PASI reduction after therapy was >50% in 63.6% of patients; 27.3% of patients achieved >75% reduction and 9.1% of patients achieved 26-50% reduction. No serious side effects were reported in any of the patients. Modified GT is a safe and effective therapeutic option for patients with moderate and severe psoriasis.

Keywords: Psoriasis; Modified goeckerman'S technique; Efficacy; Safety.

Dept. of Diagnostic Radiology

879. Diagnostic Value of Combined Static-Excretory MR Urography in Children with Hydronephrosis

Sally Emad-Eldin, Omar Abdelaziz and Tarek A. El-Diasty

Journal of Advanced Research, 6: 145-153 (2015) IF: 3

The aim of this study was to determine the feasibility, accuracy and diagnostic potential of com- bined static-excretory MR Urography in children with sonographically detected hydronephro- sis. We prospectively evaluated 28 children (11 girls and 17 boys), mean age 8.3 years (range 2 months–16 years). Static-excretory MR Urography was performed in all cases. The Results of MR Urography were compared with the Results of other imaging modalities, cystoscopy and surgery. In 28 children, 61 renal units were evaluated by MR Urography (the renal unit is the kidney and its draining ureter). The final diagnoses included: normal renal units (n = 23); uretropelvic junction obstruction (n = 14); megaureter (n = 8); midureteric stricture (n = 1), complicated duplicated systems (n = 5), post ESWL non-obstructive dilation (n = 2), extrarenal pelvis (n = 4), dysplastic kidney (n = 4). Complex pathology and more than one disease entity in were found in 7 children. The MRI diagnosis correlated with the final diagnosis in 57 units, with diagnostic accuracy 93.4%. In Conclusions static and excretory MRU give both morphological and functional information in a single examination without exposure to ionizing radiation and iodinated contrast agent. It is a valuable imaging technique for children with upper urinary tract dilatation; especially in cases of complex congenital pathologies and severely hydronephrotic kidney.

Keywords: Static MRU; Excretory MRU; Pediatrics; Dilated urinary tract.

880. Anatomical-based Model for Simulation of HIFU-Induced Lesions in Atherosclerotic Plaques

Mohamed K. Almekkaway, Islam A. Shehata and Emad S. Ebbini

International Journal of Hyperthermia, 31(4): 433-442 (2015) IF: 2.645

Purpose: The aim of this study was to simulate the effect of high intensity focused ultrasound (HIFU) in non-homogenous medium for targeting atherosclerotic plaques in vivo.

Materials and Methods: A finite-difference time-domain heterogeneous model for acoustic and thermal tissue response in the treatment region was derived from ultrasound images of the treatment region. A 3.5 MHz dual mode ultrasound array suitable for targeting peripheral vessels was used. The array has a lateral and elevation focus at 40 mm with fenestration in its centre through which a 7.5 MHz diagnostic transducer can be placed. Two cases were simulated where seven adjacent HIFU shots (~5000 W/cm2, 2-s exposure time) were targeted on the plaque tissue within the femoral artery. The transient bioheat equation with a convective term to account for blood flow was used to predict the thermal dose. The Results of the simulation model were then validated against the histology data.

Results: The simulation model predicted the HIFU-induced damage for both cases, and correlated well with the histology data. For the first case thermal damage was detected within the targeted plaque, while for the second case thermal damage was detected in the pre-focal region.

Conclusion: The Results suggest that a realistic, image-based acoustic and thermal model of the treatment region is capable of predicting the extent of thermal damage to target plaque tissue. The model considered the effect of the wall thickness of large arteries and the heat-sink effect of flowing blood. The model is used for predicting the size and pattern of HIFU damage in vivo.

Keywords: Atherosclerosis; HIFU; Numerical simulation; Therapeutic ultrasound; Thermal ablation.

881. Contrast-Enhanced Spectral Mammography: Impact of the Qualitativemorphology Descriptors on the Diagnosis of Breast Lesions

Rasha Mohamed Kamal, Maha Hussien Helal, Rasha Wessam, Sahar Mahmoud Mansour, Iman Godda and Nelly Alieldin

European Journal of Radioloy, 84: 1055-1049 (2015) IF: 2.369

Objective To analyze the morphology and enhancement characteristics of breast lesions on contrast-enhanced spectral mammography (CESM) and to assess their impact on the differentiation between benign and malignant lesions. Materials and method: This ethics committee approved study included 168 consecutive patients with211 breast lesions over 18 months. Lesions classified as non-enhancing and enhancing and then thelatter group was subdivided into mass and non-mass. Mass lesions descriptors included: shape, margins,pattern and degree of internal enhancement. Non-mass lesions descriptors included: distribution, pattern and degree of internal enhancement. The impact of each descriptor on diagnosis individually assessed using Chi test and the validity compared in both benign and malignant lesions. The overall performance of CESM were also calculated. **Results**: The study included 102 benign (48.3%) and 109 malignant (51.7%) lesions. Enhancement was encountered in 145/211 (68.7%) lesions. They further classified into enhancing mass (99/145, 68.3%) and non-mass lesions (46/145, 31.7%). Contrast uptake was significantly more frequent in malignant breast lesions (p value =0.001). Irregular mass lesions with intense and heterogeneous enhancement patterns correlated with a malignant pathology (p value =0.001). CESM showed an overall sensitivity of 88.99%and specificity of 83.33%. The positive and negative likelihood ratios were 5.34 and 0.13 respectively. **Conclusion**: The assessment of the morphology and enhancement characteristics of breast lesions onCESM enhances the performance of digital mammography in the differentiation between benign andmalignant breast lesions.

Keywords: Digital mammography; Contrast-enhanced spectral mammography; Breast lesions; Morphology lexicon.

882. Semi-quantitative Contrast-enhanced MR Analysis of Indeterminate Ovarian Tumours: When to Say Malignancy?

S. M. Mansour, S. Saraya and Y. El-Faissal

British Journal of Radiology, 88: 20150099-20150099 (2015) IF: 2.026

Objective To evaluate the ability of dynamic post-contrast sequence to specify indeterminate ovarian masses with inconclusive MR features of malignancy. Since management is dramatically different, special focus on the ability to differentiate borderline from invasivemalignancywas considered.
Methods: 150 ovarian masses were detected by pelvic ultrasound in 124 patients. Masses had been considered for dynamic post-contrast MRI. We expressed the kinetic parameters (i.e. enhancement amplitude, time peak of maximal uptake and maximal slope) in the form of maximum relative enhancement percentage (MRE%), time of maximal peak of contrast uptake (Tmax) and slope enhancement ratio (SER) curves. Histological findings were the gold standard of reference.
Results: Malignant ovarian masses showed higher MRE% than benign and borderline masses (p,0.001). Tmax was shorter for malignant than benign (p,0.01) and borderline (p,0.001) ovarian masses. SER curves were the most suggestive of malignancy with a specificity and accuracy of 85.7% and 84.7%, respectively.
Conclusion: Dynamic contrast-enhanced MRI could be a specific sequence to differentiate ovarian masses with indeterminate MR morphology with a special discrimination for low potential from invasive ovarian malignancy.
Advances in knowledge: The study evaluated the diagnostic performance of the individual parameters of dynamic post-contrast MR sequence in evaluating ovarian masses. Management divert between benign, borderline and invasive malignant masses; our work presented a cut-off value for the peak of contrast uptake of 120%, which helped in the differentiation between benign and malignant tumours; the SER curves with Type III (early washout) pattern that was indicative of invasive malignancy was more specific than borderline malignancy.

883. Intra-operative Ultrasound-Guided Thrombectomy and Thrombolysis for Post-Operative Portal Vein Thrombosis in Living Liver Donors

O. Abdelaziz, K. Hosny, O. Elmalt, S. Emad-Eldin and A. Hosny

International Journal of Organ Transplantation Medicine, 7(1): 33-40 (2015)

There are few reports of portal vein thrombosis among living donor liver transplant donors and no published data on the management of this event. In this report, we present our experience in the diagnosis and management of this rare complication in two living donor liver transplantation donors who developed post-operative portal vein thrombosis. Both cases were successfully managed with intra-operative ultrasound-guided thrombectomy, vein patch venoplasty, and catheter-directed thrombolysis. The two donors are symptom-free two years after the event.

Keywords: Liver transplant; Living donor; Portal vein; Postoperative complications; Thrombectomy; Thrombolytic therapy; Venoplasty.

884. Residual Breast Cancer or Post Operative Changes: Can Diffusion-weighted Magnetic Resonance Imaging Solve the Case?

Sahar M. Mansour and Noha Behairy

Egyptian Journal of Radiology and Nuclear Medicine, 46: 225-234 (2015)

Objective To evaluate the ability of Diffusion weighted MR imaging (DWI), as a noninvasive sequence to differentiate between accepted post operative sequel and residual malignancy in breast cancer patients following different surgical procedures.
Patients and Methods: DWI in addition to the routine post contrast MRI was performed for follow up of 170 post operative breasts (6–24 months). DWI acquired using b values: 0, 850, 1000 and 1500. Analysis considered signal intensity (SI) at b 1000 and the ADC map and the mean ADC values.
Results: Post operative changes were: Edema (n=17, 10%), skin thickening (n= 25, 15.9%), seroma (n= 17, 10%), hematoma (n=5, 3%), fat necrosis (n =13, 7.6%), fibrosis (n=8, 4.7%), and

combined (n= 83, 48.8%). Residual malignancy found in 16.5% (n =28) of cases. No significant difference was noted between DWI SI at b 850 versus 1000 and b 1000 versus 1500 (P >0.05). Also no difference (P > 0.05) was noted between the mean ADC values of residual malignant masses and post operative sequel of fibrosis and fat necrosis. ADC map showed low SI in 30% of cases. Statistical analysis yielded sensitivity, specificity and accuracy of 92.8%, 75.6% and 78% for contrast MRI and 92.8%, 82.6% and 83.4% for DWI respectively.

Conclusion: DWI enhanced the diagnostic performance of MRI in differentiating residual malignancy from post operative changes.

Keywords: Diffusion imaging; MRI; Post operative; Breast cancer.

885. Diffusion-weighted Magnetic Resonance Imaging in the Assessment of Ovarian Masses with Suspicious Features: Strengths and Challenges

Sahar Mansour, Rasha Wessam and Mariam Raafat

Egyptian Journal of Radiology and Nuclear Medicine, 46: 1278-1289 (2015)

Objective To evaluate diagnostic performance of diffusion weighted imaging (DWI) in evaluating ovarian masses with suspicious features on magnetic resonance imaging (MRI).

Patients and Methods: Pelvic MRI and DWI assessed 235 complex and solid ovarian masses of suspicious MRI features. On DWI, scanning acquired by b values: 0, 500, 1000 and 1500. Analysis considered signal intensity (SI) at b1000 and the mean ADC values for the solid components of the masses.

Results: Included masses proved benign in 75(32%), borderline (low potential malignancy) in 55(23.4%) and malignant in 105(44.6%). Restricted diffusion was observed in all of the invasive malignancy (57.1%, n =105/184). Benign and borderline tumors with high DWI SI presented 15.2% and 27.7% respectively (P<0.05). The mean ADC value was 1.2+0.34 · 103 mm2/s, 1.1+ 0.06 · 103 mm2/s, and 0.83 + 0.15 · 103 mm2/s for benign, borderline and malignant masses respectively. The ADC values of malignant masses and benign masses with fibrous components showed no significant difference (P =0.333). Significant difference was detected in those with fatty tissue (P =0.002).

Conclusion: DWI supported by conventional MRI data can confirm or exclude malignancy in suspicious ovarian masses. The combined analysis of quantitative and qualitative criteria and knowledge of the sequence pitfalls are required.

Keywords: Diffusion-weighted; MR imaging; Ovarian tumors; ADC value.

Dept. of Ear Nose & Throat

886. Furlow Palatoplasty for Previously Repaired Cleft Palate with Velopharyngeal Insufficiency

Mosaad Abdel-Aziz, Ahmed Nassar, Mohammed Rashed, Nader Naguib and Abdel-Rahman El-Tahan

International Journal of Pediatric Otorhinolaryngology, 79 (10): 1748-1751 (2015) IF: 1.186

Velopharyngeal insufficiency (VPI) is a common complication after cleft palate repair, it may be due to lack of levator sling reconstruction and/or palatal shortening. Furlow palatoplasty has the advantages of retro-positioning of levator palati muscles and palatal lengthening. The aim of this study was to assess the efficacy of Furlow palatoplasty in the treatment of VPI in patients who undergone previous palatoplasty.

Methods Twenty-three children with post-palatoplasty VPI were included in the study. Furlow technique which was not used in the primary repair, has been used as a secondary corrective surgery. Preoperative and postoperative evaluation of velopharyngeal function was performed, using auditory perceptual assessment (APA) and nasometry for speech, and flexible nasopharyngoscopy for velopharyngeal closure.

Results Significant improvement of APA and nasalance score for oral and nasal sentences was achieved. Flexible nasopharyngoscopy showed complete velopharyngeal closure in 19 patients (82%) postoperatively.

Conclusion Furlow palatoplasty is considered a useful treatment option for VPI in patients with previously repaired cleft palate, it improves the speech and velopharyngeal closure.

Keywords: Furlow palatoplasty; Velopharyngeal insufficiency; Cleft palate; Hypernasality.

887. The Association of Varicella Zoster Virus Reactivation with Bell''s Palsy in Children

Mosaad Abdel-Aziz, Noha A. Azab, Badwy Khalifa, Mohammed Rashed and Nader Naguib

International Journal of Pediatric Otorhinolaryngology, 79 (3): 328-331 (2015) IF: 1.186

Objectives: Bell's palsy is considered the most common cause of facial nerve paralysis in children. Although different theories have been postulated for its diagnosis, reactivation of the Varicella zoster virus (VZV) has been implicated as one of the causes of Bell's palsy. The aim of the study was to evaluate the association of Varicella-zoster virus infection with Bell's palsy and its outcome in children.

Methods: A total of 30 children with Bell's palsy were recruited and were assayed for evidence of VZV infection. The severity of facial nerve dysfunction and the recovery rate were evaluated according to House–Brackmann Facial Nerve Grading Scale (HB FGS). Paired whole blood samples from all patients were obtained at their initial visit and 3 weeks later, and serum samples were analyzed for VZV IgG and IgM antibodies using ELISA.

Results: A significantly higher percentage of Bell's palsy patients were seropositive for VZV IgM antibodies than controls (36.6% of patients vs 10% of controls) while for VZV IgG antibodies the difference was statistically nonsignificant. HB FGS in Bell's palsy patients with serologic evidence of VZV recent infection or reactivation showed a statistiacally significant less cure rate than other patients.

Conclusions: VZV reactivation may be an important cause of acute peripheral facial paralysis in children. The appropriate diagnosis of VZV reactivation should be done to improve the outcome and the cure rate by the early use of antiviral treatment.

Keywords: Facial paralysis; Bell's palsy; Zoster sine herpete;Varicella zoster virus.

Dept. of Endemic

888. Sofosbuvir Plus Ribavirin for Treating Egyptian Patients with Hepatitis C Genotype 4

Wahid Doss, Gamal Shiha, Mohamed Hassany, Reham Soliman, Rabab Fouad, Marwa Khairy, Waleed Samir, Radi Hammad, Kathryn Kersey, Deyuan Jiang, Brian Doehle, Steven J. Knox, Benedetta Massetto, John G. McHutchison and Gamal Esmat

Journal of Hepatology, 63: 581-585 (2015) IF: 11.336

Background and Aims: Egypt has the highest prevalence of chronic hepatitis C virus (HCV) infection in the world, and more than 90% of patients are infected with genotype 4 virus. We evaluated the efficacy and safety of the HCV polymerase inhibitor sofosbuvir in combination with ribavirin in HCV genotype 4 patients in Egypt.
Methods: Treatment-naïve or treatment-experienced patients with genotype 4 HCV infection (n = 103) were randomly assigned to receive either 12 or 24 weeks of sofosbuvir 400 mg and ribavirin 1000–1200 mg daily. Randomization was stratified by prior treatment experience and by presence or absence of cirrhosis. The primary endpoint was the percentage of patients with HCV RNA <25 IU/ml 12 weeks after therapy (SVR12).
Results: Among all patients, 52% had received prior HCV treatment and 17% had cirrhosis at baseline. SVR12 rates were 90% (46/51) with 24 weeks and 77% (40/52) with 12 weeks of sofosbuvir and ribavirin therapy. Patients with cirrhosis at baseline had lower rates of SVR12 (63% 12 weeks, 78% 24 weeks) than those without cirrhosis (80% 12 weeks, 93% 24 weeks). The most common adverse events were fatigue, headache, insomnia, and anemia. Two patients experienced serious adverse events (cerebral ischemia, dyspnea). No adverse events resulted in treatment discontinuation.
Conclusion: Sofosbuvir plus ribavirin for 12 or 24 weeks is effective in treating both treatment-naïve and treatment-experienced Egyptian patients with genotype 4 HCV.
Keywords: Antiviral agents; Polymerase inhibitor; Hepatitis C; Sofosbuvir.

889. How to Optimize Hepatitis C Virus Treatment Impact on Life Years Saved in Resource-Constrained Countries

Dorothée Obach, Yazdan Yazdanpanah, Gamal Esmat, Anchalee Avihingsanon, Sahar Dewedar, Nicolas Durier, Alain Attia, Wagida A. Anwar, Anthony Cousien, Pisit Tangkijvanich, Serge Paul Eholié, Wahid Doss, Aya Mostafa, Arnaud Fontanet, Mostafa K. Mohamed and Sylvie Deuffic-Burban

Hepatology, 62: (2015) IF: 11.055

In resource-constrained countries where the prevalence of hepatitis C virus (HCV) disease is usually high, it is important to know which population should be treated first in order to increase treatment effectiveness. The aim was to estimate the effectiveness of different HCV treatment eligibility scenarios in three different countries. Using a Markov model, we estimated the number of life-years saved (LYS) with different treatment eligibility scenarios according to fibrosis stage (F1-F4 or F3-4), compared to base case (F2-F4), at a constant treatment rate, of patients between 18 and 60 years of age, at stages F0/F1 to F4, without liver complications or coinfections, chronically infected by HCV, and treated with pegylated interferon (IFN)/ribavirin or more-efficacious therapies (i.e. IFN free). We conducted the analysis in Egypt (prevalence=14.7%; 45,000 patients treated/year), Thailand (prevalence = 2.2%; 1,000 patients treated/year), and Côte d'Ivoire (prevalence = 3%; 150 patients treated/year). In Egypt, treating F1 patients in addition to ≥F2 patients (SE1 vs. SE0) decreased LYS by 3.9%. Focusing treatment only on F3-F4 patients increased LYS by 6.7% (SE2 vs. SE0). In Thailand and Côte d'Ivoire, focusing treatment only on F3-F4 patients increased LYS by 15.3% and 11.0%, respectively, compared to treating patients ≥F2 (ST0 and SC0, respectively). Treatment only for patients at stages F3-F4 with IFN-free therapies would increase LYS by 16.7% versus SE0 in Egypt, 22.0% versus ST0 in Thailand, and 13.1% versus SC0 in Côte d'Ivoire. In this study, we did not take into account the yearly new infections and the impact of treatment on HCV transmission. *Conclusion*: Our model-based analysis demonstrates that prioritizing treatment in F3-F4 patients in resource-constrained countries is the most effective scenario in terms of LYS, regardless of treatment considered.

890. Comparison of Liver Biopsy and Noninvasive Techniques for Liver Fibrosis Assessment in Patients Infected with HCV-Genotype 4 in Egypt

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Journal of Viral Hepatitis, 22(3): 245-253 (2015) IF: 3.909

In Egypt, as elsewhere, liver biopsy (LB) remains the gold standard to assess liver fibrosis in chronic hepatitis C (CHC) and is required to decide whether a treatment should be proposed. Many of its disadvantages have led to develop noninvasive Methods to replace LB. These new Methods should be evaluated in Egypt, where circulating virus genotype 4 (G4), increased body mass index and co-infection with schistosomiasis may interfere with liver fibrosis assessment. Egyptian CHC-infected patients with G4 underwent a LB, an elastometry measurement (Fibroscan(©)), and serum markers (APRI, Fib4 and Fibrotest(©)). Patients had to have a LB =15 mm length or =10 portal tracts with two pathologists blinded readings to be included in the analysis. Patients with hepatitis B virus co-infection were excluded. Three hundred and twelve patients are reported. The performance of each technique for distinguishing F0F1 vs F2F3F4 was compared. The area under receiver operating characteristic curves was 0.70, 0.76, 0.71 and 0.75 for APRI, Fib-4, Fibrotest© and Fibroscan©, respectively (no influence of schistosomiasis was noticed). An algorithm using the Fib4 for identifying patients with F2 stage or more reduced by nearly 90% the number of liver biopsies. Our Results demonstrated that noninvasive techniques were feasible in Egypt, for CHC G4-infected patients. Because of its validity and its easiness to perform, we believe that Fib4 may be used to assess the F2 threshold, which decides whether treatment should be proposed or delayed.
Keywords: Egypt; Hepatic elastography; Hepatitis C virus; Liver biopsy; Liver fibrosis; Serum markers.

891. miR-1275: A Single MicroRNA That Targets the Three IGF2-mRNA-Binding Proteins Hindering Tumor Growth in Hepatocellular Carcinoma

Injie Omar Fawzy, Mohammed Tarif Hamza, Karim Adel Hosny, Gamal Esmat, Hend Mohamed El Tayebi and Ahmed Ihab Abdelaziz

Febs Letters, 589: (2015) IF: 3.169

This study aimed to identify a single miRNA or miR (microRNA) which regulates the three insulin-like growth factor-2-mRNA-binding proteins (IGF2BP1, 2 and 3). Bioinformatics predicted miR-1275 to simultaneously target the three IGF2BPs, and screening revealed miR-1275 to be underexpressed in hepatocellular carcinoma (HCC) tissues. Transfection of HuH-7 cells with miR-1275 suppressed IGF2BPs expression and all three IGF2BPs were confirmed as targets of miR-1275. Ectopic expression of miR-1275 and knockdown of IGF2BPs inhibited malignant cell behaviors, and also reduced IGF1R protein and mRNA. Finally IGF1R was validated as a direct target of miR-1275. These findings indicate that the tumor-suppressor miR-1275 can control HCC tumor growth partially through simultaneously regulating the oncogenic IGF2BPs and IGF1R.

Keywords: Hepatocellular carcinoma; Insulin-like growth factor 1 receptor (IGF1R); Insulin-like growth factor-2-mrna-binding protein (IGF2BP or IMP); Posttranscriptional regulation; Mir-1275; mirna or mir.

892. Epigenetic Harnessing of HCV Via Modulating the Lipid Droplet-Protein, TIP47, in HCV Cell Models

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Febs Letters, 589: (2015) IF: 3.169

This study aimed at identifying potential microRNAs that modulate hepatic lipid droplets (LD) through targeting the Tail interacting protein of 47 kDa (TIP47) in HCV infection. Bioinformatics analysis revealed that miR-148a and miR-30a potentially target TIP47. Expression profiling showed that both microRNAs were downregulated, while TIP47 was upregulated in liver biopsies of HCV-infected patients. Forcing the expression of both microRNAs in JFH-I infected, oleic acid-treated Huh7 cells, significantly suppressed TIP47 expression and reduced cellular LDs with marked decrease in viral RNA. This study shows that miR-148a and miR-30a, regulate TIP47 expression and LDs in HCV infected cells.

Keywords: miR-148a; miR-30a; Tail interacting protein of 47kDa; Lipid droplets; HCV.

893. New Era for Management of Chronic Hepatitis C Virus Using Direct Antiviral Agents: A Review

Tamer Elbaz, Mohamed El-Kassas and Gamal Esmat

Journal of Advanced Research, 6: 301-310 (2015) IF: 3

The pegylated interferon regimen has long been the lone effective management of chronic hepatitis C with modest response. The first appearance of protease inhibitors included boceprevir and telaprevir. However, their efficacy was limited to genotype 1. Recently, direct antiviral agents opened the gate for a real effective management of HCV, certainly after FDA approval of some compounds that further paved the way for the appearance of enormous potent direct antiviral agents that may achieve successful eradication of HCV

Keywords: Hcv; Direct antiviral agents (DAA); Protease inhibitors; Polymerase inhibitors.

894. Value of Egy-score in Diagnosis of Significant, Advanced Hepatic Fibrosis and Cirrhosis Compared to Aspartate Aminotransferase-to-platelet Ratio Index, Fib-4 and Forns'Index in Chronic Hepatitis C Virus

Mohamed Alboraie, Marwa Khairy, Marwa Elsharkawy, Noha Asem, Aisha Elsharkawy and Gamal Esmat

Hepatology Research, 45 (5): 560-570 (2015) IF: 2.735

Aim*:* Serum markers and developed scores are of rising importance in non-invasive diagnosis of hepatic fibrosis. Aspartate aminotransferase-to-platelet ratio index (APRI), FIB-4 and Forns' index are validated scores used for diagnosis of liver fibrosis. The Egy-Score is a newly developed score for detection of hepatic fibrosis with promising results.We aimed to assess the accuracy of the Egy-Score in the diagnosis of significant fibrosis, advanced fibrosis and cirrhosis compared to APRI, FIB-4 and Forns' in chronic hepatitis C virus (HCV) patients.

Methods*:* A retrospective study including 100 chronic hepatitis C naïve Egyptian patients was performed. Patients were classified according to stages of fibrosis into three groups: significant fibrosis (≥ F2), advanced fibrosis (≥ F3) and cirrhosis (F4). Egy-Score, APRI, FIB-4 and Forns' index were calculated. Regression analysis and receiver–operator curves were plotted to assess the sensitivity, specificity and predictive values for the significant scores with the best cut-off for diagnosis.

Results*:* An Egy-Score of 3.28 or more was superior to APRI, FIB-4 and Forns' index for detecting advanced fibrosis with a sensitivity of 91% and specificity of 78%. An Egy-Score of 3.67 or more was superior to APRI, FIB-4 and Forns' index for detecting cirrhosis with a sensitivity of 82% and specificity of 87%. Forns' index was superior to Egy-Score, FIB-4 and APRI for detecting significant fibrosis.

Conclusion*:* The Egy-Score is a promising, accurate, easily calculated, cost-effective score in the prediction of hepatic fibrosis in chronic HCV patients with superiority over APRI, FIB-4 and Forns' index in advanced hepatic fibrosis and cirrhosis.

Keywords: Aspartate aminotransferase-to-platelet ratio index; Chronic hepatitis C virus; Egy-score; fib-4; forns'; Hepatic fibrosis.

895. Interferon-γ and Interleukin-10 Gene Polymorphisms are Not Predictors of Chronic Hepatitis C (Genotype-4) Disease Progression

Nermine Ahmed Bahgat, Manal Mohamed Kamal, Ashraf Omar Abdelaziz, Mohamed Ahmed Mohye, Hend Ibrahim Shousha, Mae Mohamed ahmed,Tamer Mahmoud Elbaz and Mohamed Mahmoud Nabil

Asian Pacific Journal of Cancer Prevention, 16: 5025-5030 (2015) IF: 2.514

Immunoregulatory cytokines have an influence on hepatitis C virus (HCV) infection outcome. This study aimed to determine whether single nucleotide polymorphisms (SNP) in IFN-γ and IL-10 genes are associated with susceptibility and/or are markers of prognosis regarding chronic hepatitis C outcomes. IFNγ (+874T/A) and IL-10 (-1082G/A) genotypes were determined in 75 HCV genotype 4 patients with different disease severities (chronic hepatitis, n=25, liver cirrhosis and hepatocellular carcinoma (HCC) on top of liver cirrhosis, n=50) and 25 healthy participants using allele-specific polymerase chain reaction. No statistical differences in allele or genotype distributions of IFNγ and IL-10 genes were detected between patients and controls or between patientgroups. No significant difference in the frequency of IL-10 SNP at position -1082 or IFN-γ at position +874T/A was found between chronic HCV genotype 4 and with progression of disease severity in liver cirrhosis or HCC. In Conclusion; interferon-γ and interleukin-10 gene polymorphisms are not predictors of disease progression in patients with chronic hepatitis C (Genotype-4).

Keywords: Chronic hepatitis C; Single nucleotide polymorphism; IFN-γ; IL-10; HCV genotype 4.

896. Application of Data Mining Techniques to Explore Predictors of HCC in Egyptian Patients with HCV-related Chronic Liver Disease

Dalia Abd El Hamid Omran, AbuBakr Hussein Awad, Mahasen Abd El Rahman Mabrouk, Ahmad Fouad Soliman and Ashraf Omar Abdel Aziz

Asian Pacific Journal of Cancer Prevention, 16: 23-27 (2015) IF: 2.514

Background: Hepatocellular carcinoma (HCC) is the second most common malignancy in Egypt. Data mining is a method of predictive analysis which can explore tremendous volumes of information to discover hidden patterns and relationships. Our aim here was to develop a non-invasive algorithm for prediction of HCC. Such an algorithm should be economical, reliable, easy to apply and acceptable by domain experts.

Methods: This cross-sectional study enrolled 315 patients with hepatitis C virus (HCV) related chronic liver disease (CLD); 135 HCC, 116 cirrhotic patients without HCC and 64 patients with chronic hepatitis C. Using data mining analysis, we constructed a decision tree learning algorithm to predict HCC.

Results: The decision tree algorithm was able to predict HCC with recall (sensitivity) of 83.5% and precession (specificity) of 83.3% using only routine data. The correctly classified instances were 259 (82.2%), and the incorrectly classified instances were 56 (17.8%). Out of 29 attributes, serum alpha fetoprotein (AFP), with an optimal cutoff value of =50.3 ng/ml was selected as the best predictor of HCC. To a lesser extent, male sex, presence of cirrhosis, AST>64U/L, and ascites were variables associated with HCC.

Conclusion: Data mining analysis allows discovery of hidden patterns and enables the development of models to predict HCC, utilizing routine data as an alternative to CT and liver biopsy. This study has highlighted a new cutoff for AFP (=50.3 ng/ml). Presence of a score of >2 risk variables (out of 5) can successfully predict HCC with a sensitivity of 96% and specificity of 82%.

Keywords: HCC; HCV-related chronic liver disease; Data mining; Decision tree; Prediction; AFP.

897. Functional and Morphological Myocardial Changes in Hepatitis C Virus Patients with End-Stage Liver Disease

Dalia A. Omran, Noha Hosam E.L. Din Behairy, Khaled Serag Zakaria, Mohamed Mahmoud Nabil and Karim Said

Scandinavian Journal of Gastroenterology, 50: 1135-1143 (2015) IF: 2.361

Background and Objectives: Cardiovascular complications are common in liver transplant recipient. This study aims to evaluate functionaland morphological myocardial changes in hepatitis C virus (HCV) patients with end-stage liver disease (ESLD) by cardiac magnetic resonance (CMR).

Methods: This cross-sectional study included 84 patients with HCV-related ESLD. They were subjected to 2D-echocardiography and CMR. The presence, distribution, and percentage of delayed myocardial enhancement (DME) were estimated.

Results: The mean Model for End-Stage Liver Disease score was 21.5 ± 6.3. In CMR, all patients showed good global left ventricular (LV) systolic function (mean ejection fraction = 66.5 ± 8.6%; range: 55-80) with normal wall thickness and motion. Left ventricle was mildly dilated in 25 patients(30%). Grade I and grade II diastolic dysfunction was detected in 81 patients (96.4%) with dilated left atrium in 25 patients (30%). Variable degrees of DME were detected in 70 patients (83.3%) with mean percentage of DME (%DME) being 19.5 ± 16% (range: 4-52). A significant negative correlation was found between %DME and LV ejection fraction ($r = -0.7$; $p < 0.001$), cardiac output ($r = -0.5$; $p = 0.013$), cardiac index ($r = -0.5$; $p = 0.02$), and serum albumin level ($r = -0.5$; $p = 0.01$). The %DME =19% was associated with 85.7% sensitivity and 85.7% specificity for detection of LV ejection fraction <60% as assessed by echocardiography (area under curve = 0.89; $p = 0.001$).

Conclusion: DME with CMR is a common finding among patients with HCV-related ESLD. The extent of DME is significantly associated with global LV systolic function.

Keywords: Cardiomyopathies; Echocardiography; End-stage liver disease; Magnetic resonance imaging.

898. Microwave Ablation Versus Transarterial Chemoembolization in Large Hepatocellular Carcinoma: Prospective Analysis

Abdelaziz AO, Nabeel MM, Elbaz TM, Shousha HI, Hassan EM, Mahmoud SH, Rashed NA, Ibrahim MM and Abdelmaksoud AH.

Scand J Gastroenterol, 50: 479-484 (2015) IF: 2.361

Objective Limited therapies are offered for large hepatocellular carcinoma (HCC). It carries dismal prognosis and efforts tried changing its management from a palliative to a curative mode. Transarterial chemoembolization (TACE) is a palliative procedure that may have survival benefit if compared to non-management of large lesions. Microwave ablation (MWA) has emerged as a relatively new technique with promise of larger and faster ablation. We aim to evaluate the efficacy and safety of percutaneous MWA versus TACE for large tumors (5-7 cm) and to assess their effects on local tumor progression and survival.

Patients and Methods: Sixty-four patients with large lesions are managed in our multidisciplinary HCC clinic and were divided into two groups treated either by MWA or TACE. Complete

response rate, local recurrence, de novo lesions, and overall survival analysis are compared between both procedures.
Results: Both groups were comparable as regards the demographic and ultrasonographic features. MWA showed higher rates of complete ablation (75%) with fewer sessions, lower incidence of tumor recurrence (p = 0.02), development of de novo lesions (p = 0.03), occurrence of post-treatment ascites (p = 0.003), and higher survival rates (p = 0.04). The mean survival of the microwave group was 21.7 months with actuarial probability of survival at 12 and 18 months 78.2% and 68.4%, respectively. The mean survival of the TACE group was 13.7 months with actuarial probability of survival at 12 and 18 months being 52.4% and 28.6%, respectively.
Conclusion: MWA showed better Results than TACE in the management of large HCC lesions.
Keywords: Hepatocellular carcinoma; Microwave ablation; Survival; Transarterial chemoembolization.

899. Hepatitis C Virus Acquisition Among Egyptians: Analysis of A 10-Year Surveillance of Acute Hepatitis C

Amira Mohsen, Adeline Bernier, Lenaig LeFouler, Elisabeth Delarocque-Astagneau, Mai El-Daly, Sherif El-Kafrawy, Salwa El-Mango, Mohamed Abdel-Hamid, Mohsen Gadallah, Gamal Esmat, Mostafa K. Mohamed and Arnaud Fontanet

Tropical Medicine & International Health, 20: (2015) IF: 2.329

Objective To identify current risk factors for hepatitis C virus (HCV) acquisition among Egyptians.
Methods: Patients with acute HCV were identified through a surveillance system of acute hepatitis in four fever hospitals in Egypt between 2002 and 2012. Case-control analysis was conducted, cases being incident acute symptomatic HCV and controls being acute hepatitis A identified at the same hospitals. The questionnaire covered iatrogenic, community and household exposures to HCV in the 1-6 months prior to onset of symptoms. Multivariate models were built to identify risk factors associated with HCV acquisition among non-drug users and drug users separately.
Results: Among non-drug users, hospital admission was independently associated with acute HCV infection (OR = 4.2, 95% CI = 1.7-10.5). Several iatrogenic procedures, for example admission in a surgery unit, sutures, IV injections and IV infusions, highly correlated with hospital admission, were also associated with acute HCV infection and could have been used in the final model instead of hospital admission. Among drug users, identified risk factors were multiple sexual relations (OR = 4.0, 95% CI = 1.1-14.7), intravenous drug use (OR = 3.9, 95% CI = 1.2-13.0) and shaving at the barbershops (OR = 8.7, 95% CI = 2.4-31.4). Illiteracy and marriage were significant risk factors in both groups.
Conclusion: Invasive medical procedures are still a major risk for acquiring new HCV infections in Egypt, as is illicit drug use in spreading HCV infection.
Keywords: Egipto; Egypt; Egypte; Acute hepatitis C; Epidemiology; Epidemiología; facteurs de risque; Factores de riesgo; Hepatitis C aguda; Hépatite C aiguë; Risk factors; Épidémiologie.

900. Repressing PU.1 By miR-29a* in NK Cells of HCV Patients, Diminishes its Cytolytic Effect on HCV Infected Cell Models

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Human Immunology, 76: (2015) IF: 2.138

Objectives: Natural killer cells are immune safeguards against HCV infection. PU.1 is a pivotal transcription factor in the development of NK cells. This study aimed at studying the regulatory effect of miRNAs on both development and function of NK cells isolated from HCV patients.
Methods: NK cells were isolated from 17 chronic HCV patients and 12 healthy controls; after which miRNA and mRNA were quantified using qRT-PCR. Manipulating miRNA expression using mimics and antagomirs, was performed followed by investigating downstream targets as well as viral abundance.
Results: PU.1 expression levels were upregulated in NK cells of HCV patients. In silico analysis revealed PU.1 to be a potential downstream target of miR-29a(*), where miR-29a(*) overexpression in NK cells caused a significant downregulation in PU.1 mRNA. Forcing miR-29a(*) caused a downregulation of the cytotoxicity determinant NK activating receptor (NKG2D) via upregulation of miR-155. Moreover, perforin-1 mRNA was found to be downregulated upon forcing the expression of miR-29a(*) in NK cells of HCV patients. This decrease in NK cytolytic function was accompanied by an 80% viral load increase in cocultured HCVcc cell models.
Conclusions: This study showed that HCV infection might abrogate NK cytotoxic potential through altering PU.1, NKG2D receptor and perforin molecules.
Keywords: Hcv; Natural killer cells; Pu.1; Mirnas

901. Serum Soluble CD14 in Egyptian Patients with Chronic Hepatitis C: Its Relationship to Disease Progression and Response to Treatment

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Journal of Interferon & Cytokine Research, 35: 563-569 (2015) IF: 2

Hepatitis C virus (HCV) is a major public health problem. Soluble CD14 (sCD14) level was shown to be associated with HCV infection. In this study, we aimed to investigate the relationship between sCD14 concentration and disease progression, as well as the response to pegylated interferon/ribavirin (peg-IFN/RBV) therapy in Egyptian patients with chronic hepatitis C (CHC). The ELISA technique was used to test 80 patients with CHC and 20 healthy control persons for serum levels of sCD14 (pretreatment and after 12 weeks of treatment). CHC patients were 65 males and 15 females. Normal healthy controls included 20 age- and sexmatched volunteers. The mean age of the CHC patients was 39.94 years, while that of the controls was 39.2 years The serum sCD14 level was significantly higher in chronic HCV-infected patients (3.6 – 0.18 mg/mL) compared to healthy control subjects (3.1 – 0.18 mg/mL). The serum sCD14 level was significantly directly correlated with the hepatic fibrosis score (r = 0.24, P = 0.03), histological activity index (r = 0.26, P = 0.02), and serum aminotransferases [r = 0.28,

P = 0.005 for alanine aminotransferase (ALT) and r = 0.30, P = 0.003 for aspartate aminotransferase (AST)]. The pretreatment sCD14 level was not significantly correlated to the treatment response, but it increased after 12 weeks of peg-IFN/RBV therapy and values were significantly higher in nonresponders (P = 0.02). The pretreatment sCD14 level cannot predict the treatment response in chronic HCV patients receiving peg-IFN/RBV therapy. However, the serum sCD14 level after 12 weeks of treatment can serve as a negative predictor of treatment response.
Keywords: Soluble Cd14; Hepatis C; Egyptian patients.

902. Impact of Vitamin D Supplementation on Sustained Virological Response in Chronic Hepatitis C Genotype 4 Patients Treated by Pegylated Interferon/ribavirin

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Journal of Interferon and Cytokine Research, 35(1): 49-54 (2015) IF: 2

The current standard of care therapy (SOC) for chronic HCV is pegylated interferon/ribavirin (Peg-IFN/RBV). Many reports showed the possible role of vitamin D supplementation in augmenting the response to SOC. The aim of this study was to assess the role of vitamin D supplementation on the response to treatment in chronic HCV genotype 4 patients. One hundred and one chronic HCV patients were classified into two groups (Group 1): 51 patients received the SOC therapy consisting of Peg-interferon alfa-2b plus ribavirin, (Group 2): 50 patients received the SOC therapy+vitamin D3 (Cholecalciferol) in a dose of 15,000IU/week during the treatment course. Vitamin D deficiency was found in 95% of patients. No correlation was found between vitamin D levels and stage of fibrosis in the whole population. Vitamin D supplementation had no positive impact on treatment outcome where sustained virological response (SVR) was achieved in 51.2% in group 2 and 71.4% in group 1 by per-protocol analysis and in 44% in group 2 and in 68.6% in group 1 by intention to treat analysis (P value 0.22 and 0.220 respectively). Despite its role in other genotypes, vitamin D supplementation has no significant impact on SVR in HCV Genotype 4 patient. No correlation was found between vitamin D levels and stage of liver fibrosis.
Keywords: HCV; Vit D- SVR- Liver Fibrosis

903. IP-10 Serum Level in Chronic Hepatitis C Virus Patients: Relation to Fibrosis and Response to Combined Interferon/ribavirin Therapy

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Journal of Interferon & Cytokine Research, (2015) IF: 2

Despite the appearance of the direct acting antiviral drugs, pegylated interferon/ribavirin (PEG-IFN/RBV) still has a place in the standard of care (SOC) therapy for chronic HCV4. Studies were conducted to find an accurate prediction in response to SOC therapy. Pretreatment serum interferon-g-inducible protein-10 (IP-10) is an independent predictive factor of sustained virological response (SVR) in HCV1-infected patients. To assess whether the pretreatment serum level of IP-10 influences hepatic fibrosis and PEG-IFN/RBV therapy response, a study was conducted on 88 chronic Hepatitis C virus (HCV) patients who received PEG-IFN/RBV. Patients were subjected to a pretreatment routine laboratory evaluation, liver biopsy, and serum IP-10 assessment. They were followed up for 6 months after cessation of therapy (week 72). Patients were classified into 3 groups according to their response; nonresponders, relapsers, or sustained virological responders. The relation of pretreatment IP-10 with fibrosis and response was assessed. The studied groups were matched regarding their demographic data. There was no statistically significant association between the pretreatment IP-10 level and fibrosis (P = 0.86) and no relation to response was found at week 12, 24, 48, and 72 (P = 0.58, 0.8, 0.47, and 0.43, respectively). Pretreatment IP-10 could not predict either fibrosis or response to PEG-IFN/RIB therapy in chronic HCV Egyptian patients.

904. Value of Microwave Ablation in Treatment of Large Lesions of Hepatocellular Carcinoma

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Journal of Digestive Diseases, 16: 456-463 (2015) IF: 1.959

Objective Thermal ablative therapies continue to acquire to be Favored as a safe and treatment for patients with non resectable hepatocellular carcinoma (HCC). Percutaneous microwave ablative therapy which is a relatively new technique has the advantage in providing faster ablation of larger tumors. This study aimed to evaluate microwave ablation in treatment of large HCC (5-7cm) and to assess its effect on local tumor progression, prognostic outcome and patient's survival.
Methods: In all, 26 patients with large HCC lesions (5-7cm) were managed in the multidisciplinary clinic of Kasr Al Ainy University hospital using microwave ablation. The treatment was performed with the patient under conscious sedation and analgesia and ultrasonography guided using HS AMICA microwave machine, operating at frequency of 2450 MHz and a power up to 100 W. Multiple needle insertions in one or two sessions according to the size of the lesion. Complete ablation rate, local tumor progression and patients, overall survival were analyzed, and the efficacy and safety of MWA were evaluated.
Results: Complete ablation was achieved in 19/ 26 (73.1%) of the lesions. Local tumor progression was recorded in five treated lesions (19.2%). Distant tumor progression within the liver was recorded in six patients (23.1%), with a mean survival of 21.5 months. No procedure related major complications or deaths were observed.
Conclusion: Percutaneous microwave ablation by percutaneous approach is safe and effective in the treatment of large HCC tumors. Patients, survival and local tumor control were acceptable.
Keywords: Hepatocellular (HCC) Carcinoma; Percutaneous microwave ablation (MWA); Survival; Multidisciplinary HCC clinic.

905. Evaluation of microRNAs-29A, 92A and 145 in Colorectal Carcinoma as Candidate Diagnostic Markers: an Egyptian Pilot Study

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Clinics and Research in Hepatology and Gastroenterology, 39: 508-515 (2015) IF: 1.638

Background: Colorectal cancer (CRC) is one of the most common malignant neoplasms in Egypt, and interestingly in young age. Adenomatous polyps and inflammatory bowel diseases (IBD) are considered the commonest pre-malignant lesions for CRC. A possible diagnostic role for different microRNAs on CRC has been suggested by numerous studies. Aim of work: to assess the serum expression of 3 microRNA markers (miR-29a, miR-92a and miR-145) in pre-malignant & malignant colorectal lesions.
Patients and Methods: The 60 patients studied were divided into 4groups; CRC group (25patients), IBD group (11patients), adenomatous polyps group (14 patients) and control group (10 patients). The serum expression of the 3 markers (miR-29a, miR-92a and miR-145) has been assessed by RT-PCR.
Results: All CRC were sporadic cases. Significant down regulation of miR-145 in CRC group was reported at all levels i.e when compared to normal, among the 3 studied groups, and when compared between CRC and non CRC groups. Significant up regulation of miR-29a in CRC was reported when compared to normal, but no significant difference existed either among the 3 studied groups or between CRC and the other 2 groups. All 3 miRNAs studied were positively inter-correlated.
Conclusions: miR-145 may be considered a promising non invasive reliable diagnostic marker in CRC. Extended studies are needed to ascertain the diagnostic role of miRNAs in CRC.
Keywords: Colorectal carcinoma (CRC); Microrna (MIR-); Adenomatous polyps; Inflammatory bowel disease (IBD)

906. Transcriptional Activation of the IGF-II/IGF-1R Axis and Inhibition of IGFBP-3 by miR-155 in Hepatocellular Carcinoma

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Oncology Lettes, 10: (2015) IF: 1.554

Hepatocellular carcinoma (HCC) is characterized by the aberrant expression of a number of genes that govern crucial signaling pathways. The insulin-like growth factor (IGF) axis is important in this context, and the precise regulation of expression of members of this axis is known to be lost in HCC. miR-155 is a well-established oncogene in numerous types of cancer. However, to the best of our knowledge, its effect on the regulation of the IGF axis has not been investigated to date. The present study aimed to elucidate the interactions between miR-155 and key components of the IGF axis, in addition to examining its effect on HCC development. Reverse transcription-quantitative polymerase chain reaction was used to measure the expression of miR-155 in HCC and cirrhotic tissues, in addition to HCC cell lines. Furthermore, the effect of the induction of miR-155 expression on the expression of three members of the IGF axis [IGF II, IGF type-1 receptor (IGF-1R) and IGF-binding protein 3 (IGFBP-3)], was analyzed. Finally, the effect of miR-155 on HCC cell proliferation, migration and clonogenicity was also examined. Quantification of the expression of miR-155 demonstrated that it is upregulated in HCC. Induction of the expression of miR-155 in HCC cell lines led to the upregulation of IGF-II and IGF-IR, and the downregulation of IGFBP-3. In addition, the proliferation, migration and clonogenicity of HCC was increased following induction of miR-155 expression. miR-155 is an oncomiR, which upregulates the oncogenes, IGF-II and IGF-IR, and downregulates the tumor suppressor, IGFBP-3, thereby resulting in increased HCC cell carcinogenicity. Therefore, miR-155 may be a therapeutic target in HCC.
Keywords: Hepatocellular carcinoma; Insulin-like growth factor Ii; Insulin-like growth factor type-1 receptor; Insulin-like growth factor-binding protein 3; Microrna-155.

907. Different Score Systems to Predict Mortality in Living Donor Liver Transplantation: Which is the Winner? the Experience of an Egyptian Center for Living Donor Liver Transplantation

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Transplantation Proceedings, 47: 2897-2901 (2015) IF: 0.982

Introduction: Many scoring systems have been proposed to predict the outcome of deceased donor liver transplantation. However, their impact on the outcome in living donor liver transplantation (LDLT) has not yet been elucidated. This study sought to assess performance of preoperative Model for End-Stage Liver Disease (MELD) score in predicting postoperative mortality in LDLT and to compare it with other scores: MELDNa, United Kingdom End-Stage Liver Disease (UKELD), MELD to serum sodium ratio (MESO), updated MELD, donor age-MELD (D-MELD) and integrated MELD (iMELD).
Methods: We retrospectively analyzed data from 86 adult Egyptian patients who underwent LDLT in a single center. Preoperative MELD, MELDNa, MESO, UKELD, updated MELD, D-MELD, and iMELD were calculated. Receiver-operator characteristic (ROC) curves and area under the curve (AUC) were used to assess the performance of MELD and other scores in predicting postoperative mortality at 3 months (early) and 12 months.
Results: Among the 86 patients, mean age 48 ± 7 years, 76 (88%) were of male sex and 27 (31.4%) had died. Preoperative MELD failed to predict early mortality (AUC = 0.63; P = .066). Comparing preoperative MELD with other scores, all other scores had better predictive ability (P < .05), with D-MELD on the top of the list (AUC = 0.68, P = .016), followed closely by UKELD (AUC = 0.67, P = .025). After that were iMELD, MESO, and MELDNa with the same predictive performance (AUC = 0.65; P < .05); updated MELD had the lowest prediction (AUC = 0.640; P = .04). Moreover, all scores failed to predict mortality at 12 months (P > .05).
Conclusions: Preoperative MELD failed to predict either early or 1-year mortality after LDLT. D-MELD, UKELD, MELDNa, iMELD, and MESO could be used as better predictors of early mortality than MELD; however, we need to develop an effective score system to predict mortality after LDLT.
Keywords: Prediction; Ldlt; Score systems; Mortality.

908. Evaluation of Fluvastatin in Combination with the Standard of Care Therapy (PEG-IFN/Ribavirin) in Egyptian Patients with Hepatitis C Virus

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Turkish Journal of Gastroenterology, 26: 511-516 (2015) IF: 0.779

Background/Aims: Cholesterol biosynthesis suppresses the replication of HCV-1b replicons, thus influencing hepatitis C virus (HCV) natural history. This study aimed at comparing the efficacy and safety of fluvastatin (FLV) as an adjuvant therapy to the standard of care (SOC) therapy, i.e., pegylated interferon (PEG-IFN) and ribavirin, for the treatment of HCV patients.
Materials and Methods: Sixty HCV patients were enrolled and allocated to either group I, who received the triple therapy (fluvastatin + SOC), or group II, who received SOC; the duration for both treatments was 48 weeks. All patients were subjected to pretreatment liver biopsy and monthly biochemical tests (liver profile, CBC), and quantitative HCV-RNA test was performed at weeks 0, 4, 12, 48, and 72.
Results: All virological responses were higher in group I than in group II, with no statistical difference. Group Ishowed no manifestations of hepatotoxicity.
Conclusion: Fluvastatin yielded a borderline, significantly higher complete early virological response than SOC; therefore, it is a safe adjuvant to the SOC therapy.
Keywords: Hepatitis C virus; Standard of care; Fluvastatin; Rapid virological response; Early virological response; Sustained virological response.

909. Diagnostic Value of Vascular Endothelial Growth Factor and Interleukin-17 in Association with Molecular Diagnosis of Wuchereria Bancrofti Infection

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Asian Pacific Journal of Tropical Disease, 5: 600-603 (2015)

Objective To explore effective diagnosis of Wuchereria bancrofti through DNA-based techniques followed by assessment of vascular endothelial growth factor concentration (VEGF-C) and interleukin 17 (IL-17) as indicators for lymphatic endothelial cell activation, proliferation and massive tissue reaction that may be a good indicator for ongoing lymphatic filariasis.
Methods: Blood samples were collected from 38 patients: 23 males (60.5%) and 15 females (39.5%) with filariasis and from controls (60 from a non-endemic and 22 from endemic areas). PCR was used to prove infection. A specific and sensitive ELISA was used to determine serum IL-17 and VEGF-C.
Results: A total of 28 patients (46.7%) were positive by PCR, while 10 patients (16.7%) were negative by PCR. Serum level of vascular endothelial growth factor was significantly high in acute cases [(2 147.00 ± 556.00) pg/mL] and in cases of early elephantiasis [(1 950.00 ± 638.00) pg/mL] and lowest in cases of late elephantiasis, endemic and non endemic controls [(1 238.00 ± 443.00), (807.11 ± 6.20) and (857.00 ± 91.50) pg/mL respectively]. Serum IL-17 was found to be significantly high in acute cases, early elephantiasis and late elephantiasis cases [(8 601 ± 1131), (7 867 ± 473) and (6 593 ± 378) pg/mL respectively] when compared to endemic controls [(3 194 ± 1 500 pg/mL)] and non endemic controls [(3 416 ± 1 101) pg/mL].
Conclusions: VEGF-C and its inducing factor IL-17 are expected to gain more importance in filariasis. Targeting such factors might ameliorate the pathology in chronic filariasis
Keywords: Lymphatic Filariasis Dna-Based Diagnosis Vascular Endothelial Growth Factor Interleukin-17.

910. Epstein–Barr virus and Interleukin-28B polymorphism in the prediction of response to interferon therapy in hepatitis C patients

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Arab Journal of Gastroenterology, 16: 84–89 (2015)

Background and study aims: In chronic hepatitis C virus (HCV), viral and host factors are known to be predictors for anti-viral therapy. IL-28B genotype strongly influences treatment outcome, while Epstein–Barr virus (EBV) co-infection could accelerate the course of chronic HCV infection. This study was conducted to assess whether EBV co-infection adds to the predictive value of IL-28B.
Patients and methods: A total of 105 patients with chronic HCV were classified according to their response to treatment into two groups: 38 sustained virological responders (SVRs) and 67 nonresponders (NRs). Collected sera at baseline and follow-up (FUP) were used for assessing EBV antibodies by enzymelinked immunosorbent assay (ELISA) and the expression of EBV genes (BNLF-1, BZLF-1, and EBER-2) by polymerase chain reaction (PCR). Collected peripheral blood was used for detecting IL-28B rs.12979860 single-nucleotide polymorphism.
Results: Regarding IL-28B genotype frequencies, a significant difference ($p = 0.003$) was observed between SVRs (C/C = 51.4%, C/T = 48.6%, T/T = 0%) and NRs (C/C = 25%, C/T = 55%, T/T = 20%).
On assessing EBV infection at baseline and FUP, it was found that 61% and 55% were positive, respectively, with no significant difference between SVRs and NRs. As for anti-viral capsid antigen (VCA) antibodies, the NRs had significantly higher baseline anti-VCA immunoglobulin M (IgM) levels than SVRs ($p = 0.01$). While FUP anti-Epstein–Barr nuclear antigen-1 (EBNA-1) IgG reported a significant decline within SVR patients ($p = 0.02$), neither baseline nor FUP anti-VCA IgG levels showed a statistically significant viral response. Finally, on comparing EBV markers with CC versus CT and TT genotypes, it was found that FUP anti- VCA IgG levels were significantly increased in CC genotype ($p = 0.003$).
Conclusion: Interleukin-28B polymorphism could be a possible predictor of response to pegylated interferon/ribavirin therapy (PEG-IFN/RBV). Furthermore, co-infection with EBV did not affect the response to IFN-based therapy in HCV-infected patients.
Keywords: Epstein-barr virus; Interleukin-28B; HCV; SVR; NR; Co-infection.

Dept. of Forensic & Toxicology

911. Paraoxonase 1 and Cytochrome P450 Polymorphisms in Susceptibility to Acute Organophosphorus Poisoning in Egyptians

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Neurotoxicology, 51: 20-26 (2015) IF: 3.379

Background: Organophosphates are the basis of many insecticides, herbicides, and nerve agents. They were listed as highly acutely toxic agents. Findings in knockout mice suggest that paraoxonase 1 may modulate the toxicity resulting from exposure to organophosphorus compounds. In human, there is no enough data about genetic modulation of acute organophosphorus intoxication. CYP2D6 is involved in the metabolism of about 30% of xenobiotics. Prompt accurate management of OP acute intoxication can promote patient's survival.

Design and Methods: Forty acute organophosphorus intoxicated patients were divided according to presence of clinical toxicity manifestations and serum level of pseudo-cholinesterase into two groups of acute symptomatic and acute asymptomatic patients. A third group of 29 healthy volunteers served as control. Paraoxonase 1 Q192R and CYP2D6 G1934A polymorphisms, (QQ, QR, and RR for PON1) and (GG, GA, and AA for CYP2D6), were studied using polymerase chain reaction-restriction fragment length polymorphism technique. Serum paraoxonase 1 and pseudo-cholinesterase activities were measured spectrophotometrically.

Results: Serum pseudo-cholinesterase was significantly reduced in both acute intoxication groups compared to the controls ($p = 0.000$). Paraoxonase 1 was significantly reduced in the symptomatic acute intoxication patients in comparison to the asymptomatic group ($p = 0.002$). There was a significant increase in paraoxonase 1 192 RR genotype and R allele in the symptomatic patients in comparison to the controls and asymptomatic patients ($p = 0.006$ and $p = 0.01$, respectively). For CYP2D6 G1934A genotypes and alleles, no significant difference was found between groups ($p = 0.3$ and $p = 0.18$, respectively). However, one case of the two recorded fatalities was for a symptomatic female patient with the only traced AA genotype. The combination of both single nucleotide polymorphisms revealed a significant distribution difference between groups, with QQ + GG genotypes being more represented in the controls, while RR + GA genotypes were exclusively present in the group of symptomatic patients ($p = 0.04$), none of the participants was found to have RR + AA genotypes. Some nicotinic (fasciculation and weakness), and muscarinic symptoms (bronchospasm, salivation, lacrimation, and diarrhea), increased with high significance in the symptomatic group compared to the asymptomatic one ($p < 0.001$ for all). Convulsions also showed significant increase ($p = 0.02$).

Conclusion: Paraoxonase 1 Q192R modulates patient's response, and CYP2D6 may be related to the acute organophosphorus intoxication in the context of other genetic-environmental factors. Paraoxonase 1 enzyme level is related to symptom severity in acute OP poisoning, while pseudo-cholinesterase level indicates exposure to OP rather than severity of clinical manifestations.

Keywords: Paraoxonase1; CYP2D6; Acute organophosphorus intoxication.

Dept. of Histology

912. Intrathecal Transplantation of Autologous Adherent Bone Marrow Cells Induces Functional Neurological Recovery in A Canine Model of Spinal Cord Injury

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Cell Transplantation, 24: 1813-1827 (2015) IF: 3.127

Spinal cord injury (SCI) Results in demyelination of surviving axons, loss of oligodendrocytes, and impairment of motor and sensory functions. We have developed a clinical strategy of cell therapy for SCI through the use of autologous bone marrow cells for transplantation to augment remyelination and enhance neurological repair. In a preclinical large mammalian model of SCI, experimental dogs were subjected to a clipping contusion of the spinal cord. Two weeks after the injury, GFP-labeled autologous minimally manipulated adherent bone marrow cells (ABMCs) were transplanted intrathecally to investigate the safety and efficacy of autologous ABMC therapy. The effects of ABMC transplantation in dogs with SCI were determined using functional neurological scoring, and the integration of ABMCs into the injured cords was determined using histopathological and immunohistochemical investigations and electron microscopic analyses of sections from control and transplanted spinal cords. Our data demonstrate the presence of GFP-labeled cells in the injured spinal cord for up to 16 weeks after transplantation in the subacute SCI stage. GFP-labeled cells homed to the site of injury and were detected around white matter tracts and surviving axons. ABMC therapy in the canine SCI model enhanced remyelination and augmented neural regeneration, resulting in improved neurological functions. Therefore, autologous ABMC therapy appears to be a safe and promising therapy for spinal cord injuries.

Keywords: Autologous adherent bone marrow-derived cell therapy; Spinal cord injury (SCI); Canine; Intrathecal; Remyelination.

Dept. of Internal Medicine

913. Plasma Adiponectin and Carotid Intima–media Thickness in Non-obese Patients with Type 2 Diabetes

Aasem Saif, Alaa Abdelhamid, Maha Assem and Shrook Mousa

Journal of Diabetes and Its Complications, 29: 808-810 (2015) IF: 3.005

Aim We assessed the correlation between plasma adiponectin levels and carotid intima media thickness (IMT), as a marker of atherosclerosis, in non-obese patients with type 2 diabetes.

Methods The study group included 112 (60 males and 52 females) non-obese Egyptian patients with type 2 diabetes. Fasting plasma adiponectin was measured using ELISA technique. Carotid IMT was assessed using high-resolution color-coded Doppler ultrasonography. Forty age, sex and weight matched normal Egyptian subjects were included in the study as a control group.

Results A non-significant inverse correlation was found between plasma adiponectin levels and carotid IMT in the study group (p = 0.054). Multiple regression analysis revealed that plasma adiponectin was not a determinant of carotid IMT in the study group (p = 0.061).
Conclusion The inverse relation between plasma adiponectin and carotid IMT in type 2 diabetes could be explained, at least partially, by obesity.
Keywords: Adiponectin, Carotid intima–media thickness; Type 2 diabetes; Atherosclerosis; Doppler ultrasonography.

914. Retinopathy is A Strong Determinant of Atherosclerosis in Type 2 Diabetes: Correlation with Carotid Intima Media Thicknes

Aasem Saif, Sherif Karawya and Alaa Abdelhamid

Endocrine Practice, 21: 226-230 (2015) IF: 2.811

Objective We investigated the correlation between the severity of diabetic retinopathy (DR) and carotid intima media thickness (IMT) as a marker of atherosclerosis in patients with type 2 diabetes.
Methods: The study group consisted of 140 normotensive Egyptian patients (68 males and 72 females) with type 2 diabetes and DR. Carotid IMT was evaluated using high-resolution B-mode ultrasonography. DR was assessed and graded using colored fundus photography and fundus fluorescein angiography, as either nonproliferative DR (NPDR) or proliferative DR (PDR).
Results: Carotid IMT was greater in patients with PDR compared to those with NPDR (1.094 ± 0.142 mm vs. 0.842 ± 0.134 mm; P<.001). Carotid IMT showed positive correlation with diabetes duration (P<.01), systolic blood pressure (P<.001), diastolic blood pressure (P<.01), fasting blood glucose (P<.01), postprandial blood glucose (PPBG) (P<.001), glycated hemoglobin (P<.01), total cholesterol (P<.01), triglycerides (TGs) (P<.001), and DR (P<.0001). No significant difference was found between males and females in any of the studied parameters. Multiple regression analysis revealed that the determinants of carotid IMT in the studied group were age (P<.01), PPBG (P<.01), TGs (P<.001), and DR (P<.0001).
Conclusion: Our study proves that both NPDR and PDR are strong determinants of carotid IMT and atherosclerosis in patients with type 2 diabetes.
Keywords: Diabetic retinopathy; Carotid intima-media thickness; Atherosclerosis; Type 2 diabetes.

915. Low-Density Lipoprotein Receptor Genetic Polymorphism in Chronic Hepatitis C Virus Egyptian Patients Affects Treatment Response

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World Journal of Gastroenterology, 21: 11141-11151 (2015) IF: 2.369

Aim: To correlate a genetic polymorphism of the low-density lipoprotein (LDL) receptor with antiviral responses in Egyptian chronic hepatitis C virus (HCV) patients.
Methods: Our study included 657 HCV-infected patients with genotype 4 who received interferon-based combination therapy. Patients were divided into two groups based on their response to therapy: 356 were responders, and 301 were non-responders. Patients were compared to 160 healthy controls. All patients and controls underwent a thorough physical examination, measurement of body mass index (BMI) and the following laboratory tests: serum alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, albumin, total bilirubin, direct bilirubin, prothrombin time, prothrombin concentration, INR, complete blood count, serum creatinine, fasting blood sugar, HCV antibody, and hepatitis B surface antigen. All HCV patients were further subjected to the following laboratory tests: HCV-RNA using quantitative polymerase chain reaction (PCR), antinuclear antibodies, thyroid-stimulating hormone, an LDL receptor (LDLR) genotype study of LDLR exon8c.1171G>A and exon10c.1413G>A using real-time PCR-based assays, abdominal ultrasonography, ultrasonographic-guided liver biopsy, and histopathological examination of liver biopsies. Correlations of LDL receptor polymorphisms with HAI, METAVIR score, presence of steatosis, and BMI were performed in all cases.
Results: There were no statistically significant differences in response rates between the different types of interferon used or LDLR exon10c.1413G>A. However, there was a significant difference in the frequency of the LDL receptor exon8c.1171G>A genotype between cases (AA: 25.9%, GA: 22.2%, GG: 51.9%) and controls (AA: 3.8%, GA: 53.1% and GG: 43.1%) (P < 0.001). There was a statistically significant difference in the frequency of the LDLR exon 8C:1171 G>A polymorphism between responders (AA: 3.6%, GA: 15.2%, GG: 81.2%) and non-responders (AA: 52.2%, GA: 30.6%, GG: 17.2%) (P < 0.001). The G allele of LDL receptor exon8c.1171G>A predominated in cases and controls over the A allele, and a statistically significant association with response to interferon was observed. The frequency of the LDLR exon8c.1171G>A allele in non-responders was: A: 67.4% and G: 32.6 vs A: 11.2% and G: 88.8% in responders (P < 0.001). Therefore, carriers of the A allele exhibited a 16.4 times greater risk for non-response. There was a significant association between LDL receptors exon8 c.1171G>A and HAI (P < 0.011). There was a significant association between LDL receptors exon8c.1171G>A and BMI. The mean BMI level was highest in patients carrying the AA genotype (28.7 ± 4.7 kg/m2) followed by the GA genotype (28.1 ± 4.8 kg/m2). The lowest BMI was the GG genotype (26.6 ± 4.3 kg/m2) (P < 0.001). The only significant associations were found between LDL receptors exon8 c.1171G>A and METAVIR score or steatosis (P < 0.001).
Conclusion: LDL receptor gene polymorphisms play a role in the treatment response of HCV and the modulation of disease progression in Egyptians infected with chronic HCV.
Keywords: Hepatitis C virus; Genetic polymorphisms; Low-density lipoprotein receptor; Egypt; Hepatitis C virus response to treatment.

916. Evidence of Association of Interleukin-23 Receptor Gene Polymorphisms with Egyptian Rheumatoid Arthritis Patients

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Human Immunology, 76: 417-420 (2015) IF: 2.138

Background: The identification of additional genetic risk factor is an on-going process that will aid in the understanding of rheumatoid arthritis (RA) aetiology. A genome-wide association

scan in Crohn's (CD) disease highlighted the interleukin-23 receptor (IL23R) gene as a susceptibility factor. Since the IL-23/ IL-17 pathway is known to associate with other autoimmune disease, including rheumatoid arthritis and systemic sclerosis, we hypothesised that IL23R could be a shared susceptibility gene. The rare allele of IL23R single nucleotide polymorphism (SNP) rs11209026 (Arg381Gln) confers strong protection against CD. Our aim was to analyse IL23R SNP (rs11209026, rs2201841, and rs10889677) and to detect its association with RA in Egyptian patients.

Methods: A group of Egyptian patients with RA (n = 120) and apparently healthy persons as controls (n = 120) was genotyped for rs11209026, rs2201841 and rs10889677 by real time/polymerase chain reaction (real-time/PCR) for the first SNP and restriction fragment length polymorphism/PCR (RFLP/ PCR) in the last two SNPs.

Results: Our data emphasise that the AA genotype of rs11209026 (Arg381Gln) was significantly associated with RA patients compared to the controls (P value = 0.001).We did not find any significant association between either rs2201841 or rs10889677 and the development of rheumatoid arthritis (P value = 1.000 & 0.562 respectively).

Conclusion: Our **Results** suggest that IL23 receptor AA genotype variant of rs11209026 would contribute to RA aetiology; consequently, it might be a genetic marker for RA. We need to address the subgroup of patients who will benefit from the selective suppression of the IL23 signalling which would represent new perspectives toward a personalized therapy of RA patients by further studies.

Keywords: IL23; IL23 Gene polymorphism; Rheumatoid arthritis.

917. Tissue Inhibitors of Metalloproteinase-1 and 2 and Obesity Related Non-alcoholic Fatty Liver Disease: is There A Relationship?

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Digestion, 92: 130-137 (2015) IF: 2.097

Background/Aims: Non-alcoholic fatty liver disease is a spectrum of clinical conditions, including simple steatosis and non-alcoholic steatohepatitis (NASH). The aim of the study is to evaluate the tissue inhibitors of metalloproteinase- 1 and 2 (TIMPs) as noninvasive predictors of NASH.

Methods: Three groups were included in the study. Obese patients (n = 30) with normal liver enzymes were included in group I and obese patients (n = 30) with elevated liver enzymes with liver biopsy–based diagnosis of NASH were included in group II. Age-matched subjects (n = 30) formed the control as group III. The lipid profile, liver enzyme levels and levels of TIMPs were compared among all the patients and subjects

Results: Comparison of groups I and II showed significantly elevated levels of TIMP-1 and TIMP-2 in group II as compared to group I ($p < 0.05$). Similarly, comparison between groups II and III showed significantly increased levels of TIMP-1 and TIMP-2 in group II as compared to group III ($p < 0.05$). TIMP-1 (sensitivity 96.7%, specificity 100%) and TIMP-2 (sensitivity 93.3%, specificity 100%) showed high accuracy in NASH diagnosis.

Conclusion: TIMP-1 and TIMP-2 may be considered noninvasive markers for the diagnosis of NASH.

Keywords: Noninvasive diagnosis of nash; Tissue inhibitors of metalloproteinase; NAFLD; NASH.

918. Disease Characteristics of Systemic Sclerosis Among Egyptian Patients

Mohamed El Basel and Noha Khalil

Kasr Al Aini Medical Journal, 21: 41-46 (2015) IF: 2

Introduction Scleroderma, or systemic sclerosis (SSc), is a chronic connective tissue disease that has been classifi ed as one of the autoimmune rheumatic diseases. The usual hallmarks of SSc are autoimmunity, infl ammation, widespread small-vessel vasculopathy affecting multiple vascular beds, and progressive interstitial and vascular fi brosis in the skin and internal organs. Aim of the work The aim of the study was to determine the disease characteristics and frequency of different clinical manifestations among Egyptian patients.

Patients and Methods Seventy-fi ve patients with SSc, all fulfi lling the criteria of the American College of Rheumatology for classifi cation of scleroderma, were selected for this study. They were being followed up in Cairo University Internal Medicine department. The patients' data were collected by a review of their medical records. We compared the frequency of symptoms in scleroderma patients with both diffuse cutaneous and limited cutaneous sclerosis (dcSSc and lcSSc).

Results Fourteen patients out of 75 (18.7%) had dcSSc and 61/75 (81.3%) had lcSSc. We found that within the limited subtype 11/61 (18%) were male and 50/61 (82%) were female, with a male to female ratio of 1: 4.6. Within the diffuse subtype, 3/14 (21.4%) were male and 11/14 (78.6%) were female, with a male to female ratio of 1: 3.7. Raynaud's phenomenon was the fi rst presenting manifestation (in 77.3%), followed by arthritis (in 12%) and skin tightness (in 9.3%).

Conclusion SSc is more common in the female population than in the male population. lcSSc is more common than dcSSc.

Keywords: Diffuse cutaneous systemic sclerosis; Limited cutaneous systemic sclerosis; Systemic sclerosis.

919. Diagnostic Usefulness of the Random Urine Na/K Ratio in Predicting Therapeutic Response for Diuretics in Cirrhotic Patients with Ascites

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Kasr Al Ainy Medical Journal, 21: 60-65 (2015) IF: 2

Ascites is a major complication of liver cirrhosis which carries a poor prognosis. Diuretics are used in treatment of ascites in addition to salt restriction. Monitoring of diuretic response can be achieved by measurement of 24 hours urinary sodium. The aim of this study is to evaluate the accuracy of using spot urinary sodium/potassium ratio as a reliable alternative to 24 hours urinary sodium in assessment of dietary sodium compliance in patients with liver cirrhosis receiving diuretics. This study was carried out on 60 patients presenting with liver cirrhosis and ascites, admitted at Cairo University Hospitals. All the patients were subjected to full history taking, clinical examination, laboratory investigations including liver function tests, renal function tests, 24 hours urine sample (for measuring of sodium) and spot urine sample (for sodium and potassium). The studied

patients were divided into 2 groups: diuretic resistant groups (those with 24 hours urinary sodium < 78 mEq) and diuretic sensitive group (with 24 hours urinary sodium > 78 mEq). Patients in diuretic resistant group were 18 patients (30%) and those in diuretic sensitive group were 42 patients (70%). The present study revealed that spot urine Na/K ratio was significantly lower in patients in the diuretic resistant group (2.4±2.2) than in the sensitive group (4.7± 2.3) (P<0.05). The cut off point of Na/K ratio that showed highest accuracy was 3.0. The present study showed also more deterioration of liver function in diuretic resistant patients compared to diuretic sensitive patients. This was noticed in the form of higher Child Pugh score, higher INR, higher billirubin, and lower serum albumin. Conclusion this study revealed highly significant correlation between 24 hours urinary sodium and spot urine sodium/potassium ratio with sensitivity 75%, specificity 91.67% at cutoff point of 3.

Keywords: Urine Na/K ratio; Diuretics in cirrhotic patients; Ascites.

920. Plasma Osteopontin Level in Chronic Liver Disease and Hepatocellular Carcinoma

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Hepatitis Monthly, 15(9): 10-10 (2015) IF: 1.932

Background: Osteopontin (OPN) is a secreted glycoprotein and is frequently associated with various tumors. Objectives: We sought to investigate the clinical usefulness of the level of plasma OPN, compared to a-fetoprotein (AFP), as a biomarker for hepatocellular carcinoma (HCC) and to evaluate its diagnostic value in nonalcoholic fatty liver disease (NAFLD) and its relationship with clinical and laboratory features of HCC and Nafld.

Patients and Methods: The study was performed on 120 subjects classified into 5 groups: Group I included 25 chronic non-cirrhotic hepatitis C virus (HCV)-infected patients; Group II encompassed 25 patients with chronic HCV infection with liver cirrhosis; Group III comprised 25 patients with chronic HCV with liver cirrhosis and HCC; Group IV was comprised of 25 patients with NAFLD; and Group V consisted of 20 healthy age- and sex-matched controls. All the participants were subjected to history taking and clinical and abdominal ultrasonographic examinations as well as the following laboratory investigations: liver function tests, complete blood count, blood sugar, hepatitis B surface antigen, hepatitis C virus antibodies, HCV-RNA by qualitative polymerase chain reaction (for Groups I, II, and III) and serum AFP and plasma OPN levels.

Results: There were statistically significant differences in plasma OPN levels between the HCC group (401 ± 72 ng/mL) and the other groups, between the cirrhotic group (258.3 ± 35 ng/mL) and the non-cirrhotic group (HCV group, 168.7 ± 41 ng/mL; fatty liver group, 106.7 ± 35 ng/mL), and between the chronic non-cirrhotic HCV group and the fatty liver group (I and IV) and the controls (35.1 ± 6 ng/mL). In the HCC group, the diagnostic value of OPN was comparable to that of AFP at a cutoff value of 280 ng/mL, achieving sensitivity, specificity, and overall accuracy of 100%, 98%, and 96%, respectively. Regarding the validity of plasma OPN as a predictor of fatty change, our Results revealed a diagnostic accuracy of 50% with 70% sensitivity, 45% specificity, 50% positive predictive value, and 75% negative predictive value at a cutoff value of 134 ng/mL.

Conclusions: Plasma OPN is comparable to AFP as a diagnostic marker and is related to the severity of liver involvement in HCC patients. Plasma OPN is of diagnostic potential value in NAFLD.

Keywords: Osteopontin; Hepatocellular carcinoma; Fatty liver.

921. Relation Between Glutathione S-transferase Genes (GSTM1, GSTT1, and GSTP1) Polymorphisms and Clinical Manifestations of Sickle Cell Disease in Egyptian Patients

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Hematology, 20: 598-606 (2015) IF: 1.253

Objectives: Clinical manifestations of sickle cell disease (SCD) result from sickling of Hb S due to oxidation, which is augmented by accumulation of oxygen-free radicals. Deficiencies in normal antioxidant protective mechanism might lead to clinical manifestations of SCD like vaso-occlusive crisis (VOC) and acute chest syndrome (ACS). The glutathione system plays an important role in the removal of endogenous products of peroxidation of lipids, thus protecting cells and tissue against damage from oxidative stress. Impairment of the glutathione system due to genetic polymorphisms of glutathione S-transferase (GST) genes is expected to increase the severity of SCD manifestations. This report describes a case control study aimed at studying the ethnic-dependent variation in the frequency of GST gene polymorphisms among participants selected from the Egyptian population and to find out the association between GST gene polymorphisms and the severity of SCD manifestations.

Methods: We measured the frequency distribution of the three GSTs gene polymorphisms in 100 Egyptian adult SCD patients and 80 corresponding controls. GSTM1 and GSTT1 genotypes were determined by multiplex polymerase chain reaction (PCR). GSTP1 genotyping was conducted with a PCR-restriction fragment length polymorphism assay.

Results: The GSTM1 null genotype was significantly associated with ACS and VOC (P= 0.03 and 0.01, respectively). The GSTT1 null genotype was associated with significantly increased requirement of blood transfusion (P= 0.01). Absence of both GSTM1 and GSTT1 genes was significantly associated with pulmonary hypertension (P = 0.04). The non-wild-type GSTP1 polymorphism was not associated with clinical manifestations of SCD. Discussion: Some GST gene polymorphisms were significantly associated with the worsening of the clinical manifestations of SCD.

Keywords: Sickle cell disease; Glutathione s-transferase genes polymorphisms; Acute chest syndrome; Vaso-occlusive crisis.

922. Comparison of Different Scoring Systems in Predicting Short-Term Mortality after Liver Transplantation

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Transplantation Proceeding, 47(4): 1207-12010 (2015) IF: 0.982

Background: Many scoring systems have been used in predicting the outcomes of liver transplantations. The aim of this study was to compare between 4 scoring systems-Sequential Organ Failure Assessment (SOFA), Model for End-Stage Liver Disease, Acute Physiology and Chronic Health Evaluation II, and

Child Turcotte-Pugh -among patients who underwent living-donor liver transplantation (LDLT) seeking to evaluate the best system to correlate with post-operative outcomes.
Methods: This study retrospectively reviewed the medical records of 53 patients who had received LDLT in a tertiary care hospital from January 2005 to December 2010. Demographic, clinical, and laboratory data were recorded. Each patient was assessed by use of 4 scoring systems before transplantation and on post-operative days 1 to 7 and at 3 months.
Results: The overall 3-month survival rate was 64%. The pre-transplant SOFA score had the best discriminatory power; moreover, the SOFA score on post-operative day 7 had the best Youden index (.875). The survival rate at 3-month follow-up after liver transplantation differed significantly (P = .00023, highest area under the receiver operator characteristic curve = .952) between patients who had SOFA scores <8 and those had SOFA score >8 on post-liver transplant day 7. This study also demonstrated that respiratory rate (P = .017) and serum bilirubin level (P = .048) and duration of intensive care unit stay (P = .04) are significant risk factors related to early mortality after LDLT.
Conclusions: The pre-transplant SOFA score was a statistically significant predictor of 3-month mortality; SOFA score on post-liver transplant day 7 had the best discriminative power for predicting 3-month mortality.

923. Serum Fetuin A Levels: are They A Reliable Marker for Hepatic Steatosis and Regional Adiposity in Renal Transplant Recipients?

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Transplantation Proceedings, 47: 2703-2706 (2015) IF: 0.982

Background Fetuin A is a protein expressed in the liver and it is an important inhibitor of ectopic calcification. High levels of fetuin A correlate with insulin resistance, hepatic steatosis, and regional adiposity in the general population. The association between hepatic steatosis and fetuin A level in renal transplant recipients (RTRs) remains unclear. Aim The aim of this study was to explore the relationships between fetuin A, hepatic steatosis, and regional adiposity in RTRs.
Methods Data from 44 patients with normal renal functions were included, all subjected to history taking for clinical data, assessment of central obesity and regional adiposity, assessment of hepatic steatosis using abdominal ultrasound (US), and measurements of serum fetuin A concentration using enzyme-linked immunosorbent assay (ELISA) kits.
Results Our study included 20 females (45.4%) and 24 males (54.6%) with mean age of 41.26 ± 11.2 years. Twenty-four subjects had hepatic steatosis. Fetuin A level in RTRs with hepatic steatosis with a mean of 1642.92 ± 358.91 is significantly higher (P < .001) than those without hepatic steatosis with a mean of 711.74 ± 57.85. Serum fetuin A level was positively correlated with regional adiposity (P = .021) and hepatic steatosis grade (P = .017). Fetuin A level increased with increased duration after renal transplantation (P < .001). The best cutoff value for detecting entrance into phase 3 or 4 steatosis is fetuin of 1862 with sensitivity of 88.9% and specificity of 87.7%.
Conclusions Fetuin A is positively correlated with hepatic steatosis and regional adiposity in RTRs. Fetuin increases with increased duration after renal transplantation. Accordingly it may be used as a marker for hepatic steatosis and regional adiposity in these patients.
Keywords: Fetuin A; Renal transplant: Hepatic steatosis.

924. Doppler Assessment of Renal Hemodynamic Alterations in Homozygous Sickle Cell Disease and Sickle β-thalassemia

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Ultrasonic Imaging, 37: 258-264 (2015) IF: 0.912

We evaluated the renal vascular indices in children and adolescents with sickle cell disease (SCD) using Doppler ultrasonography. We also assessed the renal hemodynamics alterations in patients with homozygous SCD and sickle beta-thalassemia (sickle β-thalassemia). We studied 75 patients (age range = 3-20 years; M = 9.95 ± 4.15) with SCD: 42 patients suffering from homozygous SCD and 33 patients diagnosed with sickle β-thalassemia. Thirty, age- and sex-matched, normal subjects were also included as a control group. Both patients and control groups had Doppler assessment of pulsatility (PI) and resistivity (RI) indices of main renal, segmental, interlobar, and arcuate arteries. Both PIs and RIs were significantly higher in SCD patients, compared with the control group. Among patients, PIs and RIs in the main renal, segmental, interlobar, and arcuate arteries were significantly higher in patients with homozygous SCD as compared with those with sickle β-thalassemia (p values <0.01, <0.001, <0.001, and <0.001 for PIs and <0.001, <0.001, <0.001, and <0.01 for RIs, respectively). We concluded that renal vascular resistance is raised in children and adolescents with SCD. This is more pronounced in patients with homozygous SCD as compared with those with sickle β-thalassemia.
Keywords: Doppler ultrasonography; Renal arteries; Resistivity index; Pulsatility index; Sickle cell disease; Sickle β-Thalassemia.

925. The Skin Microcirculatory Changes in the Normal and Hypertensive Elderly

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European Geriatric Medicine, 6: 7-10 (2015) IF: 0.733

cardiac. Several studies aimed to study the functional and structural changes in the skin microcirculation of the elderly population. Controversies rose from whether the encountered changes were due to ageing or due to associated diseases. We, therefore, aimed at studying the skin microcirculation in a group of elderly subjects away from disease states that are known to affect the microcirculatory status. We also studied a group of elderly hypertensive patients for comparison. Both groups were compared to young healthy adults.
Methods: The study population included 145 subjects, divided into three groups: group A: 50 healthy elderly subjects free from diabetes, hypertension and hypercholesterolemia, group B: 60 elderly patients with long standing essential hypertension and group C: 35 young healthy subjects. The microcirculation was assessed by means of the Laser Doppler Fluxmetry (LDF). The provocative test used was the reactive hyperemia test (RH). Further evaluation of the apparent structural abnormalities in skin microvascular structure was done using the capillaroscope.
Results: Results showed no statistically significant difference in the RH measurements between the normal elderly group and the

control group with a statistically significant difference in the capillary density by capillaroscopy. The hypertensive group revealed different Results.
Conclusion: The study of the microcirculatory changes in normal elderly subjects revealed the presence of structural abnormalities. These changes are independent of any disease state.
Keywords: Capillaroscope; Geriatric; Laser doppler fluxmetry; Microcirculation; Reactive hyperemia.

926. Eight Year Outcomes of the Cairo Kidney Centre Sequential Protocol

Tarek Fayad, Emad William, Nasr Tawfik, Boulos Habashy, Hazem S. Abou-Youssef, Sameh Shokry, Soha Khalil, Ahmed Morsy and Rashad Barsoum

Experimental and Clinical Transplantation, 13 supp1: 23-29 (2015) IF: 0.622

Objectives: To describe the long-term Results of a previously developed a sirolimus-based sequential immunosuppression protocol for kidney transplant comprising 2 phases: sirolimus + cyclosporine + prednisolone for 3 months followed by sirolimus + prednisolone + mycophenolate mofetil with steroid minimization the first year. Two-year outcomes of patients on this protocol (group A) showed equivalent patient and graft survival, yet with significantly better function, compared with those on cyclosporine + mycophenolate mofetil + prednisolone (group B).
Materials and Methods: We report the 8-year outcomes in the same cohort (76 patients in group A and 37 in group B).
Results: 42% switched from group A to B versus 43% switching from B to A. Intent-to-treat patient survivals at 5 and 8 years were 88% and 85.5% for group A, and 78% and 73% for group B. Death-censored graft survivals were 93% for group A and 95% for group B. Graft function was significantly better at 8 years, with 91% of group A patients compared with 50% in group B having estimated glomerular filtration rates > 45 mL/min/1.73 m2, and a significantly lower incidence of chronic allograft nephropathy in the former. Secondary parameters including blood pressure control, new onset diabetes mellitus, proteinuria and other drug-related adverse events showed no significant differences between the groups.
Conclusions: The sirolimus-based sequential immunosuppression protocol was well tolerated in 58% of patients. The intent-to-treat and patients-ontherapy analyses revealed that it was equivalent to the widely used cyclosporine + mycophenolate mofetil + prednisolone protocol regarding patient and graft survival. It is associated with better graft function and lower incidence of chronic allograft nephropathy in 8 years' follow-up. The incidence of drug-related adverse reactions was not statistically different from those in the comparator.
Keywords: Kidney transplant; Sirolimus; Sequential immunosuppression; Calcineurin inhibitor toxicity.

927. Assessment of Premature Coronary Atherosclerosis in Patients with Systemic Lupus Erythematosus Disease

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The Egyptian Rheumatologist, 37: 43-47 (2015)

Introduction Systemic lupus erythematosus (SLE) is a chronic inflammatory autoimmune disease that affects mainly young women. The incidence of myocardial infarction is 5 times higher in SLE patients than in the general population. Aim of the work The aim of our study was to assess the frequency and extent of coronary artery calcification as measured by multidetector computed tomography (CT) in SLE patients and to identify the associated variables.
Patients and Methods Thirty SLE patients and 30 matched healthy controls were included in the study. Patients were not known to have atherosclerosis. Patients and controls were subjected to full history taking, clinical examination, laboratory investigations including complete blood count, urine analysis, serum urea, creatinine, homocysteine, triglycerides, total cholesterol, high and low density lipoproteins. Multi detector CT study of the coronaries was performed.
Results Coronary calcification was detected in 4 (13.3%) of the patients and none of the control. The homocysteine level was significantly higher in the patients (13.42 ± 5.33 μmol/L) compared to the control (9.39 ± 1.48 μmol/L) ($p = 0.002$). The calcium score was 42 ± 111.09 in the patients and zero in the control. The calcification score of the 4 patients was between 101 and 400. Patients with calcification had significantly higher cholesterol, triglycerides and homocysteine levels ($p < 0.0001$, $p = 0.032$ and $p = 0.002$, respectively). The calcium score significantly correlated with the serum cholesterol ($r = 0.54$, $p = 0.002$) and homocysteine level ($r = 0.78$, $p = 0.001$).
Conclusion Premature coronary artery calcification is more common in SLE patients than in the general population. Subclinical atherosclerosis in SLE is associated with traditional risk factors like hypercholesterolemia and hypertriglyceridemia as well as increased homocysteine level.
Keywords: Systemic lupus; Erythematosus; Coronary atherosclerosis; Coronary calcification; Multidetector Ct.

928. Assessment of Left Ventricular Function in Systemic Lupus Erythematosus Patients by Speckle Tracking Echocardiography: Relation to Circulating Endothelial Progenitor Cells

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The Egyptian Rheumatologist, 37: 33-41 (2015)

Background Systemic lupus erythematosus is an autoimmune disease associated with reduced number and impaired function of endothelial progenitor cells (EPCs) responsible for vascular regeneration. Aim of the work to assess left ventricular (LV) function of SLE patients using relatively new speckle tracking echocardiography (STE) and examine the relation of any detected abnormalities with peripheral circulating EPC level. Patients and **Methods** Fifty SLE patients and 25 healthy controls were subjected to quantification of peripheral circulating Cluster of differentiation133+/vascular endothelial growth factor receptor2+(CD133+/VEGFR2+) and CD34+/VEGFR2+ EPCs, transthoracic echocardiography (TTE), tissue Doppler imaging (TDI) and STE.
Results Patients showed a significantly lower CD133+/VEGFR2+ EPCs ($p = 0.009$) and CD34+/VEGFR2+ EPC counts ($p = 0.0001$) compared to controls. TTE/TDI revealed a significantly lower LV ejection fraction (EF) ($p = 0.007$), higher LV end systolic dimensions ($p = 0.02$), myocardial performance

index (MPI) (p = 0.0001) and mitral flow E/lateral annulus E' ratio (p = 0.002) in patients compared to controls. STE showed a significantly lower global longitudinal strain (GLS) (p < 0.001), global circumferential strain (GCS) (p < 0.001) and global strain rate during isovolumic relaxation period (GSRivr) (p = 0.01) in patients compared to controls. By multiple logistic regression analysis, the independent variables affecting GCS and GSRivr were the prednisolone dose and the LVEF respectively. (95% CI = -0.46 to -0.03; p = 0.03 and 95% CI = 0.001–0.01; p = 0.021; respectively). There was no significant correlation of the GLS, GCS or GSRivr with the EPCs.

Conclusion STE detected subclinical systolic and diastolic abnormalities of LV function in SLE patients. These abnormalities of LV function did not show however any relation with the significantly lower EPC count detected in patients.

Keywords: Systemic lupus erythematosus; Endothelial progenitor cells; Left ventricular function; Speckle tracking echocardiography.

929. Primary Hyperparathyroidism Presenting with Acute Pancreatitis and Asymptomatic Bone Involvement

Aasem Saif

Clinical Cases in Mineral and Bone Metabolism, 12: 199-201 (2015)

A 15-year-old female patient presented to the emergency room with vomiting and abdominal pain. She had two similar attacks in the previous three months both of them were diagnosed as pancreatitis in two different hospitals. On admission, her serum calcium and parathyroid hormone levels were very high. CT scan revealed left inferior parathyroid adenoma. Investigations to rule out possible multiple endocrine neoplasia were all negative. The patient was managed by intravenous fluids and furosemide to lower her serum calcium level. Then, left inferior parathyroidectomy was done. Postoperatively, the patient had hungry bone syndrome with severe hypocalcaemia and was managed by intravenous calcium infusion for five days in the intensive care unit. Later, she was kept on oral calcium and vitamin D supplementation. She became symptom-free and her serum calcium improved gradually.

Keywords: Acute pancreatitis; Hungry bone syndrome; Hypercalcemia; Primary hyperparathyroidism.

930. SDF-1(CXCL12) Polymorphisms in Egyptian Patients with Systemic Lupus Erythematosus (SLE): A Pilot Study

Sherif Yousry, Gehan Shahin, Doaa El Demerdash and Noha EL Husseiny

Comparative Clinical Pathology, 24: 1535-1540 (2015)

SDF-1(CXCL12) is a chemokine that plays an important role in the regulation of migration, proliferation, and differentiation of hematopoietic cells, as well as being involved in the homeostatic and inflammatory traffic of leukocytes. It was suggested that CXCL12 is a key molecule in the development of autoimmunity in the murine model of lupus. It has been demonstrated that SDF-1 has a G801A transition at position 801 in the 3'-untranslated region of the transcript, known as SDF-1-3'G801A. This polymorphism may have an important regulatory function via an increase in the biosynthesis of SDF-1 protein and has been reported in association with autoimmune diseases, such as type 1 diabetes and systemic sclerosis. We investigated the prevalence of SDF-1-3'G801A genotype in Egyptian patients with systemic lupus erythematosus (SLE) (n = 50) and healthy controls (HC) (n = 50) and its relation to SLE manifestations. We found a significant correlation between the SDF-1-3'G801A genotype and the following SLE features: photosensitivity, nephritis, serositis, and vasculitis, and also anticardiolipin antibodies. Our observations suggest that the SDF-1-3'-G801A genotype may be associated with some clinical and laboratory manifestations in patients with SLE.

Keywords: SDF-1(CXCL12); SLE; Chemokines; Polymorphism.

Dept. of Medical Biochemistry and Molecular Biology

931. Evaluation of the Amyloid Beta-GFP Fusion Protein as A Model of Amyloid Beta Peptides-Mediated Aggregation: A Study of DNAJP6 Chaperone

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Frontiers in Molecular Neuroscience, 8: 1-9 (2015) IF: 4.084

Alzheimer's disease (AD) is a progressive neurodegenerative disease characterized by the accumulation and aggregation of extracellular amyloid b (Ab) peptides and intracellular aggregation of hyper-phosphorylated tau protein. Recent evidence indicates that accumulation and aggregation of intracellular amyloid b peptides may also play a role in disease pathogenesis. This would suggest that intracellular Heat Shock Proteins (HSP) that maintain cellular protein homeostasis might be candidates for disease amelioration. We recently found that DNAJB6, a member of DNAJ family of heat shock proteins, effectively prevented the aggregation of short aggregation-prone peptides containing large poly glutamines (associated with CAG repeat diseases) both in vitro and in cells. Moreover, recent in vitro data showed that DNAJB6 can delay the aggregation of Ab42 peptides. In this study, we investigated the ability of DNAJB6 to prevent the aggregation of extracellular and intracellular Ab peptides using transfection of human embryonic kidney 293 (HEK293) cells with Ab-green fluorescent protein (GFP) fusion construct and performing western blotting and immunofluorescence techniques. We found that DNAJB6 indeed suppresses Ab- GFP aggregation, but not seeded aggregation initiated by extracellular Ab peptides. Unexpectedly and unlike what we found for peptide-mediated aggregation, DNAJB6 required interaction with HSP70 to prevent the aggregation of the Ab-GFP fusion protein and its J-domain was crucial for its anti-aggregation effect. In addition, other DNAJ proteins as well as HSPA1a overexpression also suppressed Ab-GFP aggregation efficiently. Our findings suggest that Ab aggregation differs from poly glutamine (Poly Q) peptide induced aggregation in terms of chaperone handling and sheds doubt on the usage of Ab-GFP fusion construct for studying Ab peptide aggregation in cells.

Keywords: AB-GFP; Heat shock proteins; Amyloid beta aggregation; Alzheimer'S disease; Chaperones; DNAJB6

932. Endothelial Progenitor Cells Regenerate Infracted Myocardium with Neovascularisation Development

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Journal of Advanced Research, 6: 133-144 (2015) IF: 3

We achieved possibility of isolation, characterization human umbilical cord blood endothelial progenitor cells (EPCs), examination potency of EPCs to form new blood vessels and differentiation into cardiomyoctes in canines with acute myocardial infarction (AMI). EPCs were separated and cultured from umbilical cord blood. Their phenotypes were confirmed by uptake ofdouble stains dioctadecyl tetramethylindocarbocyanine-labeled acetylated LDL and FITClabeled Ulex europaeus agglutinin 1 (DILDL-UEA-1). EPCs of cord blood were counted. Human VEGFR-2 and eNOS from the cultured EPCs were assessed by qPCR. Human EPCs was transplanted intramyocardially in canines with AMI. ECG and cardiac enzymes (CK-MB and Troponin I) were measured to assess severity of cellular damage. Histopathology was done to assess neovascularisation. Immunostaining was done to detect EPCs transdifferentiation into cardiomyocytes in peri-infarct cardiac tissue. qPCR for human genes (hVEGFR-2, and eNOS) was done to assess homing and angiogenic function of transplanted EPCs. Cultured human cord blood exhibited an increased number of EPCs and significant high expression of hVEGFR-2 and eNOS genes in the culture cells. Histopathology showed increased neovascularization and immunostaining showed presence of EPCs newly differentiated into cardiomyocytelike cells. Our findings suggested that hEPCs can mediate angiogenesis and differentiate into cardiomyoctes in canines with AMI.

Keywords: Human EPCs; Neovascularization; Canine; Acute myocardial infarction.

933. Efficacy of A Novel Water-soluble Curcumin Derivative Versus Sildenafil Citrate in Mediating Erectile Function

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International Journal of Impotence Research, 27: 9-15 (2015) IF: 1.756

The present study was conducted to assess the efficacy of a novel curcumin derivative (NCD) versus sildenafil citrate in erectile signaling. The study was conducted on 10 control male rats and 50 diabetic male rats divided into the following groups: diabetic, curcumin, NCD, sildenafil and NCD combined with sildenafil. Cavernous tissue (CC) gene expression levels of heme oxygenase (HO)- 1, Nrf2, NF-kb and p38, enzyme activities of HO and nitric oxide synthase (NOS), cyclic guanosine monophosphate (cGMP) and intracavernosal pressure (ICP) were assessed. Results showed that 12 weeks after induction of diabetes, erectile dysfunction was confirmed by the significant decrease in ICP, a significant decrease in cGMP, NOS, HO enzyme activities, a significant decrease in HO-1 gene and a significant elevation of NF-kb, p38 genes. Administration of all therapeutic interventions led to a significant elevation in ICP, cGMP levels, a significant increase in HO-1 and NOS enzymes, a significant increase in HO-1 and Nrf2 gene expression, and a significant decrease in NF-kb, p38 gene expression. NCD or its combination with sildenafil showed significant efficacy and more prolonged duration of action. In Conclusion, NCD could enhance erectile function with more efficacy and more prolonged duration of action.

Keywords: Curcumin; Sildenafil citrate; Erectile function; Nitric oxide synthase; Heme oxygenase; cGMP.

934. Molecular Signalling of A Novel Curcumin Derivative Versus Tadalafil in Erectile Dysfunction

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Andrologia, 47: 616-625 (2015) IF: 1.63

The efficacy of a novel curcumin derivative (NCD) versus tadalafil in erectile signalling was assessed. Ten control male rats and 50 diabetic male rats were used and divided into the following: diabetic (DM), curcumin (CURC), NCD, tadalafil and NCD combined with tadalafil rat groups. Cavernous tissue gene expression of heme oxygenase-1 (HO-1), Nrf2, NF-B and p38, enzyme activities of heme oxygenase (HO) and nitric oxide synthase (NOS), cGMP and intracavernosal pressure (ICP)/mean arterial pressure (MAP) were assessed. Results showed that 12 weeks after induction of diabetes, erectile dysfunction (ED) was confirmed by the significant decrease in ICP/MAP, a significant decrease in cGMP, NOS, HO enzyme activities, a significant decrease in HO-1 gene and a significant increase in NF-$K\beta$, p38 genes. Administration of all therapeutic interventions led to a significant increase in ICP/MAP, cGMP levels, a significant increase in HO-1 and NOS enzymes, a significant increase in HO-1, and Nrf2 gene expression, and a significant decrease in NF-$K\beta$, p38 gene expression. NCD or its combination with tadalafil showed significant superiority and more prolonged duration of action. In Conclusion, a tendency was observed that CURC and NCD have high efficacy and more prolonged duration of action in enhancing erectile function.

Keywords: Cgmp; Curcumin; Erectile dysfunction; Ho-1; Intracavernosal pressure; NOS.

935. Beneficial Effects of Bone Marrow-Derived Mesenchymal Stem Cell Transplantation in A Non-Immune Model of Demyelination

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Annals of Anatomy, 198: 11-20 (2015) IF: 1.483

Multiple sclerosis (MS) is an autoimmune disease characterized by demyelination and axonal loss throughout the central nervous system. Most of the previous studies that have been conducted to evaluate the efficacy of mesenchymal stem cells (MSCs) have utilized immune models such as experimental autoimmune encephalomyelitis (EAE). However, with this experimental setting, it is not clear whether the MSCs exert the functional improvement via an indirect consequence of MSC-mediated immunomodulation or via a direct replacement of the lost cells, paracrine actions, and/or an enhancement of endogenous repair. This study is the first to demonstrate the capability of intravenously injected bone marrow-derived MSCs (BM-MSCs) to migrate, engraft, and improve the demyelination in the non-immune cuprizone model of MS. The ultrastructural analysis

conducted in this study revealed that the observed histological improvement was due to both reduced demyelination and enhanced remyelination. However, the detected remyelination was not graft-derived as no differentiation of the transplanted cells towards the oligodendroglial phenotype was detected. In addition, the transplanted cells modulated the glial response and reduced apoptosis. These Results suggest that the therapeutic potential of BM-MSCs for MS is not only dependent on their immunosuppressive and immunomodulatory nature but also on their ability to enhance endogenous repair and induce oligo/neuroprotection. Proving the efficacy of BM-MSCs in a non-immune model of MS and evaluating the underlying mechanisms should enrich our knowledge of how these cells exert their beneficial effects and may eventually help us to enhance and maintain an efficacious and sustainable cell therapy for MS.

Keywords: Bone marrow-derived mesenchymal stem cells; Intravenous; Transplantation; Cuprizone; Demyelination.

936. The Role of Cyclooxygenase-2 and Prostaglandin E2 in the Pathogenesis of Cutaneous Lichen Planus

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Clinical and Experimental Dermatology, 40: 903-907 (2015) IF: 1.092

Background. Lichen planus (LP) is an inflammatory disease of the skin and mucous membranes. Autoimmunity has been suggested as a possible cause of this disease. The cyclooxygenase enzymes (COX-1, COX-2) are the key enzymes in the conversion of arachidonic acid into prostaglandins. Prostaglandin E2 (PGE2), a key product of COX-2, has an immunomodulatory role. Aim. To map levels of COX-2 and PGE2 in cutaneous LP lesions and evaluate their role in the pathogenesis of the disease.

Methods. In total, 31 patients with classic cutaneous LP and 30 age- and sexmatched healthy controls were enrolled. Skin biopsies were taken from the lesional and nonlesional skin of patients, and from the normal skin of controls. COX-2 mRNA expression was detected by real-time reverse transcription quantitative PCR, and PGE2 was detected by ELISA in skin biopsies from patients and controls.

Results. Our analysis revealed a significantly higher expression of COX-2 mRNA and PGE2 in the LP skin biopsies compared with the control biopsies ($P < 0.001$ and $P < 0.001$, respectively). Lesional biopsies showed significantly higher expression of COX-2 mRNA and PGE2 compared with nonlesional biopsies. The levels of COX-2 and PGE2 were not found to be correlated with age, sex or disease duration.

Conclusions. COX-2 and its product PGE2 are strongly expressed in LP skin lesions, indicating that they have a role in the pathogenesis of LP through their immunomodulatory effects.

Keywords: Cyclooxygenase; Prostaglandin; Lichen plannus.

937. Vitamin D Receptor Expression in Vitiligo

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Indian Journal of Dermatology, 6: 544-548 (2015)

Background: Vitiligo is a progressive depigmenting disorder characterized by loss of functional melanocytes from the epidermis. The etiopathogenesis of vitiligo is still unclear. Vitamin D has stimulatory effects on melanocytes and acts through its nuclear Vitamin D receptor (VDR) on target cells. Aims and Objectives: The purpose of this study was to declare the role of Vitamin D in the pathogenesis of vitiligo. Materials and **Methods**: This case-control study included 30 vitiligo patients and 30 age, gender-matched healthy controls. Blood samples were withdrawn from the study subjects, and the serum 25(OH) D level was determined by an enzyme-linked immunosorbent assay technique. Serum 25(OH) D levels were divided into: Normal or sufficient (=30 ng/ml), insufficient (< 30–> 20 ng/ml), and deficient (=20 ng/ml) levels. Skin biopsies were obtained from the depigmented lesions and clinically normal skin of vitiligo patients and from the controls, and VDR gene expression was determined using real-time polymerase chain reaction.

Results: Only 10 patients with vitiligo (33.3%) had sufficient serum 25(OH) D levels (=30 ng/ml), 12 patients (40%) had insufficient levels, and 8 patients (26.7%) had deficient levels. On the other hand, most of the controls (96.7%) had sufficient levels. The mean serum 25(OH) D level in patients was significantly decreased compared to controls ($P < 0.001$). The VDR-mRNA expression was also significantly decreased in lesional and nonlesional skin of patients compared to controls ($P < 0.001$, $P < 0.001$, respectively).

Conclusion: Vitamin D deficiency influences the extent of vitiligo and could contribute to the pathogenesis of vitiligo through its immunomodulatory role and its role in melanogenesis.

Keywords: 25-hydroxy vitamin D; Enzyme-linked immunosorbent assay; Real-time polymerase chain reaction; Vitamin D receptor; Vitiligo.

Dept. of Neurology

938. Global, Regional, and National Disability-Adjusted Life Years (DALYS) for 306 Diseases and Injuries and Healthy Life Expectancy (HALE) for 188 Countries, 1990-2013: Quantifying the Epidemiological Transition

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The Lancet, 386: 2145-2191 (2015) IF: 45.217

The Global Burden of Disease Study 2013 (GBD 2013) aims to bring together all available epidemiological data using a coherent measurement framework, standardised estimation Methods, and transparent data sources to enable comparisons of health loss over time and across causes, age-sex groups, and countries. The GBD can be used to generate summary measures such as disability-adjusted life-years (DALYs) and healthy life expectancy (HALE) that make possible comparative assessments of broad epidemiological patterns across countries and time. These summary measures can also be used to quantify the component of variation in epidemiology that is related to sociodemographic development. We used the published GBD 2013 data for age-specific mortality, years of life lost due to premature mortality (YLLs), and years lived with disability (YLDs) to calculate DALYs and HALE for 1990, 1995, 2000, 2005, 2010, and 2013 for 188 countries. We calculated HALE using the Sullivan method; 95% uncertainty intervals (UIs) represent uncertainty in age-specific death rates and YLDs per person for each country, age, sex, and year. We estimated DALYs for 306 causes for each country as the sum of YLLs and YLDs; 95% UIs represent

uncertainty in YLL and YLD rates. We quantified patterns of the epidemiological transition with a composite indicator of sociodemographic status, which we constructed from income per person, average years of schooling after age 15 years, and the total fertility rate and mean age of the population. We applied hierarchical regression to DALY rates by cause across countries to decompose variance related to the sociodemographic status variable, country, and time. Worldwide, from 1990 to 2013, life expectancy at birth rose by 6·2 years (95% UI 5·6-6·6), from 65·3 years (65·0-65·6) in 1990 to 71·5 years (71·0-71·9) in 2013, HALE at birth rose by 5·4 years (4·9-5·8), from 56·9 years (54·5-59·1) to 62·3 years (59·7-64·8), total DALYs fell by 3·6% (0·3-7·4), and age-standardised DALY rates per 100 000 people fell by 26·7% (24·6-29·1). For communicable, maternal, neonatal, and nutritional disorders, global DALY numbers, crude rates, and age-standardised rates have all declined between 1990 and 2013, whereas for non-communicable diseases, global DALYs have been increasing, DALY rates have remained nearly constant, and age-standardised DALY rates declined during the same period. From 2005 to 2013, the number of DALYs increased for most specific non-communicable diseases, including cardiovascular diseases and neoplasms, in addition to dengue, food-borne trematodes, and leishmaniasis; DALYs decreased for nearly all other causes. By 2013, the five leading causes of DALYs were ischaemic heart disease, lower respiratory infections, cerebrovascular disease, low back and neck pain, and road injuries. Sociodemographic status explained more than 50% of the variance between countries and over time for diarrhoea, lower respiratory infections, and other common infectious diseases; maternal disorders; neonatal disorders; nutritional deficiencies; other communicable, maternal, neonatal, and nutritional diseases; musculoskeletal disorders; and other non-communicable diseases. However, sociodemographic status explained less than 10% of the variance in DALY rates for cardiovascular diseases; chronic respiratory diseases; cirrhosis; diabetes, urogenital, blood, and endocrine diseases; unintentional injuries; and self-harm and interpersonal violence. Predictably, increased sociodemographic status was associated with a shift in burden from YLLs to YLDs, driven by declines in YLLs and increases in YLDs from musculoskeletal disorders, neurological disorders, and mental and substance use disorders. In most country-specific estimates, the increase in life expectancy was greater than that in HALE. Leading causes of DALYs are highly variable across countries. Global health is improving. Population growth and ageing have driven up numbers of DALYs, but crude rates have remained relatively constant, showing that progress in health does not mean fewer demands on health systems. The notion of an epidemiological transition-in which increasing sociodemographic status brings structured change in disease burden-is useful, but there is tremendous variation in burden of disease that is not associated with sociodemographic status. This further underscores the need for country-specific assessments of DALYs and HALE to appropriately inform health policy decisions and attendant actions.

Keywords: DALY; HALE; Global burden; Epidemiology.

939. Global, Regional, and National Age-Sex Specific All-Cause and Cause-Specific Mortality for 240 Causes of Death, 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013

Foad Abd-Elmoniem Abd-Allah

The Lancet, 385: 117-171 (2015) IF: 45.217

Background: Up-to-date evidence on levels and trends for age-sex-specific all-cause and cause-specific mortality is essential for the formation of global, regional, and national health policies. In the Global Burden of Disease Study 2013 (GBD 2013) we estimated yearly deaths for 188 countries between 1990, and 2013. We used the Results to assess whether there is epidemiological convergence across countries.

Methods: We estimated age-sex-specific all-cause mortality using the GBD 2010 Methods with some refinements to improve accuracy applied to an updated database of vital registration, survey, and census data. We generally estimated cause of death as in the GBD 2010. Key improvements included the addition of more recent vital registration data for 72 countries, an updated verbal autopsy literature review, two new and detailed data systems for China, and more detail for Mexico, UK, Turkey, and Russia. We improved statistical models for garbage code redistribution. We used six different modelling strategies across the 240 causes; cause of death ensemble modelling (CODEm) was the dominant strategy for causes with sufficient information. Trends for Alzheimer's disease and other dementias were informed by meta-regression of prevalence studies. For pathogen-specific causes of diarrhoea and lower respiratory infections we used a counterfactual approach. We computed two measures of convergence (inequality) across countries: the average relative difference across all pairs of countries (Gini coefficient) and the average absolute difference across countries. To summarise broad findings, we used multiple decrement life-tables to decompose probabilities of death from birth to exact age 15 years, from exact age 15 years to exact age 50 years, and from exact age 50 years to exact age 75 years, and life expectancy at birth into major causes. For all quantities reported, we computed 95% uncertainty intervals (UIs). We constrained cause-specific fractions within each age-sex-country-year group to sum to all-cause mortality based on draws from the uncertainty distributions. FINDINGS: Global life expectancy for both sexes increased from 65.3 years (UI 65.0-65.6) in 1990, to 71.5 years (UI 71.0-71.9) in 2013, while the number of deaths increased from 47.5 million (UI 46.8-48.2) to 54.9 million (UI 53.6-56.3) over the same interval. Global progress masked variation by age and sex: for children, average absolute differences between countries decreased but relative differences increased. For women aged 25-39 years and older than 75 years and for men aged 20-49 years and 65 years and older, both absolute and relative differences increased. Decomposition of global and regional life expectancy showed the prominent role of reductions in age-standardised death rates for cardiovascular diseases and cancers in high-income regions, and reductions in child deaths from diarrhoea, lower respiratory infections, and neonatal causes in low-income regions. HIV/AIDS reduced life expectancy in southern sub-Saharan Africa. For most communicable causes of death both numbers of deaths and age-standardised death rates fell whereas for most non-communicable causes, demographic shifts have increased numbers of deaths but decreased age-standardised death rates. Global deaths from injury increased by 10.7%, from 4.3 million deaths in 1990 to 4.8 million in 2013; but age-standardised rates declined over the same period by 21%. For some causes of more than 100,000 deaths per year in 2013, age-standardised death rates increased between 1990 and 2013, including HIV/AIDS, pancreatic cancer, atrial fibrillation and flutter, drug use disorders, diabetes, chronic kidney disease, and sickle-cell anaemias. Diarrhoeal diseases, lower respiratory infections, neonatal causes, and malaria are still in the top five causes of death in children younger than 5 years. The most important pathogens are rotavirus for diarrhoea and

pneumococcus for lower respiratory infections. Country-specific probabilities of death over three phases of life were substantially varied between and within regions.

Interpretation: For most countries, the general pattern of reductions in age-sex specific mortality has been associated with a progressive shift towards a larger share of the remaining deaths caused by non-communicable disease and injuries. Assessing epidemiological convergence across countries depends on whether an absolute or relative measure of inequality is used. Nevertheless, age-standardised death rates for seven substantial causes are increasing, suggesting the potential for reversals in some countries. Important gaps exist in the empirical data for cause of death estimates for some countries; for example, no national data for India are available for the past decade.

Keywords: Mortality; Global burden of disease; Systematic analysis.

940. Global, Regional, and National Incidence, Prevalence, and Years Lived with Disability for 301 Acute and Chronic Diseases and Injuries in 188 Countries, 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013

Foad Abd-Elmoniem Abd-Allah

The Lancet, 386: 743-800 (2015) IF: 45.217

Background Up-to-date evidence about levels and trends in disease and injury incidence, prevalence, and years lived with disability (YLDs) is an essential input into global, regional, and national health policies. In the Global Burden of Disease Study 2013 (GBD 2013), we estimated these quantities for acute and chronic diseases and injuries for 188 countries between 1990 and 2013.

Methods Estimates were calculated for disease and injury incidence, prevalence, and YLDs using GBD 2010 Methods with some important refinements.

Results for incidence of acute disorders and prevalence of chronic disorders are new additions to the analysis. Key improvements include expansion to the cause and sequelae list, updated systematic reviews, use of detailed injury codes, improvements to the Bayesian meta-regression method (DisMod-MR), and use of severity splits for various causes. An index of data representativeness, showing data availability, was calculated for each cause and impairment during three periods globally and at the country level for 2013. In total, 35 620 distinct sources of data were used and documented to calculated estimates for 301 diseases and injuries and 2337 sequelae. The comorbidity simulation provides estimates for the number of sequelae, concurrently, by individuals by country, year, age, and sex. Disability weights were updated with the addition of new population-based survey data from four countries. Findings Disease and injury were highly prevalent; only a small fraction of individuals had no sequelae. Comorbidity rose substantially with age and in absolute terms from 1990 to 2013. Incidence of acute sequelae were predominantly infectious diseases and short-term injuries, with over 2 billion cases of upper respiratory infections and diarrhoeal disease episodes in 2013, with the notable exception of tooth pain due to permanent caries with more than 200 million incident cases in 2013. Conversely, leading chronic sequelae were largely attributable to non-communicable diseases, with prevalence estimates for asymptomatic permanent caries and tension-type headache of 2·4 billion and 1·6 billion, respectively. The distribution of the number of sequelae in populations varied widely across regions, with an expected relation between age and disease prevalence. YLDs for both sexes increased from 537·6 million in 1990 to 764·8 million in 2013 due to population growth and ageing, whereas the age-standardised rate decreased little from 114·87 per 1000 people to 110·31 per 1000 people between 1990 and 2013. Leading causes of YLDs included low back pain and major depressive disorder among the top ten causes of YLDs in every country. YLD rates per person, by major cause groups, indicated the main drivers of increases were due to musculoskeletal, mental, and substance use disorders, neurological disorders, and chronic respiratory diseases; however HIV/AIDS was a notable driver of increasing YLDs in sub-Saharan Africa. Also, the proportion of disability-adjusted life years due to YLDs increased globally from 21·1% in 1990 to 31·2% in 2013. Interpretation Ageing of the world's population is leading to a substantial increase in the numbers of individuals with sequelae of diseases and injuries. Rates of YLDs are declining much more slowly than mortality rates. The non-fatal dimensions of disease and injury will require more and more attention from health systems. The transition to non-fatal outcomes as the dominant source of burden of disease is occurring rapidly outside of sub-Saharan Africa. Our Results can guide future health initiatives through examination of epidemiological trends and a better understanding of variation across countries.

Keywords: Chronic diseases; Injuries; Global burden; Epidemiology.

941. Global, Regional, and National Comparative Risk Assessment of 79 Behavioural, Environmental and Occupational, and Metabolic Risks or Clusters of Risks in 188 Countries, 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013

Foad Abd-Elmoniem Abd-Allah

The Lancet, 386: 2287-2323 (2015) IF: 45.217

Background The Global Burden of Disease, Injuries, and Risk Factor study 2013 (GBD 2013) is the first of a series of annual updates of the GBD. Risk factor quantification, particularly of modifiable risk factors, can help to identify emerging threats to population health and opportunities for prevention. The GBD 2013 provides a timely opportunity to update the comparative risk assessment with new data for exposure, relative risks, and evidence on the appropriate counterfactual risk distribution. Methods Attributable deaths, years of life lost, years lived with disability, and disability-adjusted life-years (DALYs) have been estimated for 79 risks or clusters of risks using the GBD 2010 **Methods**. Risk–outcome pairs meeting explicit evidence criteria were assessed for 188 countries for the period 1990–2013 by age and sex using three inputs: risk exposure, relative risks, and the theoretical minimum risk exposure level (TMREL). Risks are organised into a hierarchy with blocks of behavioural, environmental and occupational, and metabolic risks at the first level of the hierarchy. The next level in the hierarchy includes nine clusters of related risks and two individual risks, with more detail provided at levels 3 and 4 of the hierarchy. Compared with GBD 2010, six new risk factors have been added: handwashing practices, occupational exposure to trichloroethylene, childhood wasting, childhood stunting, unsafe sex, and low glomerular

filtration rate. For most risks, data for exposure were synthesised with a Bayesian meta-regression method, DisMod-MR 2.0, or spatial-temporal Gaussian process regression. Relative risks were based on meta-regressions of published cohort and intervention studies. Attributable burden for clusters of risks and all risks combined took into account evidence on the mediation of some risks such as high body-mass index (BMI) through other risks such as high systolic blood pressure and high cholesterol. Findings All risks combined account for 57·2% (95% uncertainty interval [UI] 55·8–58·5) of deaths and 41·6% (40·1–43·0) of DALYs. Risks quantified account for 87·9% (86·5–89·3) of cardiovascular disease DALYs, ranging to a low of 0% for neonatal disorders and neglected tropical diseases and malaria. In terms of global DALYs in 2013, six risks or clusters of risks each caused more than 5% of DALYs: dietary risks accounting for 11·3 million deaths and 241·4 million DALYs, high systolic blood pressure for 10·4 million deaths and 208·1 million DALYs, child and maternal malnutrition for 1·7 million deaths and 176·9 million DALYs, tobacco smoke for 6·1 million deaths and 143·5 million DALYs, air pollution for 5·5 million deaths and 141·5 million DALYs, and high BMI for 4·4 million deaths and 134·0 million DALYs. Risk factor patterns vary across regions and countries and with time. In sub-Saharan Africa, the leading risk factors are child and maternal malnutrition, unsafe sex, and unsafe water, sanitation, and handwashing. In women, in nearly all countries in the Americas, north Africa, and the Middle East, and in many other high-income countries, high BMI is the leading risk factor, with high systolic blood pressure as the leading risk in most of Central and Eastern Europe and south and east Asia. For men, high systolic blood pressure or tobacco use are the leading risks in nearly all high-income countries, in north Africa and the Middle East, Europe, and Asia. For men and women, unsafe sex is the leading risk in a corridor from Kenya to South Africa. Interpretation Behavioural, environmental and occupational, and metabolic risks can explain half of global mortality and more than one-third of global DALYs providing many opportunities for prevention. Of the larger risks, the attributable burden of high BMI has increased in the past 23 years. In view of the prominence of behavioural risk factors, behavioural and social science research on interventions for these risks should be strengthened. Many prevention and primary care policy options are available now to act on key risks.

Keywords: Risk assessment; Systematic analysis; Global burden of disease.

942. Arbovirus Infections of the Nervous System: Current Trends and Future Threats

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Neurology, 84: 421-423 (2015) IF: 8.185

Systemic viral infections are common. Symptomatic involvement of the nervous system in viral infections is uncommon. Encephalitis is the most worrying manifestation of nervous system involvement by viruses. Arthropod-borne viruses (arboviruses) are among the most serious international infectious threats to the human nervous system.The neurologic diseases that may be transmitted by arthropods to humans include meningitis, encephalitis, myelitis, encephalomyelitis, neuritis (including anterior horn cells and dorsal root ganglia), and myositis.

Keywords: Arbovirus; Encephalitis; Infections.

943. New Strategy to Reduce the Global Burden of Stroke

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Stroke, 46: 1740-1747 (2015) IF: 5.761

The socioeconomic and health effect of stroke and other noncommunicable disorders (NCDs) that share many of the same risk factors with stroke, such as heart attack, dementia, and diabetes mellitus, is huge and increasing.1–4 Collectively, NCDs account for 34.5 million deaths (66% of deaths from all causes)3 and 1344 million disability-adjusted life years lost worldwide in 2010.2 The burden of NCDs is likely to burgeon given the aging of the world's population and the epidemiological transition currently observed in many low- to middle-income countries (LMICs).5,6 In addition, there is low awareness in the population about these NCDs and their risk factors,7–10 particularly in LMICs.11 These factors, coupled with underuse of strategies for primary prevention of stroke/NCDs on an individual level and the lack of accurate data on the prevalence and effect of risk factors in different countries and populations have been implicated in the ever-increasing worldwide burden of the NCDs.12–15 Of particular concern is a significant increase in the number of young adults (aged <65 years) affected by stroke,16 and the increasing epidemic of overweight/obesity17 and diabetes mellitus worldwide.18 If these trends continue, the burden of stroke and other major NCDs will increase even faster. The increasing burden of stroke and other major NCDs provide strong support for the notion that the currently used primary prevention strategies for stroke and other major NCDs (business as usual) are not sufficiently effective. The most pertinent solution to this problem is the implementation of new, effective, widely available, and cost-effective prevention and treatment strategies to reduce the incidence and severity distribution of stroke and other major NCDs.

Keywords: Global burden; Stroke; Riskometer.

944. Sex Differences in Stroke Incidence, Prevalence, Mortality and Disability-Adjusted Life Years: Results from the Global Burden of Disease Study 2013

Foad Abd-Allah

Neuroepidemiology, 45: 203-214 (2015) IF: 2.558

Background: Accurate information on stroke burden in men and women are important for evidence-based healthcare planning and resource allocation. Previously, limited research suggested that the absolute number of deaths from stroke in women was greater than in men, but the incidence and mortality rates were greater in men. However, sex differences in various metrics of stroke burden on a global scale have not been a subject of comprehensive and comparable assessment for most regions of the world, nor have sex differences in stroke burden been examined for trends over time.

Methods: Stroke incidence, prevalence, mortality, disability-adjusted life years (DALYs) and healthy years lost due to disability were estimated as part of the Global Burden of Disease (GBD) 2013 Study. Data inputs included all available information on stroke incidence, prevalence and death and case fatality rates.

Analysis was performed separately by sex and 5-year age categories for 188 countries. Statistical models were employed to produce globally comprehensive.

Results over time. All rates were age-standardized to a global population and 95% uncertainty intervals (UIs) were computed. **Findings**: In 2013, global ischemic stroke (IS) and hemorrhagic stroke (HS) incidence (per 100,000) in men (IS 132.77 (95% UI 125.34-142.77); HS 64.89 (95% UI 59.82-68.85)) exceeded those of women (IS 98.85 (95% UI 92.11-106.62); HS 45.48 (95% UI 42.43-48.53)). IS incidence rates were lower in 2013 compared with 1990 rates for both sexes (1990 male IS incidence 147.40 (95% UI 137.87-157.66); 1990 female IS incidence 113.31 (95% UI 103.52-123.40)), but the only significant change in IS incidence was among women. Changes in global HS incidence were not statistically significant for males (1990 = 65.31 (95% UI 61.63-69.0), 2013 = 64.89 (95% UI 59.82-68.85)), but was significant for females (1990 = 64.892 (95% UI 59.82-68.85), 2013 = 45.48 (95% UI 42.427-48.53)). The number of DALYs related to IS rose from 1990 (male = 16.62 (95% UI 13.27-19.62), female = 17.53 (95% UI 14.08-20.33)) to 2013 (male = 25.22 (95% UI 20.57-29.13), female = 22.21 (95% UI 17.71-25.50)). The number of DALYs associated with HS also rose steadily and was higher than DALYs for IS at each time point (male 1990 = 29.91 (95% UI 25.66-34.54), male 2013 = 37.27 (95% UI 32.29-45.12); female 1990 = 26.05 (95% UI 21.70-30.90), female 2013 = 28.18 (95% UI 23.68-33.80)).

Interpretation: Globally, men continue to have a higher incidence of IS than women while significant sex differences in the incidence of HS were not observed. The total health loss due to stroke as measured by DALYs was similar for men and women for both stroke subtypes in 2013, with HS higher than IS. Both IS and HS DALYs show an increasing trend for both men and women since 1990, which is statistically significant only for IS among men. Ongoing monitoring of sex differences in the burden of stroke will be needed to determine if disease rates among men and women continue to diverge. Sex disparities related to stroke will have important clinical and policy implications that can guide funding and resource allocation for national, regional and global health programs.

Keywords: Sex differences; Stroke; Epidemiology; Burden; Global.

945. Stroke Prevalence, Mortality and Disability-Adjusted Life Years in Adults Aged 20–64 Years in 1990–2013: Data from the Global Burden of Disease 2013 Study

Foad Abd-Allah

Neuroepidemiology, 45: 190-202 (2015) IF: 2.558

Background: Recent evidence suggests that stroke is increasing as a cause of morbidity and mortality in younger adults, where it carries particular significance for working individuals.Accurate and up-to-date estimates of stroke burden are important for planning stroke prevention and management in younger adults.

Objectives: This study aims to estimate prevalence, mortality and disability-adjusted life years (DALYs) and their trends for total, ischemic stroke (IS) and hemorrhagic stroke (HS) in the world for 1990–2013 in adults aged 20–64 years.

Methodology: Stroke prevalence, mortality and DALYs were estimated using the Global Burden of Disease (GBD) 2013 methods. All available data on rates of stroke incidence, excess mortality, prevalence anddeath were collected. Statistical models were used along with country-level covariates to estimate country-specific stroke burden. Stroke-specific disability weights were used to compute years lived with disability and DALYs. Means and 95% uncertainty intervals (UIs) were calculated for prevalence, mortality and DALYs. The median of the percent change and 95% UI were determined for the period from 1990 to 2013.

Results: In 2013, in younger adults aged 20–64 years, the global prevalence of HS was 3,725,085 cases (95% UI 3,548,098–3,871,018) and IS was 7,258,216 cases (95% UI 6,996,272–7,569,403). Globally, between 1990 and 2013, there were significant increases in absolute numbers and prevalence rates of both HS and IS for younger adults. There were 1,483,707 (95% UI 1,340,579–1,658,929) stroke deaths globally among younger adults but the number of deathsfrom HS (1,047,735 (95% UI 945,087–1,184,192)) was significantly higher than the number of deaths from IS (435,972 (95% UI 354,018–504,656)). There was a 20.1% (95% UI –23.6 to –10.3) decline in the number of total stroke deaths among younger adults in developed countries but a 36.7% (95% UI 26.3–48.5) increase in developing countries. Death rates for all strokes among younger adults declined significantly in developing countries from 47 (95% UI 42.6–51.7) in 1990 to 39 (95% UI 35.0–43.8) in 2013. Death rates for all strokes among younger adults also declined significantly in developed countries from 33.3 (95% UI 29.8–37.0) in 1990 to 23.5 (95% UI 21.1–26.9) in 2013. A significant decrease in HS death rates for younger adults was seen only in developed countries between 1990 and 2013 (19.8 (95% UI 16.9–22.6) and 13.7 (95% UI 12.1–15.9)) per 100,000). No significant change was detected in IS death rates among younger adults. The total DALYs from all strokes in those aged 20–64 years was 51,429,440 (95% UI 46,561,382–57,320,085). Globally, there was a 24.4% (95% UI 16.6–33.8) increase in total DALY numbers for this age group, with a 20% (95% UI 11.7–31.1) and 37.3% (95% UI 23.4–52.2) increase in HS and IS numbers, respectively.

Conclusions: Between 1990 and 2013, there were significant increases in prevalent cases, total deaths and DALYs due to HS and IS in younger adults aged 20–64 years. Death and DALY rates declined in both developed and developing countries but a significant increase in absolute numbers of stroke deaths among younger adults was detected in developing countries. Most of the burden of stroke was in developing countries. In 2013, the greatest burden of stroke among younger adults was due to HS. While the trends in declining death and DALY rates in developing countries are encouraging, these regions still fall far behind those of developed regions of the world. A more aggressive approach toward primary prevention and increased accessto adequate healthcare services for stroke is required to substantially narrow these disparities. Ed 31% of incident strokes globally [5] . A systematic reviewof literature on young stroke (between 20 and 44years) suggests that stroke in those younger than 45 yearsis not as uncommon as previously perceived with standardizedincidence rates ranging from 8.7 to 21.0 per100,000 [6] . Evidence suggests that changes in unfavorablelifestyle factors such as unhealthy diets high in sugar,salt and processed foods, smoking, alcohol intake, druguse and reduced levels of physical activity have led to theincreased exposure to stroke risk factors in the young [7,8] . A population-based study in the United States foundan increase in the number of young people aged 18–54years with stroke, and that over half of these were currentsmokers and 1 in 5 abused illegal drugs [9] . The long-termimpact of stroke is large in younger adults due to the

impactof lost healthy life years among working-age adults,given their contributions and responsibilities as wageearnersand care-givers. Therefore, estimating the extentof the burden and temporal trends in younger adults withstroke is of critical importance for measuring societal impactand for data-driven public health planning and resour ceallocation.
Keywords: Stroke; Ischemic; Hemorrhagic; Young adult; Global trends; Prevalence; Deaths; DALYs.

946. Stroke Prevalence, Mortality and Disability-Adjusted Life Years in Children and Youth Aged 0–19 Years: Data from the Global and Regional Burden of Stroke 2013

Foad Abd-Allah

Neuroepidemiology, 45:177–189 (2015) IF: 2.558

Background: There is increasing recognition of stroke as an important contributor to childhood morbidity and mortality. Current estimates of global childhood stroke burden and its temporal trends are sparse. Accurate and up-to-date esti- 2013.
Methodology: Stroke prevalence, mortality and DALYs were estimated using the Global Burden of Disease 2013 methods. All available data on stroke-related incidence, prevalence, excess mortality and deaths were collected. Statistical models and country-level covariates were employed to produce comprehensive and consistent estimates of prevalence and mortality. Stroke-specific disability weights were used to estimate years lived with disability and DALYs. Means and 95% uncertainty intervals (UIs) were calculated for prevalence, mortality and DALYs. The median of the percent change and 95% UI were determined for the period from 1990 to 2013.
Results: In 2013, there were 97,792 (95% UI 90,564–106,016) prevalent cases of childhood IS and 67,621 (95% UI 62,899–72,214) prevalent cases of childhood HS, reflecting an increase of approximately 35% in the absolute numbers of prevalent childhood strokes since 1990.
There were 33,069 (95% UI 28,627–38,998) deaths and 2,615,118 (95% UI 2,265,801–3,090,822) DALYs due to childhood stroke in 2013 globally, reflecting an approximately 200% decrease in the absolute numbers of death and DALYs in childhood stroke since 1990. Between 1990 and 2013, there were significant increases in the global prevalence rates of childhood IS, as well as significant decreases in the global death rate and DALYs rate of all strokes in those of age 0–19 years. While prevalence rates for childhood IS and HS decreased significantly in developed countries, a decline was seen only in HS, with no change in prevalence rates of IS, in developing countries. The childhood stroke DALY rates in 2013 were 13.3 (95% UI 10.6–17.1) for IS and 92.7 (95% UI 80.5–109.7) for HS per 100,000. While the prevalence of childhood IS compared to childhood HS was similar globally, the death rate and DALY rate of HS was 6- to 7-fold higher than that of IS. In 2013, the prevalence rate of both childhood IS and HS was significantly higher in developed countries than in developing countries. Conversely, both death and DALY rates for all stroke types were significantly lower in developed countries than in developing countries in 2013.
Men showed a trend toward higher childhood stroke death rates (1.5 (1.3–1.8) per 100,000) than women (1.1 (0.9–1.5) per 100,000) and higher childhood stroke DALY rates (120.1 (100.8–143.4) per 100,000) than women (90.9 (74.6–122.4) per 100,000) globally in 2013.
Conclusions: Globally, between 1990 and 2013, there was a significant increase in the absolute number of prevalent childhood strokes, while absolute numbers and rates of both deaths and DALYs declined significantly. The gap in childhood stroke burden between developed and developing countries is closing; however, in 2013, childhood stroke burden in terms of absolute numbers of prevalent strokes, deaths and DALYs remained much higher in developing countries. There is an urgent need to address these disparities with both global and country-level initiatives targeting prevention as well as improved access to acute and chronic stroke care.
Keywords: Childhood stroke; Stroke epidemiology; Prevalence; Deaths; Disability-adjusted life years.

947. Update on the Global Burden of Ischemic and Hemorrhagic Stroke in 1990-2013: the GBD 2013 Study

Foad Abd-Allah

Neuroepidemiology, 45: 161-167 (2015) IF: 2.558

Background: Global stroke epidemiology is changing rapidly. Although age-standardized rates of stroke mortality have decreased worldwide in the past 2 decades, the absolute numbers of people who have a stroke every year, and live with the consequences of stroke or die from their stroke, are increasing. Regular updates on the current level of stroke burden are important for advancing our knowledge on stroke epidemiology and facilitate organization and planning of evidence-based stroke care.
Objectives: This study aims to estimate incidence, prevalence, mortality, disability-adjusted life years (DALYs) and years lived with disability (YLDs) and their trends for ischemic stroke (IS) and hemorrhagic stroke (HS) for 188 countries from 1990 to 2013.
Methodology: Stroke incidence, prevalence, mortality, DALYs and YLDs were estimated using all available data on mortality and stroke incidence, prevalence and excess mortality. Statistical models and country-level covariate data were employed, and all rates were age-standardized to a global population. All estimates were produced with 95% uncertainty intervals (UIs).
Results: In 2013, there were globally almost 25.7 million stroke survivors (71% with IS), 6.5 million deaths from stroke (51% died from IS), 113 million DALYs due to stroke (58% due to IS) and 10.3 million new strokes (67% IS). Over the 1990-2013 period, there was a significant increase in the absolute number of DALYs due to IS, and of deaths from IS and HS, survivors and incident events for both IS and HS. The preponderance of the burden of stroke continued to reside in developing countries, comprising 75.2% of deaths from stroke and 81.0% of stroke-related DALYs. Globally, the proportional contribution of stroke-related DALYs and deaths due to stroke compared to all diseases increased from 1990 (3.54% (95% UI 3.11-4.00) and 9.66% (95% UI 8.47-10.70), respectively) to 2013 (4.62% (95% UI 4.01-5.30) and 11.75% (95% UI 10.45-13.31), respectively), but there was a diverging trend in developed and developing countries with a significant increase in DALYs and deaths in developing countries, and no measurable change in the proportional contribution of DALYs and deaths from stroke in developed countries.
Conclusion: Global stroke burden continues to increase globally. More efficient stroke prevention and management strategies are

urgently needed to halt and eventually reverse the stroke pandemic, while universal access to organized stroke services should be a priority.
Keywords: Stroke, Ischemic stroke; Hemorrhagic stroke; Global burden; GBD 2013.

948. Atlas of the Global Burden of Stroke (1990–2013): the GBD 2013 Study

Foad Abd-Allah

Neuroepidemiology, 45: 230-236 (2015) IF: 2.558

Background: World mapping is an important tool to visualize stroke burden and its trends in various regions and countries.
Objectives: To show geographic patterns of incidence, prevalence, mortality, disability-adjusted life years (DALYs) and years lived with disability (YLDs) and their trends for ischemic stroke and hemorrhagic stroke in the world for1990–2013.
Methodology: Stroke incidence, prevalence, mortality, DALYs and YLDs were estimated following the general approach of the Global Burden of Disease (GBD) 2010 with several important improvements in methods.
Data were updated for mortality (through April 2014) and stroke incidence, prevalence, case fatality and severity through 2013. Death was estimated using an ensemble modeling approach. A new software package, DisMod-MR 2.0, was used as part of a custom modeling process to estimate YLDs. All rates were age-standardized to new GBD es- timates of global population. All estimates have been computed with 95% uncertainty intervals.
Results: Age-standardized incidence, mortality, prevalence and DALYs/YLDs declined over the period from 1990 to 2013. However, the absolute number of people affected by stroke has substantially increased across all countries in the world over the same time period, suggesting that the global stroke burden continues to increase. There were significant geographical (country and regional) differences in stroke burden in the world, with the majority of the burden borne by low- and middle-income countries.
Conclusions: Global burden of stroke has continued to increase in spite of dramatic declines in age-standardized incidence, prevalence, mortality rates and disability. Population growth and aging have played an important role in the observed increase in stroke burden.
Keywords: Stroke; Atlas; Burden; GBD 2013.

949. Arabic Cross Cultural Adaptation and Validation of the National Institutes of Health Stroke Scale

Tamer Emara, Foad Abd-Allah, Mohammad Farrag and Ramez Reda Moustafa

Journal of the Neurological Sciences, 357: 152-156 (2015) IF: 2.474

Introduction The National Institutes of Health Stroke Scale (NIHSS), the most commonly used tool to quantify neurological deficit in acute stroke, was initially developed in English. We present our experience in developing and validating an Arabic version of the NIHSS (arNIHSS).
Methods A)Scale development phase: 6 bilingual neurologists translated the scale to Arabic. Items 9 and 10 were modified to suit the Arabic language and culture. A panel of 11 Arab neurologists reviewed the final product and an Arabic language expert did final editing. B)Scale validation phase: 10 examiners (four neurology residents and six nurses), who had no experience with the NIHSS, were trained to use the arNIHSS. Patients with acute stroke were recruited at two academic institutions in Egypt. Each patient was examined on admission by 3 examiners using the arNIHSS and at 24 hours by one of the three examiners. The agreement between the first three examinations was used to calculate the interrater agreement. The agreement between the admission and the 24-hour arNIHSS performed by the same examiner was used to calculate the intrarater agreement. Construct validity was evaluated by correlating the arNIHSS on admission with the infarct volume on initial the diffusion weighted imaging (DWI) using the Alberta Stroke Program Early CT score (DWI-ASPECTS) and the functional outcome at 3 months assessed by the modified Rankin Scale (mRS).
Results In 6 months, 137 patients were recruited (mean age ± standard deviation 62 ± 12 years; 48 women). For interrater agreement, weighted kappa value ranged from 0.36 to 0.66 and intraclass correlation coefficient (ICC) for the whole scale was excellent at 0.95 (95% confidence interval [CI] 0.94–0.97). For intrarater agreement, weighted kappa ranged from 0.52 to 1.0 and the ICC was 0.94 (95% CI 0.87–0.98). The construct validity of the arNIHSS is demonstrated by its correlation with the DWI-ASPECT and the 3 months mRS score (Spearman correlation -0.46 and 0.58 respectively; $P < 0.001$ for both).
Conclusion We developed and validated a culturally adapted Arabic version of the NIHSS. Further validation in other Arab countries is recommended.
Keywords: Nihss; Cross-cultural; Translation; Arabic; Ischemic stroke; Neurological examination; Stroke scale; Stroke severity.

950. Corticobasal Degeneration: Clinical Characteristics and Multidisciplinary Therapeutic Approach in 26 Patients

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Neurological Sciences, 36: 1651-1657 (2015) IF: 1.447

Corticobasal syndrome (CBS) is a sporadic tauopathy that manifests by a various combination of motor and cognitive deficits, which makes its diagnosis challenging. Treatment of CBS is symptomatic and based on evidence from other similar disorders due to the lack of studies on CBS. The aim of the study was to investigate low-frequency repetitive transcranial magnetic stimulation (rTMS) as a therapeutic tool in CBS. Twenty-six patients with clinically evident CBS according to Cambridge criteria were followed for 12–18 months while receiving low-frequency rTMS combined with pharmacological, rehabilitation treatment and botulinum toxin injection. The majority of patients are manifested with akinetic-rigid syndrome and cognitive dysfunction. There was improvement of the UPDRS and quality of life after 3 months of therapeutic interventions ($P < 0.001$ and <0.05, respectively). No significant deterioration in cognitive functions was detected over the study period. There was a significant reduction of caregiver burden after 3 months of interventions ($P < 0.01$); this improvement was maintained up to 18 months. Cognitive dysfunction is a frequent manifestation of CBS. CBS patients can benefit from multidisciplinary therapeutic approach employing low-frequency rTMS.

Keywords: Corticobasal syndrome; Akinetic rigid; Dementia; Repetitive transcranial magnetic stimulation.

951. Association of Serotonin Transporter Gene (5HTT) Polymorphism and Juvenile Myoclonic Epilepsy: A Case-control Study

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Acta Neurologica Belgica, 115: 247-251 (2015) IF: 0.894

Serotonin levels might alter susceptibility to seizures. Serotonin transporter (5HTT) gene polymorphisms were found to be associated with some forms of epilepsy. Here, we attempted to examine an association between 5HTT VNTR allele variants in a serotonin transporter gene and epileptogenesis in juvenile myoclonic epilepsy (JME) cases. We conducted a case–control candidate gene study evaluating the frequencies of 5HTT VNTR allele variants using SYBR green real-time PCR with melting curve analysis in JME patients and healthy subjects. Forty patients with JME were selected from the Epilepsy Outpatient Clinic of Kasr Al Ainy Hospital, Cairo University, who had been classified according to the electroclinical classification of the ILAE. The control group consisted of 40 healthy Egyptian subjects. The less efficient transcriptional genotypes for 5-HTT polymorphisms were more frequent in JME patients (OR 9.33, CI 2.85–30.60; p value < 0.001). In our study we detected an association between the presence of 5-HTTVNTR with less transcriptional efficient genotypes and JME, which suggests that modulation of the serotoninergic system might be indicated in epileptogenesis in JME.

Keywords: JME; IGE; Serotonin; Epilepsy; Gene.

Dept. of Neuro Surgery

952. Traumatic Subarachnoid Hemorrhage in Developed and Developing Communities

El-Fiki M and El-Ghandour N

World Neurosurg, 83(2): 170-173 (2015) IF: 2.878

The presence of traumatic brain injury is a universal health problem. Its etiology varies among developed and developing communities, and it has a significant effect on survival as well as quality of life, with many patients experiencing disability that drains personal and community resources. These resources might be further stretched in developing countries, complicating and jeopardizing more the limited care these unfortunate patients may receive.

Keywords: Fall from height; Motor vehicle crash; Subarachnoid hemorrhage; Traumatic brain injury.

953. Infratentorial Complications Following Preresection CSF Diversion in Children with Posterior Fossa Tumors

Mohamed Ali El-Gaidi, Ashraf Hesham Abou El-Nasr and Ehab Mohamed Eissa

J Neurosurg Pediatr, 15: 4-11 (2015) IF: 1.482

Object This report presents the incidence, causes, and morbidity and mortality of infratentorial complications following CSF diversion before resection in children with posterior fossa tumors. Method s The medical records of 437 children admitted to Abo El-Reesh Pediatric University Hospital with a diagnosis of posterior fossa tumor between 2005 and 2012 were retrospectively reviewed. Seven children developed neurological deterioration following CSF diversion due to infratentorial complications. Computed tomography scans revealed intratumoral hemorrhage (ITH) in 5 cases, while upward transtentorial herniation (UTH), as evidenced by obliteration of the quadrigeminal and ambient cisterns, was diagnosed in 2 cases. **Results** Hydrocephalus was noted in 381 patients, and 301 patients underwent CSF diversion before resection. A ventriculoperitoneal (VP) shunt was used in 214 patients, and 6 children (2.8% of shunted cases) deteriorated neurologically (4 due to ITH and 2 due to UTH). Endoscopic third ventriculostomy (ETV) was performed in 87 patients, 1 of whom developed ITH (1.1% of the patients undergoing ETV). Six patients deteriorated within 8 hours (85.7%), whereas 1 patient, the only survivor, deteriorated after 24 hours. The incidence of infratentorial complications between VP shunts and ETVs was not found to be significantly different (p = 0.659). There was a higher risk of such complications in large posterior fossa tumors (diameter = 4 cm) extending close to the tentorial incisura, especially in patients with severe hydrocephalus and significant peritumoral edema. **Conclusion**s Infratentorial complications (ITH and UTH) in children with posterior fossa tumors are not uncommon (2.3%) after preresection CSF diversion (VP shunt or ETV) and are associated with a very poor prognosis in most cases, even with surgical intervention.

Keywords: Intratumoral hemorrhage; Posterior fossa tumor; CSF diversion; Upward transtentorial herniation; Hydrocephalus.

954. Epidural Fibrosis after Lumbar Disc Surgery: Prevention and Outcome Evaluation

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Asian Spine Journal, 2015: 9 (3): 370-385 (2015)

Study Design: This is a prospective, randomized, controlled study designed and conducted over 10 years from 2002 to 2012.
Purpose: The study aimed to monitor the effect of suction drains (SD) on the incidence of epidural fibrosis (EF) and to test, if the use of SD alone, SD with local steroids application, SD combined with fat grafts and local steroids application, or SD combined with fat grafts and without local steroids application, would improve outcome.
Overview of Literature: EF contributes to significant unsatisfactory failed-back syndrome. Efforts have been tried to reduce postoperative EF, but none were ideal.
Methods: Between September 2002 and 2012, 290 patients with symptomatic unilateral or bilateral, single-level lumbar disc herniation were included in the study. Two groups were included, with 165 patients in group I (intervention group) and 125 patients in group II (control group). Group I was subdivided into four subgroups: group Ia (SD alone), group Ib (SD+fat graft), group Ic (SD+local steroids), and group Id (SD+fat graft+local steroids).
Results: The use of SD alone or combined with only fat grafts, fats grafts and local steroids application, or only local steroids application significantly improved patient outcome and

significantly reduced EF as measured by magnetic resonance imaging (MRI).
Conclusions: This study has clearly demonstrated the fact that the use of suction drainage alone or combined with only fat grafts, fats grafts and local steroids application, or only local steroids application significantly improved patient outcome with respect to pain relief and functional outcome and significantly reduced EF as measured by an MRI. A simple grading system of EF on MRI was described.
Keywords: Epidural fibrosis; Suction drain; Lumbar; Failed back; Prevention.

Dept. of Obstetrics and Gynecology

955. Culture Media for Human Pre-implantation Embryos in Assisted Reproductive Technology Cycles

Youssef M M A, Mantikou E, van Wely M, Van der Veen F, Al-Inany H G, Repping S and Mastenbroek S

Cochrane Database of Systematic Reviews, 11: (2015)

IF: 6.035

Background: Many media are commercially available for culturing pre-implantation human embryos in assisted reproductive technology (ART) cycles. It is unknown which culture medium leads to the best success rates after ART. OBJECTIVES: To evaluate the safety and effectiveness of different human pre-implantation embryo culture media in used for in vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI) cycles.
Search Methods: We searched the Cochrane Menstrual Disorders and Subfertility Group's Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, the National Research Register, the Medical Research Council's Clinical Trials Register and the NHS Center for Reviews and Dissemination databases from January 1985 to March 2015. We also examined the reference lists of all known primary studies, review articles, citation lists of relevant publications and abstracts of major scientific meetings.
Selection Criteria: We included all randomised controlled trials which randomised women, oocytes or embryos and compared any two commercially available culture media for human pre-implantation embryos in an IVF or ICSI programme.
Data Collection and Analysis: Two review authors independently selected the studies, assessed their risk of bias and extracted data. We sought additional information from the authors if necessary. We assessed the quality of the evidence using Grades of Recommendation, Assessment, Development and Evaluation (GRADE) Methods. The primary review outcome was live birth or ongoing pregnancy.
Main Results: We included 32 studies in this review. Seventeen studies randomised women (total 3666), three randomised cycles (total 1018) and twelve randomised oocytes (over 15,230). It was not possible to pool any of the data because each study compared different culture media.
Only seven studies reported live birth or ongoing pregnancy. Four of these studies found no evidence of a difference between the media compared, for either day three or day five embryo transfer. The data from the fifth study did not appear reliable.Six studies reported clinical pregnancy rate.
One of these found a difference between the media compared, suggesting that for cleavage-stage embryo transfer, Quinn's Advantage was associated with higher clinical pregnancy rates than G5 (odds ratio (OR) 1.56; 95% confidence interval (CI) 1.12 to 2.16; 692 women). This study was available only as an abstract and the quality of the evidence was low.With regards to adverse effects, three studies reported multiple pregnancies and six studies reported miscarriage. None of them found any evidence of a difference between the culture media used. None of the studies reported on the health of offspring.Most studies (22/32) failed to report their source of funding and none described their methodology in adequate detail. The overall quality of the evidence was rated as very low for nearly all comparisons, the main limitations being imprecision and poor reporting of study Methods.
Authors' Conclusions: An optimal embryo culture medium is important for embryonic development and subsequently the success of IVF or ICSI treatment. There has been much controversy about the most appropriate embryo culture medium. Numerous studies have been performed, but no two studies compared the same culture media and none of them found any evidence of a difference between the culture media used. We conclude that there is insufficient evidence to support or refute the use of any specific culture medium. Properly designed and executed randomised trials are necessary.

956. Calcium Infusion for the Prevention of Ovarian Hyperstimulation Syndrome: A Double-Blind Randomized Controlled Trial

Waleed El-Khayat and Mostafa Elsadek

Fertility and Sterility, 103: 101-105 (2015) IF: 4.59

Objective To evaluate the role of calcium infusion as a preventive strategy of ovarian hyperstimulation syndrome (OHSS) in women at high risk in in vitro fertilization (IVF)/intracytoplasmic sperm injection (ICSI) treatment cycles. DESIGN: Double-blinded randomized controlled trial. SETTING: University hospital department of obstetrics and gynecology and private IVF center.
Patient(S): Two hundred women at risk to develop OHSS undergoing IVF/ICSI treatment cycle.
Intervention(S): The intervention group (group 1; n = 100) received intravenous infusion of 10 mL 10% calcium gluconate in 100 mL 0.9% saline solution on the day of ovum pick-up (OPU) and days 1, 2, and 3 after, and the placebo group (group 2; n = 100) received 100 mL 0.9% saline solution on the day of OPU and days 1, 2, and 3 after.
Main Outcome Measure(S): Incidence of OHSS.
Result(S): OHSS incidence was significantly higher in the placebo group (group 2) than in the calcium infusion group (group 1): 23 (23%) vs. 7 (7%); moderate OHSS was significantly higher in group 2 than in group 1: 8 (8%) vs. 1 (1%); and severe OHSS was significantly higher in group 2 than in group 1: 4 (4%) vs. 0.
Conclusion(S): Intravenous calcium infusion effectively reduced the incidence of OHSS development without reduction in the pregnancy rate.
Keywords: Ohss; PCO; RCT; Calcium Infusion.

957. GnRH Agonist for Final Oocyte Maturation in GnRH Antagonist Co-Treated IVF/ICSI Treatment Cycles Systematic Review and Meta-Analysis

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Journal of Advanced Research, 6: (2015) IF: 3

Final oocyte maturation in GnRH antagonist co-treated IVF/ICSI cycles can be triggered with HCG or a GnRH agonist. We conducted a systematic review and meta-analysis of randomized controlled trials to evaluate the efficacy and safety of the final oocyte maturation trigger in GnRH antagonist co-treated cycles. Outcome measures were ongoing pregnancy rate (OPR) and ovarian hyperstimulation syndrome (OHSS) incidence. Searches: were conducted in MEDLINE, EMBASE, Science Direct, Cochrane Library, and databases of abstracts. There was a statistically significant difference against the GnRH agonist for OPR in fresh autologous cycles (n = 1024) with an odd ratio (OR) of 0.69 (95% CI: 0.52-0.93). In oocyte-donor cycles (n = 342) there was no evidence of a difference (OR: 0.91; 95% CI: 0.59-1.40). There was a statistically significant difference in favour of GnRH agonist regarding the incidence of OHSS in fresh autologous cycles (OR: 0.06; 95% CI: 0.01-0.33) and donor cycles respectively (OR: 0.06; 95% CI: 0.01-0.27). In Conclusion GnRH agonist trigger for final oocyte maturation trigger in GnRH antagonist cycles is safer but less efficient than HCG

Keywords: HCG; GnRH agonist; GnRH antagonist; OHSS.

958. Gonadotropin-releasing Hormone Antagonists Versus Standard Androgen Suppression Therapy for Advanced Prostate Cancer A Systematic Review with Meta-Analysis

Frank Kunath, Hendrik Borgmann, Anette Blümle, Bastian Keck, Bernd Wullich, Christine Schmucker, Danijel Sikic, Catharina Roelle, Stefanie Schmidt, Amr Wahba and Joerg J Meerpohl

Bmj Open, 5: 1-16 (2015) IF: 2.271

Objectives: To evaluate efficacy and safety of gonadotropin-releasing hormone (GnRH) antagonists compared to standard androgen suppression therapy for advanced prostate cancer. SETTING: The international review team included methodologists of the German Cochrane Centre and clinical experts.

Participants: We searched CENTRAL, MEDLINE, Web of Science, EMBASE, trial registries and conference books for randomised controlled trials (RCT) for effectiveness data analysis, and randomised or non-randomised controlled studies (non-RCT) for safety data analysis (March 2015). Two authors independently screened identified articles, extracted data, evaluated risk of bias and rated quality of evidence according to GRADE.

Results: 13 studies (10 RCTs, 3 non-RCTs) were included. No study reported cancer-specific survival or clinical progression. There were no differences in overall mortality (RR 1.35, 95% CI 0.63 to 2.93), treatment failure (RR 0.91, 95% CI 0.70 to 1.17) or prostate-specific antigen progression (RR 0.83, 95% CI 0.64 to 1.06). While there was no difference in quality of life related to urinary symptoms, improved quality of life regarding prostate symptoms, measured with the International Prostate Symptom Score (IPSS), with the use of GnRH antagonists compared with the use of standard androgen suppression therapy (mean score difference -0.40, 95% CI -0.94 to 0.14, and -1.84, 95% CI -3.00 to -0.69, respectively) was found. Quality of evidence for all assessed outcomes was rated low according to GRADE. The risk for injection-site events was increased, but cardiovascular events may occur less often by using GnRH antagonist. Available evidence is hampered by risk of bias, selective reporting and limited follow-up.

Conclusions: There is currently insufficient evidence to make firm conclusive statements on the efficacy of GnRH antagonist compared to standard androgen suppression therapy for advanced prostate cancer. There is need for further high-quality research on GnRH antagonists with long-term follow-up.

Keywords: Gnrh antagonist; Gnrh agonist; Advanced prostate cancer.

959. Delayed Start Versus Conventional Gnrh Antagonist Protocol in Poor Responders Pretreated with Estradiol in Luteal Phase: A Randomized Controlled Trial

Ahmed M. Maged, Adel M. Nada, Fouad Abohamila, Ahmed T. Hashem, Walaa AI Mostafa and Ahmed R. Elzayat

Reproductive Sciences, 22(12): 1627-1631 (2015) IF: 2.23

Objective To compare the new delayed start protocol against the conventional gonadotropin (Gn)-releasing hormone antagonist protocol in poor responders (PORs).

Study Design: A total of 160 women with poor response to previous in vitro fertilization (IVF) cycle were randomized either to start Gn then Cetrotide 0.25 subcutaneously (sc) added when leading follicle (DF) reach >12 mm or Cetrotide 0.25 mg sc started first from day 2 to day 8 then Gn therapy was added and Cetrotide restarted when DF reach >12 mm.

Results: There was a statistically significant difference between conventional and delayed start protocols regarding the needed dose of Gn for stimulation (4368 ± 643 and 3798 ± 515), level of estradiol (E2; 778 ± 371 and 1076 ± 453), and endometrial thickness at human chorionic gonadotropin triggering (8.6 ± 1.8 and 9.8 ± 1.9), the number of DF (3.4 ± 1.5 and 4.9 ± 2.1), the number of retrieved follicles (2.4 ± 2.1 and 4.3 ± 2.5), and successful embryo transfer (13 vs 16), respectively ($P < .05$). There was a highly statistically significant difference between the 2 study groups regarding the number of oocytes fertilized (1.2 ± 2.0 vs 3.3 ± 1.4), metaphase II oocytes (0.9 ± 1.0 vs 2.7 + 1.6), and grade I embryos (0.7 ± 0.9 vs 2.1 + 1.1; $P < .001$). The chemical pregnancy, clinical pregnancy, and abortion rate showed a statistically significant difference between the 2 study groups (P value .003 and .006, respectively).

Conclusion: Delayed start protocol significantly improved clinical pregnancy rate and IVF cycle parameters in PORs.

Keywords: Gnrh antagonist; Conventional protocol; Delayed start protocol; Poor responders.

960. The Diagnostic Accuracy of Two- Vs Three-Dimensional Sonohysterography for Evaluation of the Uterine Cavity in the Reproductive Age

Walid El-Sherbiny, Akmal El-Mazny, Nermeen Abou-Salem and Wael Sayed Mostafa

J. of Minimally Invasive Gynecology, 22: 127-131 (2015) IF: 1.83

Study Objective To compare 2-dimensional sonohysterography (2D SHG) vs 3-dimensional sonohysterography (3D SHG) using saline solution infusion, with outpatient hysteroscopy as the gold standard, for evaluation of the uterine cavity in women of reproductive age. DESIGN: Comparative observational cross-sectional study (Canadian Task Force classification II-2).
Setting: University hospital.
Patients: One hundred twenty women of reproductive age with abnormal uterine bleeding, infertility, or recurrent pregnancy loss and with clinically and/or ultrasonographically suspected intrauterine lesions.
Interventions: All patients underwent 2D SHG and 3D SHG using saline solution infusion followed by outpatient hysteroscopy. Sonographic findings were compared with hysteroscopic findings.
Measurements and Main Results: For 2D SHG, sensitivity was 71.2%; specificity, 94.1%; positive predictive value, 90.2%; negative predictive value, 81.0%; and overall accuracy, 84.2%. For 3D SHG, sensitivity was 94.2%; specificity, 98.5%; positive predictive value, 98.0%; negative predictive value, 95.7%; and overall accuracy, 96.7%. Thus, 3D SHG was superior to 2D SHG (p = .02) and comparable with outpatient hysteroscopy (p = .12) for diagnosis of intrauterine lesions.
Conclusion: 3D SHG can be used in the initial evaluation of the uterine cavity in women of reproductive age, with accuracy comparable to that of hysteroscopy.
Keywords: 2D Ultrasound; 3D Ultrasound; Intrauterine lesions; Outpatient hysteroscopy; Sonohysterography.

961. Hysteroscopic Myomectomy of Large Submucous Myomas in A 1-step Procedure Using Multiple Slicing Sessions Technique

Mohamed Zayed, Usama M. Fouda, Shereef M. Zayed, Khaled A. Elsetohy and Ahmed T. Hashem

Journal of Minimally Invasive Gynecology, 22 (7): 1196-1202 (2015) IF: 1.83

Objective To evaluate the feasibility and efficacy of our technique for resectoscopic removal of large symptomatic submucous myomas.
Design: Prospective study (Canadian Task Force classification II-3).
Setting: A university teaching hospital and a private hospital.
Patients: Forty-nine patients with submucous myomas = 4 cm in diameter complaining of abnormal uterine bleeding. Seventeen patients were also complaining of infertility.
Interventions: The intrauterine portion of submucous myomas was resected using the slicing technique. Slicing started at the site of the maximum bulge of the myoma and was continued down to the level of the endometrial surface. Each slicing session lasted for 5 to 10 minutes. After each slicing session, saline infusion was discontinued and restarted alternatively several times to induce rapid changes in the intrauterine pressure (hydromassage) to stimulate uterine contractions. The resectoscope was removed, and ovum forceps was used to extract the myoma fragments. Bimanual massage of the uterus was performed to induce extrusion of the intramural portion of the myoma into the uterine cavity. The same steps (slicing session lasting for 5-10 minutes to excise the portion of the myoma extruded into the uterine cavity, hydromassage, and uterine massage) were repeated several times until complete removal of the myoma.
Measurements and Main Results: The mean diameter of the principle myomas was 51.94 ± 5.58 mm. The rate of 1-step complete resection of myomas was 91.84% (45/49). Improvement of bleeding symptoms was observed in all patients with complete resection of myomas.
Nine of the 17 infertile women conceived after hysteroscopic myomectomy. One-step complete resection of myomas was more frequent in patients with myomas < 6 cm (43/44 [97.73%] vs 2/5 [40%], risk ratio [RR] = 2.44, p = .002), single myomas (39/40 [97.5%] vs 6/9 [66.67%], RR = 1.46, p = .016), principle myomas with a Lasmar score < 7 (32/32 [100%] vs 13/17 [76.47%], RR = 1.31, p = .011), and myomas with less than 50% extension into the myometrium (26/26 [100%] vs 19/23 [82.61%], RR = 1.21, p = .042). The rate of 1-step complete removal of myomas was 95% (19/20) for type II myomas < 6 cm and 0% (0/3) for type II myomas = 6 cm.
Conclusion: Our technique of hysteroscopic myomectomy is a safe and effective management for submucous myomas up to 6 cm in diameter.
Keywords: Hysteroscopy; Myomectomy; Submucous myoma.

962. Comparing the Effect of Office Hysteroscopy with Endometrial Scratch Versus Office Hysteroscopy on Intrauterine Insemination Outcome: A Randomized Controlled Trial

Waleed El-Khayat, Mostafa Elsadek and Waleed Saber

European Journal of Obstetrics & Gynecology and Reproductive Biology, 194: 96-100 (2015) IF: 1.695

To evaluate the role of endometrial injury in the cycle preceding ovarian stimulation for intrauterine insemination (IUI) cycle on the clinical pregnancy rate.
Study Design: This was a prospective randomized controlled trial which included three hundred and thirty two infertile women with an indication for IUI. The subjects were randomly divided into two groups.
The intervention group (group A) (n=166) subjects underwent office hysteroscopy with endometrial injury using grasping forceps with teeth, while the control group (group B) (n=166) subjects underwent office hysteroscopy alone without endometrial injury. Primary outcome was clinical pregnancy rate.
Results: There were no significant differences in baseline or clinical characteristics between the groups. There were no significant differences in clinical pregnancy rate [13.8% (23/166) versus 12% (20/166); RR 1.15 (95% CI 0.66-2.01), p=0.62]. The abortion rate [4.3% (1/23) versus 15% (3/20); RR 0.29 (95% CI 0.03-2.57), p=0.27], the multiple pregnancy rate [13% (3/23) versus 15% (3/20); RR 0.87 (95% CI 0.20-3.83), p=0.85] and the live birth rate [13.6% (22/166) versus 10.4% (17/166); RR 1.28 (95% CI 0.71-2.32), p=0.42].
Conclusion: There is no evidence of significant difference on the clinical pregnancy rate when endometrial scratching during hysteroscopy is compared to only hysteroscopy in women undergoing IUI.
Keywords: Endometrial receptivity; Endometrial scratching; Intrauterine insemination; Office hysteroscopy.

963. Hysteroscopic Tubal Electrocoagulation Versus Laparoscopic Tubal Ligation for Patients with Hydrosalpinges Undergoing in Vitro Fertilization

Akmal El-Mazny, Nermeen Abou-Salem, Mohamed Hammam and Walid Saber

International Journal of Gynecology and Obstetrics, 130: 250-252 (2015) IF: 1.537

Objective To investigate the use and success rate of hysteroscopic tubal electrocoagulation for the treatment of hydrosalpinx-related infertility among patients undergoing in vitro fertilization (IVF) who have laparoscopic contraindications.
Methods: A prospective study was conducted among patients who had unilateral or bilateral hydrosalpinges identified on hysterosalpingography and vaginal ultrasonography, and who were undergoing IVF at a center in Cairo, Egypt, between January 1, 2013, and October 30, 2014. All patients who had contraindications for laparoscopy were scheduled for hysteroscopic tubal electrocoagulation (group 1); the other patients underwent laparoscopic tubal ligation (group 2). For all patients, hysterosalpingography was performed 3 months after their procedure to evaluate proximal tubal occlusion.
Results: Among 85 enrolled patients, 22 underwent hysteroscopic tubal electrocoagulation and 63 underwent laparoscopic tubal ligation. The procedure was successful in terms of tubal occlusion for 25 (93%) of 27 hydrosalpinges in group 1, and 78 (96%) of 81 hydrosalpinges in group 2 (P=0.597). No intraoperative or postoperative complications were reported.
Conclusion: Hysteroscopic tubal electrocoagulation was found to be a successful treatment for hydrosalpinges before IVF when laparoscopy is contraindicated.
Keywords: Hydrosalpinx; Hysteroscopy; Infertility; In vitro fertilization; Laparoscopy.

964. Addition of Growth Hormone to the Microflare Stimulation Protocol Among Women with Poor Ovarian Response

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International Journal of Gynecology and Obstetrics, 131(3): 305-308 (2015) IF: 1.537

Objective To assess the efficacy of adding growth hormone (GH) to the microflare stimulation protocol among women with poor ovarian response.
Methods: A parallel, open-label, randomized controlled trial was conducted among patients with poor ovarian response who attended a center in Cairo, Egypt, between July 10 and December 31, 2014. Participants were randomly assigned using a computer program (random block size of 4-8) to undergo the microflare protocol with or without GH. Primary outcomes were the mean numbers of mature oocytes retrieved and fertilized. Analyses were done per protocol: women with cycle cancellations were excluded.
Results: The analysis included 72 women in the GH group and 73 in the microflare only group. The mean number of oocytes collected was 7.2±1.5 in the GH group versus 4.7±1.2 in the microflare only group (P<0.001). The mean number of metaphase II oocytes was 5.2±1.2 in the GH group and 2.8±1.0 in the microflare only group (P<0.001). The mean number of fertilized oocytes was higher in the GH group (4.2±1.1) than in the microflare only group (2.5±0.7; P<0.001).
Conclusion: Addition of GH to the microflare stimulation protocol provided some potential benefits to women with poor ovarian response. However, further studies are required before it could be recommended for routine clinical use.
Keywords: Growth hormone; In vitro fertilization; Intracytoplasmic sperm injection; Microflare stimulation protocol; Poor ovarian reserve; Poor ovarian response; Poor responders.

965. A Randomized Placebo-Controlled Trial of Preoperative Tranexamic Acid Among Women Undergoing Elective Cesarean Delivery

Ahmed M. Maged, Omneya M. Helal, Moutaz M. Elsherbini, Marwa M. Eid, Rasha O. Elkomy, Sherif Dahab and Maha H. Elsissy

International Journal of Gynecology and Obstetrics, 131(3): 265-268 (2015) IF: 1.537

Objective To study the efficacy and safety of preoperative intravenous tranexamic acid to reduce blood loss during and after elective lower-segment cesarean delivery.
Methods: A single-blind, randomized placebo-controlled study was undertaken of women undergoing elective lower-segment cesarean delivery of a full-term singleton pregnancy at a center in Cairo, Egypt, between November 2013 and November 2014. Patients were randomly assigned (1:1) using computer-generated random numbers to receive either 1g tranexamic acid or 5% glucose 15minutes before surgery. Preoperative and postoperative complete blood count, hematocrit values, and maternal weight were used to calculate the estimated blood loss (EBL) during cesarean, which was the primary outcome. Analyses included women who received their assigned treatment, whose surgery was 90minutes or less, and who completed follow-up.
Results: Analyses included 100 women in each group. Mean EBL was significantly higher in the placebo group (700.3±143.9mL) than in the tranexamic acid group (459.4±75.4mL; P<0.001). Only six women, all in the placebo group, experienced an EBL of more than 1000mL. There were no reports of thromboembolic events up to 4weeks postoperatively.
Conclusion: Preoperative administration of tranexamic acid safely reduces blood loss during elective lower-segment cesarean delivery.
Keywords: Blood loss; Elective cesarean delivery; Tranexamic acid.

966. Third-Trimester Uterine Artery Doppler Measurement and Maternal Postpartum Outcome Among Patients with Severe Pre-Eclampsia

Ahmed M. Maged, Noura ElNassery, Mona Fouad, Aly Abdelhafiz and Walaa Al Mostafa

International Journal of Gynecology and Obstetrics, 131(1): 49-53 (2015) IF: 1.537

Objective To evaluate the association between uterine artery Doppler measurements and maternal complications among women with severe pre-eclampsia.

Methods: As part of a cross-sectional study, women with a single intrauterine pregnancy of more than 28 weeks and a diagnosis of severe pre-eclampsia were enrolled at a unit in Cairo, Egypt, between December 2012 and September 2014. Uterine artery Doppler was evaluated and maternal complications were recorded.
Results: Among the 100 participants, 76 (76%) experienced maternal complications. There were significant differences in resistance index (RI) and pulsatility index (PI) between women who experienced no complications and those who had accidental hemorrhage, HELLP syndrome, and acute pulmonary edema (P<0.001 for all), and postpartum hemorrhage (P=0.004 and P<0.001, respectively). There was no significant difference in RI for women with postpartum fits (P=0.360). There was a statistically significant difference regarding RI (P<0.001) and PI (P=0.005) between cases presenting with complications and those without. There was a significant negative correlation between PI and gestational age (r=-0.988; P<0.001) and between RI and gestational age (r=-0. 854; P<0.001), but no significant correlation between PI or RI and age, systolic blood pressure, or diastolic blood pressure.
Conclusion: Increased uterine artery resistance in the third trimester of pregnancy could be used to predict postpartum maternal complications.
Keywords: Maternal complications; Severe pre-Eclampsia; Uterine artery doppler measurement.

967. Ultrasound Guided Aspiration of Hydrosalpinx Fluid Versus Salpingectomy in the Management of Patients with Ultrasound Visible Hydrosalpinx Undergoing IVF-ET: A Randomized Controlled Trial

Usama M Fouda, Ahmed M Sayed, Hatem I Abdelmoty and Khaled A Elsetohy

Bmc Womens Health, 15:21: 0-0 (2015) IF: 1.495

Background: The aim of this study was to compare the efficacy of ultrasound guided aspiration of hydrosalpinx fluid at the time of oocyte retrieval with salpingectomy in the management of patients with ultrasound visible hydrosalpinx undergoing IVF-ET.
Methods: One hundred and sixty patients with ultrasound visible hydrosalpinx were randomized into salpingectomy group and aspiration group using computer generated randomization list and sequentially numbered sealed envelopes containing allocation information written on a card.
Results: The clinical pregnancy rate per started cycle and the implantation rate were non- significantly higher in the salpingectomy group compared with the aspiration group [40% vs. 27.5% (p value = 0.132) and 18.95% vs. 12.82% (p value =0.124), respectively]. In the aspiration group, 34.21% of patients had rapid re-accumulation of the hydrosalpinx fluid (i.e. within first two weeks after embryo transfer). Whereas, the clinical pregnancy rate per transfer cycle and the implantation rate were significantly higher in salpingectomy group compared with the subgroup of patients with rapid re-accumulation of hydrosalpinx fluid [42.67% vs. 19.23% (pvalue = 0.036) and 18.95% vs. 7.58% (p value = 0.032), respectively], no significant differences were detected between the salpingectomy group and the subgroup of patients with no re-accumulation of hydrosalpinx fluid (42.67% vs. 34% (p value = 0.356) and 18.95% vs. 15.5% (p value = 0.457), respectively).
Conclusion: The small sample size could be the cause of failure of detecting significant increase in implantation and pregnancy rates in salpingectomy group compared with aspiration group. Further larger randomized controlled trials are needed to determine whether salpingectomy is more effective than aspiration of hydrosalpinx fluid or not. Moreover, the data presented in this study suggested that rapid re-accumulation of hydrosalpinx fluid is an obstacle against successful implantation and the cause of lower success rate with ultrasound guided aspiration of hydrosalpinx fluid compared with salpingectomy.
Keywords: Hydrosalpinx; Salpingectomy; IVF-ET; Infertility; Ultrasound.

968. Menstrual Patterns and Disorders Among Secondary School Adolescents in Egypt. A Cross-Sectional Survey

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BMC Women Health, (2015) 15;70: 1-6 (2015) IF: 1.495

Background: To our knowledge, no large population – based studies have been performed on the topic of menstrual patterns among Egyptian adolescent in recent years. The aims of this study were to identify menstrual patterns and associated disorders as well as the sources of menstrual health knowledge among Egyptian adolescents.
Methods: A cross-sectional survey. A total of 800 questionnaires were administered to post-menarcheal Egyptian adolescents attending secondary schools in Giza, Egypt, from September 1, 2012, to December 1, 2013. Participants were asked to respond to a semi-structured questionnaire on menstrual health awareness. The questionnaire included items on girl's socio-demographic and menstrual pattern characteristics, concerning their age at menarche, menstrual cycle length and regularity, duration and amount of flow, type and severity of pain related to menstruation, need for analgesia; and symptoms suggestive of premenstrual syndrome (PMS) Main Outcome Measure: description of menstrual patterns, disorders and source of knowledge.
Results: Four hundred twelve (51.5 %) out of 800 adolescents completed the questionnaire.
The mean age of the girls was 14.67 ± 1.7 years. Mean age at menarche was 12.49 ± 1.20 years. 382 respondents reported various menstrual disorders, giving a prevalence rate of 95 %. Dysmenorrhea was the most prevalent (93 %) menstrual disorder in our sample, followed by PMS (65 %), and abnormal cycle lengths (43 %). Menstrual disorders interfered with social and academic life of 33 and 7.7 % of respondents respectively. Most participants lacked menstrual health knowledge and only 8.9 % of girls reported consulting a physician.
Conclusion: To the best of our knowledge, this is one of the largest studies on menstrual pattern and disorders among Egyptian adolescent girls.
Our Findings of the present study are consistent with other studies and reported higher than expected prevalence of menstrual disorders.
Keywords: Menstrual; Adolescents; Egypt.

969. Screening for Chlamydia Trachomatis in Egyptian Women with Unexplained Infertility, Comparing Real-time PCR Techniques to Standard Serology Tests: Case Control Study

Rana M. A. Abdella, Hatem I. Abdelmoaty, Rasha H. Elsherif, Ahmed Mahmoud Sayed, Nadine Alaa Sherif, Hisham M. Gouda, Ahmed El Lithy, Maged Almohamady, Mostafa Abdelbar, Ahmed Naguib Hosni,Ahmed Magdy and Youssef MA

Bmc Women's Health, 15: (2015) IF: 1.495

Background: To study the prevalence of Chlamydia infection in women with primary and secondary unexplained infertility using ELISA technique for antibody detection and real time, fully automated PCR for antigen detection and to explore its association with circulating antisperm antibodies (ASA).
Methods: A total of 50 women with unexplained infertility enrolled in this case control study and a control group of 44 infertile women with a known cause of infertility. Endocervical specimens were collected for Chlamydia antigen detection using PCR and serum samples for antibodies detection. Circulating anti-sperm antibodies were detected using sperm antibody Latex Agglutination tests.
Results: The overall prevalence of Chlamydial infection in unexplained infertility cases as detected by both ELISA and PCR was 40 % (20/50). The prevalence of current Chlamydial genital infection as detected by real-time PCR was only 6.0 % (3/50); two of which were also IgM positive. Prevalence of ASA was 6.0 % (3/50); all were sero-negative for anti-C.trachomatis IgM and were PCR negative.
Conclusion: The incidence of Chlamydial infection in Egyptian patients with unexplained infertility is relatively high. In the setting of fertility investigations; screening for anti. C.trachomatis antibodies using ELISA, and treatment of positive cases should be considered. The presence of circulating ASA does not correlate with the presence of old or current Chlamydia infection in women with unexplained infertility.
Keywords: Unexplained infertility; Chlamydia trachomatis; PCR; Antisperm antibodies.

970. Salivary Progesterone and Cervical Length Measurement as Predictors of Spontaneous Preterm Birth

Ahmed M. Maged, Mohamed Mohesen, Ahmed Elhalwagy and Ali Abdelhafiz1

The Journal of Maternal-fetal & Neonatal Medicine, 28: 1147-1151 (2015) IF: 1.367

Objective To evaluate the efficacy of salivary progesterone, cervical length measurement in predicting preterm birth (PTB).
Methods: Prospective observational study included 240 pregnant women with gestational age (GA) 26-34 weeks classified into two equal groups; group one are high risk for PTB (those with symptoms of uterine contractions or history of one or more spontaneous preterm delivery or second trimester abortion) and group 2 are controls.
Results: There was a highly significant difference between the two study groups regarding GA at delivery (31.3 ± 3.75 in high risk versus 38.5 ± 1.3 in control), cervical length measured by transvaginal ultrasound (24.7 ± 8.6 in high risk versus 40.1 ± 4.67 in control) and salivary progesterone level (728.9 ± 222.3 in high risk versus 1099.9 ± 189.4 in control; $p < 0.001$). There was a statistically significant difference between levels of salivary progesterone at different GA among the high risk group (p value 0.035) but not in low risk group (p value 0.492). CL measurement showed a sensitivity of 71.5% with 100% specificity, 100% PPV, 69.97% NPV and accuracy of 83%, while salivary progesterone showed a sensitivity of 84% with 90% specificity, 89.8% PPV, 85.9% NPV and accuracy of 92.2%.
Conclusion: The measurement of both salivary progesterone and cervical length are good predictors for development of PTB.
Keywords: Cervical length; Preterm birth; Salivary progesterone.

971. Could 3D Placental Volume and Perfusion Indices Measured At 11–14 Weeks Predict Occurrence of Preeclampsia in High-risk Pregnant Women?

Nawara Hashish, Ayman Hassan, Aly El-Semary, Rovan Gohar and M. A. F. M.Youssef

J Matern Fetal Neonatal Med., 28: (2015) IF: 1.367

Objective Preeclampsia (PE) is a known cause of maternal, fetal and neonatal morbidity and mortality. Thus, evaluation of the predicting value of combining the 3D assessment of placental volume with the assessment of placental perfusion indices through 3D power Doppler (3DPD) at 11-14 weeks in pregnant women at high risk to develop PE could be a suitable screening method.
Methods: 3D assessment of placental volume and 3DPD assessment of placental vascularization indices at 11-13 weeks and uterine artery Doppler scan (RI and PI) at 21-22 weeks were conducted in this prospective case-control study. Their predictive ability for PE was assessed.
Results: One-hundred pregnant women divided into two groups were enrolled in our study. High-risk group (n=50) and control group (n=50). Thirty-eight (76%) patients in the high-risk group and 6.0 (12%) patients in the control group developed PE, respectively. The mean values of placental volume (<0.001), vascularization index (<0.001), vascularization flow index (<0.002) were significantly lower in the high-risk group. Meanwhile, uterine artery RI (0.011) and PI (<0.001) was significantly higher in the study group. Uterine artery PI is negatively correlated with placental volume and vascularization indices (-0.36).
Conclusion: Our findings suggest that 3D placental volume measurement and 3DPD assessment of placental vascular indices in the first trimester has the potential to detect women at risk for subsequent development of PE.
Keywords: Doppler indices; placental volume; preeclampsia.

972. Routine Office Hysteroscopy Prior to ICSI Vs. ICSI Alone in Patients with Normal Transvaginal Ultrasound: A Randomized Controlled Trial

Khaled Ahmed Abdel Aziz Elsetohy, Ahmed H. Askalany, Mohamed Hassan and Zamam Dawood

Archives of Gynecology and Obstetrics, 291: 193-199 (2015) IF: 1.364

Background Implantation failure represents a major cause of stress to both clinician and patient undergoing ICSI cycle. Even minor uterine cavity abnormalities, such as endometrial polyps, small submucous myomas, adhesions, and septa are considered to have a negative impact on the chance to conceive through ICSI. Aim This study aimed at assessing the role of using the office hysteroscopy as a routine investigation in improving ICSI pregnancy rates. Methodology ICSI was performed in two groups of infertile women with no abnormality detected in transvaginal ultrasonographic examination, group I: n = 97 and group II: n = 96, women in group I were subjected to hysteroscopic examination before ICSI while group II underwent ICSI without hysteroscopy. Then, ICSI was performed for all subjects of the two study groups with no statistically significant difference (p[0.05) regarding the number of oocytes retrieved and the number of embryo transfer. Then, all subjects were followed up for 3 weeks after embryo transfer for detection of pregnancy by ultrasound.
Results 43.3 % of group I showed abnormal hysteroscopic findings. Group I showed a significantly higher pregnancy rate (70.1 %) than that of group II (45.8 %) (p = 0.001). There is statistically significant association between the use of hysteroscopy prior to ICSI and the rate of pregnancy (OR 2.77, 95 % CI [1.53–5.00]). In addition, hysteroscopy had detected abnormalities in near half of cases whose ultrasound was normal.
Conclusion Routine office hysteroscopy is an essential step for infertility workup before ICSI even in patients with normal TV/US.
Keywords: Hysteroscopy ICSI Pregnancy Rate Intrauterine Complications.

973. The Adjuvant Effect of Metformin and N-Acetylcysteine to Clomiphene Citrate in Induction of Ovulation in Patients with Polycystic Ovary Syndrome

Ahmed M. Maged, Heba Elsawah, Aly Abdelhafez, Ahmed Bakry and Walaa AI Mostafa

Gynecological Endocrinology, 31(8): 635-638 (2015) IF: 1.333

Objectives: To assess the adjuvant effect of metformin and N-acetylcysteine (NAC) to clomiphene citrate (CC) in induction of ovulation in Polycystic Ovary Syndrome (PCOS) patients.
Study Design: 120 women with PCOS were randomly divided into three equal groups: group I received CC only, group II received CC plus NAC and group III received CC plus metformin.
Results: There was a significant difference between group II and other two groups regarding average number of ovulatory follicles >18mm (2.25 versus 1.75 and 1.89, respectively), but no significant difference between the three study groups regarding number of intermediate follicles 14-18mm (4, 10 and 4, respectively). There was no significant difference between the three study groups regarding occurrence and laterality of ovulation, pregnancy rate per cycle but a significant difference between group II and other two groups regarding pregnancy rate per patient (20% versus 10% and 10%, respectively, p value 0.05). There was a highly statistically significant difference between group II and other two groups regarding peak endometrial thickness (7.3± 1.1 versus 5.4±0.6 and 5.3±0.6, respectively).
Conclusions: NAC as an adjuvant to CC for induction of ovulation improves ovulation and pregnancy rates in PCOS patients with beneficial impacts on endometrial thickness.
Keywords: Clomiphene citrate; N-acetylcysteine; Polycystic ovary syndrome; Induction of ovulation; Metformin.

974. Oral Antioxidants Supplementation for Women with Unexplained Infertility Undergoing ICSI/IVF: Randomized Controlled Trial

Mohamed A. F. M. Youssef, Hatem I. Abdelmoty, Hazem A. Elashmwi, Esaad M. Abduljawad, Nevin Elghamary, Ahmed Magdy, Mohamed N. Mohesen, Rana M. A. Abdella, Mostafa Abdel Bar, Hisham M. Gouda, Ahmed Mahmoud Sayed Ali, Ayman N. Raslan, Dalia Youssef, Nadin A. Sherif and Aboulfoutouh I. Ismail

Human Fertility, 18: 38-42 (2015) IF: 0.909

Objective Good oocyte quality and maturity are important prerequisites for high fertilization and implantation rates in IVF/ICSI treatment cycles. Reactive oxygen species (ROS) are produced within ovarian follicles, especially during the ovulation process, and increased ROS activity may be a cause of impaired oocyte maturation and higher rate of failure of IVF/ICSI cycles.
Study Design: RCT evaluating the effect of antioxidant supplementation on ICSI/IVF outcomes. Two hundred and eighteen women with unexplained subfertility undergoing IVF/ICSI were randomized into two groups. The study group (n = 112) received daily oral antioxidants in the form of multivitamins and minerals (amino acid chelated) while the control group (n = 106) did not. Main outcomes were number of mature metaphase II (MII) oocytes and clinical pregnancy rate.
Results: There were no significant changes between the groups as regards age, BMI, basal FSH, number of mature (MII) oocytes (12.7 ± 9.4 vs. 13.2 ± 8.6, P = 0.7) and clinical pregnancy rate per woman randomized (38% vs. 34%; [OR = 1.2; 95% CI, 0.70-2.11].
Conclusion: Oral antioxidants in the form of a combination of multivitamins and minerals (amino acid chelated) did not improve oocyte quality and pregnancy rates in women with unexplained infertility undergoing IVF/ICSI treatment.
Keywords: Antioxidants; IVF/ICSI; Ovarian stimulation.

975. A Double-blind Randomized Controlled Trial of Two Different Doses of Misoprostol for Cervical Priming Prior to Office Hysteroscopy

Waleed El-Khayat, Login Dwidar, Heba Elsawah and Omima Idris

Middle East Fertility Society Journal, 20: 1-5 (2015)

Objective To evaluate and compare the effectiveness of 200 μg vaginal misoprostol vs. 400 μg vaginal misoprostol administrated 3 h prior to office hysteroscopy, in cervical priming. Design: Randomized controlled trial. Setting Outpatient clinic of the Cairo University Hospital, Cairo, Egypt.
Materials and Methods One hundred and thirty-two women scheduled for office hysteroscopy; were randomized into two groups. Patients were divided into two groups: group I; 66 patients received 200 μg vaginal misoprostol and group II; 66 patients received 400 μg vaginal misoprostol. Primary outcome

was pain score (visual analogue scale). Major outcome measures 400 μg vaginal misoprostol significantly minimized pain score and procedure time, a significant increase in the ease of entry and the patient acceptability was observed in the 400 μg vaginal misoprostol group. Side effects of misoprostol were minor and transient with no statistically significant difference between both groups.
Major **Conclusion**s 400 μg vaginal misoprostol 3 h prior to office hysteroscopy appears to be more effective than 200 μg vaginal misoprostol in facilitating cervical ripening, minimizing pain score and procedure time, without any increase in side effect occurrence.
Keywords: Office hysteroscopy; Misoprostol; Cervical priming.

Dept. of Ophthalmology

976. Is Viscotrabeculotomy Superior to Conventional Trabeculotomy in the Management of Egyptian Infants with Congenital Glaucoma?

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Acta Ophthalmologica, 93: 366-371 (2015) IF: 2.844

Purpose: The aim of this study was to assess the efficacy of viscotrabeculotomy in the management of congenital glaucoma as compared to conventional trabeculotomy, in Egyptian infants.
Methods: This is a prospective interventional randomized comparative study in which patients with primary congenital glaucoma were randomly allocated to either group A or B; viscotrabeculotomy (VT); and trabeculotomy (T), respectively. Patients were followed up regarding intra-ocular pressure (IOP), cup/disc (C/D) ratio and horizontal corneal diameter (HCD) for 6 months. A probability value (p value) <0.05 was considered significant.
Results: Twenty-one eyes in group A and 20 eyes in group B were enrolled in the study. The mean preoperative IOP was 23.5 and 24.3 mmHg in the VT and T groups, respectively. Postoperatively, IOP dropped at six months to 14.7 and 17 mmHg in the VT and T groups, respectively. That was significant in either group when compared to preoperative IOP, but not significant between both groups at the same point of comparison.
Conclusions: Both techniques were equally effective in the reduction in IOP in the management of congenital glaucoma, but viscotrabeculotomy did not appear to add more benefit to the surgical outcome than classic trabeculotomy.
Keywords: Congenital glaucoma; Egypt; Trabeculotomy; Viscotrabeculectomy.

977. Spectral-domain Optical Coherence Tomography of Preclinical Chloroquine Maculopathy in Egyptian Rheumatoid Arthritis Patients

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Journal of Ophthalmology, 2015: 292357-7 (2015) IF: 1.425

Purpose. To evaluate the role of spectral-domain optical coherence tomography (SD-OCT) in early detection of Chloroquine maculopathy in rheumatoid arthritis (RA) patients.
Methods. 40 left eyes of 40 female rheumatoid arthritis patients who received treatment chloroquine for more than one year were recruited in the study. All patients had no symptoms or signs of Chloroquine retinopathy. They were evaluated using SD-OCT, where the Central Foveal Thickness (CFT), parafoveal thickness and perifoveal thickness, average Retinal Nerve Fiber Layer (RNFL) thickness, and Ganglion Cell Complex (GCC) measurements were measured and compared to 40 left eyes of 40 normal females.
Results. The mean CFT was found to be thinner in the Chloroquine group (238.15 μm ± 22.49) than the normal controls (248.2 μm ± 19.04), which was statistically significant (p value = 0.034). The mean parafoveal thickness was lesser in the Chloroquine group than the control group in all quadrants (p value < 0.05). The perifoveal thickness in both groups showed no statistically significant difference (p value > 0.05) in all quadrants. No significant difference was detected between the two groups regarding RNFL, GCC, or IS/OS junction.
Conclusions. Preclinical Chloroquine toxicity can lead to early thinning in the central fovea as well as the parafoveal regions that is detected by SD-OCT.
Keywords: Rheumatoid arthritis; Chloroquine; Spectral-domain Oct.

978. Short Term Outcome of Anterior Lamellar Reposition in Treating Trachomatous Trichiasis

Rania A. Ahmed and Sameh H. Abdelbaky

Journal of Ophthalmology, 2015, (2015) IF: 1.425

Purpose. To evaluate the outcome of anterior lamellar reposition (ALR) in treating trachomatous trichiasis.
Methods. Patients with trachomatous trichiasis or entropion with short tarsus were treated by ALR between February 2009 and November 2013. This included splitting of the lid margin behind the aberrant lash line to separate the lid lamellae. The anterior lamella was recessed and fixated using 4/0 silk sutures. The extra lashes and their routes were excised. Sutures were removed by the 3rd week and patients completed 6 months of follow-up. Recurrence of =5 lashes was treated by electrolysis.
Results. The study included 752 eyelids (445 patients; 58.4% females, 41.6% males), mean age 53.2 ± 6.9y. 179 (25.1%) lids had entropion while 287 (64.5%) patients had corneal affection. By the third week, 2.66% lid had trichiasis while 30.8% had no rubbing lashes. By the 6th month, 14.9% of lids showed recurrence while 66.1% were completely cured (CI = 0.63-0.69) and 19% had partial success (CI = 0.16-0.21). Abnormal lid appearance persisted in 2.66% and 12.9% required another surgery.
Conclusion. ALR is a good option for treating trachomatous trichiasis especially without cicatricial entropion. Excision of dysplastic lashes is thought to augment the surgical outcome.
Keywords: Trachoma; Trichiasis; Anterior lamellar recession.

979. Evaluation of the Lower Punctum Parameters and Morphology Using Spectral Domain Anterior Segment Optical Coherence Tomography

Riham S. H. M. Allam and Rania A. Ahmed

Journal of Ophthalmology, (2015) IF: 1.425

Purpose. To study features of the lower punctum in normal subjects using spectral domain anterior segment optical coherence tomography (SD AS-OCT).
Methods. Observational cross-sectional study that included 147 punctae (76 subjects). Punctae were evaluated clinically for appearance, position, and size. AS-OCT was used to evaluate the punctal shape, contents, and junction with the vertical canaliculus. Inner and outer diameters as well as depth were measured.
Results. 24 males and 52 females (mean age 44 ± 14.35 y) were included. Lower punctum was perceived by OCT to be an area with an outer diameter (mean 412.16 ± 163 μm), inner diameter (mean 233.67 ± 138.73 μm), and depth (mean 251.7 ± 126.58 μm). The OCT measured outer punctum diameter was significantly less than that measured clinically (*P*: 0.000). Seven major shapes were identified. The junction with the vertical canaliculus was detectable in 44%. Fluid was detected in 34%, one of which had an air bubble; however, 63% of punctae showed no contents and 4% had debris.
Conclusions. AS-OCT can be a useful tool in understanding the anatomy of the punctum and distal lacrimal system as well as tear drainage physiology. Measuring the punctum size may play a role in plugs fitting.
Keywords: Punctum; Anterior segment; Optical coherence tomography; Morphology; In vivo; Diameter.

980. Prevalence of Visual Impairment and Refractive Errors in Children of South Sinai, Egypt

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Ophthalmic Epidemiology, 22 (4): 246-252 (2015) IF: 1.148

Purpose: To assess the prevalence and causes of visual impairment in children of South Sinai, and to evaluate outcomes of rehabilitation programs.
Methods: Population-based, cross-sectional analysis of 2070 healthy school children screened for visual impairment from 2009 through 2010 in cities of South Sinai and their surrounding Bedouin settlements. Visual acuity (VA) was tested using Snellen charts followed by cycloplegic autorefractometry for cases with presenting VA ≤ 6/9. Appropriate eyeglasses were prescribed and VA re-evaluated.
Results: This study included 1047 boys and 1023 girls, mean age 10.7 ± 3.1 years. Visual impairment (uncorrected VA ≤ 6/9) was detected in 29.4% of children, while 2.0% had moderate–severe visual impairment (uncorrected VA ≤ 6/24). There were statistically significant differences in prevalence of visual impairment between the studied cities (p50.05), with the highest prevalence in Abu Redis. Prevalence of visual impairment was significantly higher among girls (p50.05) and those with positive consanguinity (p50.05). Bedouin children showed significantly lower prevalences of visual impairment. Only age was a reliable predictor of visual impairment (odds ratio 0.94, p50.0001). Ophthalmic examination revealed other disorders, e.g. dry eye (4.74%), squint (2.37%), exophthalmos (1.58%) and ptosis (0.79%). VA significantly improved in children who received spectacles (p50.001).
Conclusion: A total of 29.4% of South Sinai children had some form of visual impairment, 90.32% of which comprised refractive errors (mainly astigmatism) which were significantly corrected with eyeglasses. VA screening and correction of refractive errors are of the utmost importance for ensuring better visual outcomes and improved school performance.
Keywords: Children; Prevalence; Refraction error; School; Visual impairment.

981. Evaluation of Sex Differences in Corneal Hysteresis

Riham S.H.M. Allam and Noha M.M.M. Khalil

European Journal of Ophthalmology, 25(5): 391-395 (2015) IF: 1.068

Purpose To study sex differences in corneal biomechanical parameters in Egypt as regards to corneal hysteresis (CH), corneal resistance factor (CRF), Goldmann-correlated intraocular pressure (IOPg), and corneal-compensated intraocular pressure (IOPcc).
Methods This is a cross-sectional observational study that includes 350 eyes of 350 normal subjects (175 men and 175 women) who were evaluated using the Reichert ocular response analyzer (ORA) to measure CH, CRF, IOPg, and IOPcc.
Results The mean CH in men was 9.69 ± 2.05 mm Hg (range 5.7-14.6 mm Hg) and in women 10.41 ± 1.65 mm Hg (range 7-14.4 mm Hg) with a p value of 0.00038. The mean CRF in men was 9.54 ± 2.16 mm Hg (range 4.9-14.4 mm Hg) and in women was 10.37 ± 1.71 mm Hg (range 7.3-15.5 mm Hg) with a p value of 0.00008. The mean IOPg in men was 14.78 ± 4.15 mm Hg (range 7.2-26.5 mm Hg) and in women was 15.44 ± 3.3 mm Hg (range 8.6-23.7 mm Hg) with a p value of 0.09. The mean IOPcc in men was 16.2 ± 4.08 mm Hg (range 10.9-28.9 mm Hg) and in women was 15.86 ± 3.41 (range 9.7-24.2 mm Hg) with a p value of 0.4. There was a statistically significant difference between men and women in CH and CRF while IOPg and IOPcc showed no statistically significant difference (p>0.05).
Conclusions There is a statistically significant difference between men and women in CH and CRF, where women show higher values, while no statistically significant difference exists between the groups in IOPg or IOPcc.
Keywords: Corneal-compensated IOP; Corneal hysteresis; Corneal resistance factor; Goldmann-correlated IOP; Sex difference.

982. Surgical Management of Monocular Elevation Deficiency Combined with Inferior Rectus Restriction

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Journal of American Association of Pediatric Ophthalmology and Strabismus, 19: 316-321 (2015) IF: 1.003

Purpose To evaluate the Results of ipsilateral inferior rectus (IR) recession, when performed alone or in combination with contralateral superior rectus (SR) recession in patients with monocular elevation deficiency (MED) and IR tightness.
Methods The medical records of patients with MED and tight IR muscle were retrospectively reviewed. Patients underwent either ipsilateral IR recession alone (IR group) or combined with contralateral SR recession (IR1SR group). Pre- and postoperative ocular motility and alignment and fundus torsion were analyzed. Abnormal head posture was recorded. All patients were followed for at least 6 months.
Results A total of 23 patients were identified. Mean patient age at time of surgery was 9.8 8.7 years (range, 3-45 years). Ten patients underwnet ipsilateral IR recession 5–8 mm; 13 patients, 4 mm ipsilateral IR recession combined with 5–12 mm contralateral

SR recession. Both groups experienced marked improvement in ocular alignment in the primary position (P 5 0.34). However, there was a statistically better ocular alignment in both upgaze (P 5 0.03) and downgaze (P\0.01) in the IR1SR group, with a lower degree of fundus intorsion (P\0.01). An ipsilateral head tilt developed in 70% of patients in the IR group and in 54% of patients in the IR1SR group.

Conclusions In this patient cohort, combined contralateral SR recession with ipsilateral IR recession reduced postoperative IR underaction and achieved better ocular alignment in upgaze and downgaze.

Keywords: Monocular elevation deficiency; Superior rectus recession; Inferior rectus recession; Double levator palsy.

983. Predicting Postoperative Visual Outcomes in Cataract Patients with Maculopathy

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Indian Journal of Ophthalmology, 63: 775-778 (2015) IF: 0.9

Purpose: To assess the accuracy of the potential acuity meter (PAM) in predicting postcataract surgery visual acuity outcome in patients with healed inactive maculopathies. Study Design: Prospective interventional clinical trial.

Patients and Methods: Patients scheduled for phacoemulsification had preoperative and 1 month postoperative best-corrected visual acuity (BCVA), PAM test, fluorescein angiography, and macular optical coherence tomography. Patients were grouped to following preoperative BCVA: PRE1: 0.29 and better, PRE2: 0.25–0.13, and PRE3: 0.1 or worse; age: G1 <60, G2 = 60–70, and G3 >70 years. PAM accuracy was divided into: Grade 1: Postoperative BCVA =1 or less line error of the PAM score, Grade 2: Between 1 and 2 lines error, and Grade 3: =3 lines or more error.

Results: This study enrolled 57 patients with a mean age of 71.05 ± 6.78 years where 34 were females. There were 21 (36.84%) patients with diabetic maculopathy and 36 (63.16%) with age-related macular degeneration. The mean preoperative BCVA was 0.198 ± 0.12 (0.1–0.5). The mean PAM score was 0.442 ± 0.24 (0.1–1.3). The mean postoperative BCVA was 0.4352 ± 0.19 (0.17–1.00). The PAM score was in Grade 1, 2, and 3 in 46 (80.7%), 54 (94.7%), and 56 (98.2), respectively. There was a highly significant correlation between the PAM score and the postoperative BCVA (P < 0.001, Chi-square test). There was no correlation between the PAM test accuracy and age, gender, diagnosis, and preoperative BCVA (P = 0.661, 0.667, 0. 0.991, 0.833, Chi-square test; respectively).

Conclusion: The PAM is an accurate method of predicting postoperative visual acuity for eyes with nuclear cataracts Grade I and II and inactive maculopathies.

Keywords: Age-related macular degeneration; Best-corrected visual acuity; Cataract surgery; Diabetic maculopathy; Potential acuity meter.

984. Femtosecond Laser-assisted Implantation of Complete Versus Incomplete Rings for Keratoconus Treatment

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Clinical Ophthalmology, 20: 121-127 (2015)

Purpose: To compare complete versus incomplete ring implantation for keratoconus correction.

Methods: We investigated 25 eyes of keratoconic patients, of which 15 had femtosecond-assisted MyoRing corneal implantation (Group 1) and 10 had femtosecond-assisted Keraring segments (Group 2). Uncorrected distance visual acuity (UCVA), best corrected distance visual acuity (BCVA), mean K (K m), sphere, topographic cylinder, and corneal asphericity value (Q-value) were measured in all eyes preoperatively and at 4 weeks postoperatively (1 month).

Results: In Group 1, the K m change was -6.15±2.16 D, with a mean change in sphere of 4.45±2.18 D and a mean change in refractive cylinder of 2.32±3 D. UCVA change was -0.57±0.273 logarithm of the minimum angle of resolution (LogMAR), BCVA change was -0.2±0.27 (LogMAR), and the Q-value change was 0.43±2.6. In Group 2, the K m change was -3.15±1.68 D, UCVA change was -0.48±0.37 (LogMAR), BCVA change was -0.09±0.15 (LogMAR), and the Q-value change was 0.5±0.21. Changes in the means did not significantly differ between groups, except for the K m change, which was significantly greater in Group 1 than in Group 2 (P=0.05).

Conclusion: Both complete ring and ring segment implantation are effective for improving corneal and visual parameters in keratoconus. Complete ring implantation may have a greater flattening effect on the anterior corneal surface.

Keywords: Keraring; Myoring; Femtosecond; Keratoconus.

Dept. of Parasitology

985. Molecular Seasonal, Age and Gender Distributions of Cryptosporidium in Diarrhoeic Egyptians: Distinct Endemicity

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Europian Journal of Clinical Microbiology and Infectious Diseases, 34: 2447-2453 (2015) IF: 2.668

Cryptosporidiosis is a worldwide gastrointestinal disease caused by the protozoan Cryptosporidium parasite. It has a broad range of seasonal and age-related prevalence. We aimed to study the molecular prevalence and seasonality of Cryptosporidium over a period of 1 year in a cohort of Egyptian diarrhoeic patients. Stool samples were collected from 865 diarrhoeic patients attending outpatient clinics of Cairo University hospitals, from all age groups over a 12-month period, examined microscopically for faecal Cryptosporidium oocysts by the acid-fast staining method and for copro-DNA detection using nested polymerase chain reaction (nPCR) assays. PCR-positive samples were characterised molecularly by nPCR-restriction fragment length polymorphism (RFLP) to determine Cryptosporidium genotypes. Cryptosporidium copro-DNA was detected in 19.5 % of the collected samples throughout the year, with a major peak in summer (August) and a small rise in spring (April). Infection was mainly C. hominis (95.8 %) followed by C. parvum (3.0 %), affecting all age groups, with predominance in the pre-school age group, and decrease with age. There were statistically significant associations between the detection of Cryptosporidium and season, diarrhoea, patient age and drinking water, while gender, contact with animals and presence of mucus in stool showed no association. Cryptosporidium in diarrhoeic Egyptians was of distinct endemicity, with the bi-model mostly influenced by population dynamics, with a clear high prevalence in pre-school

children and predominating anthroponotic (C. hominis) transmission throughout the year. The obtained Results highlight Cryptosporidium as a water contaminant and an important cause of health problems in Egypt, necessitating further studies of the risk factors.

Keywords: Cryptosporidium; Molecular seasonality; Endimicity.

986. Genomic Instability in Complicated and Uncomplicated Egyptian Schistosomiasis Haematobium Patients

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Molecular Cytogenetics, 8:1, (2015) IF: 2.14

Background Exploration of genetic changes during active Schistosoma infection is important for anticipation and prevention of chronic sequelae. This study aimed to explore the genomic instability in chromosomal and cellular kinetics in Egyptians suffering from uncomplicated active schistosomiasis haematobium infection in addition to chronic schistosomiasis haematobium cases complicated by bilharzial-associated bladder cancer (BAC).

Results This study was conducted on 46 schistosomiasis haemotobium cases, 22 were active (Viable S. haematobium eggs in urine samples as detected by microscopy) and 24 were chronic complicated with bladder cancer. Three cytogenetic techniques were applied; the first was quantitative nuclear-morphocytometry by means of which the Feulgen-stained nuclei were analyzed for parameters including shape, size, integrated optical-density and nuclear area. The second was Fluorescent In-Situ Hybridization (FISH) for specific p53gene-locus of chromosome 17 and the third technique was karyotyping. Concerning chronic complicated cases, the mea ± SD of DNA-content in urinary bladder tissue sections was 3.18±0.65. Five samples (20.83%) of bladder tissue sections of chronic complicated cases showed diploid nuclei, 6 urinary bladder tissue samples (25%) were tetraploid, while 13 bladder samples (54.16%) were aneuploid. Epithelial cells of urine samples demonstrated aneuploidy (mean ± SD=3.74 ± 0.36).Nuclear contents showed high proliferative DNA index in all urinary epithelial cells. In the acute uncomplicated group, nuclear-DNA of urinary epithelial cells was found diploid with mean nuclear-DNA content of 2.2 ± 0.16SD. Half of these diploid smears had a high proliferation index. The difference between nuclear DNA-contents in acute and chronic cases was significant (P = 0.0001). FISH technique for specific p53gene-locus and karyotyping were done on urinary bladder tissue specimens and peripheral blood monocytes of 8 chronic cases respectively. Three samples (37.5%) with invasive BAC had a deletion of the p53 gene. Karyotyping showed three cases out of the 8 chronic schistosomiasis haematobium patients with chromosomal fragmentations.

Conclusions DNA morphometry was valuable in detection of gross genetic changes in urothelial tissues. It is an important prognostic factor in established schistosomiasis haematobium induced bladder malignancy. It has the great advantage of being applicable on urine cells making it suitable for the prediction of a tendency towards genetic instability in active schistosomiasis haematobium patients.

Keywords: Schistosomiasis haematobium; Chromosomal abnormalities; Morphocytometry; Fish; Karyotyping.

987. Kasr Al Ainy, the Story of A Palace That Became A Medical School

Nadia A. Eldib

Al Ainy Medical Journal, 21 (1): 1-6 (2015) IF: 2

Kasr Al Ainy, the palace built by Ahmed Ibn Al Ainy, in the years (A.D.1466-1468) by the Nile shore in the area known till now as Mouth of Khalig. This palace played an important part in the history of Cairo and Egypt which extends till now.

It was used as a governmental building, a Chateau, a military hospital and a primary school till the year 1837. Mohamed Ali Pasha introduced the European military system in Egypt and wanted to provide it with the medical aid. He assigned Dr. Clot Bey, from France to establish a medical school in Abu Za'abal to prepare doctors for the army in the year 1827. It was after 10 years that the medical school was transferred to Kasr Al Ainy as a medical school and hospital. Kasr Al Ainy witnessed all the changes that occurred in Egypt till now, serving all the Egyptians and non-Egyptians.

Keywords: Ahmed Ibn Al Ainy; Cairo University; Clot Bey; Faculty of Medicine; Kasr Al Ainy; Theodore Bilharse; Mohamed Ali Pasha.

988. Copro Prevalence and Estimated Risk of Entamoeba Histolytica in Diarrheic Patients At Beni-Suef, Egypt

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World J Microbiol Biotechnol, 31: 385-390 (2015) IF: 1.779

Amoebiasis diagnosis is usually based on microscopy that cannot differentiate pathogenic E. histolytica from morphologically identical non-pathogenic species. 194 fecal samples were collected from diarrheic &/or dysenteric patients and examined for Entamoeba complex microscopically, E. histolytica/E. dispar coproantigen using ICT and E. histolytica coproantigen using Tech lab E. histolytica II ELISA test. Entamoeba complex trophozoites/cysts, E. histolytica/E. dispar coproantigen and E. histolytica coproantigen were detected in 22.2, 14.4 and 3.6 % of samples, respectively.

Microscopy and ICT method had limited sensitivity with poor PPV (9.3 and 7.1 %, respectively) and both slightly agree with ELISA test.

The prevalence of E. histolytica was low (3.6 %) in studied individuals and was 14 times lower than nonpathogenic amoebae. E. histolytica detection studied individuals was positively associated with mucoid and bloody stool, which makes them disease predictors. E. histolytica fecal ELISA assay for E. histolytica detection surpassed microscopy and E. histolytica/E. dispar ICT assay. This has highlighted the need for practical non-microscopic detection Methods that can differentiate between amoeba infections to avoid unnecessary and possibly harmful therapies and to determine the true prevalence and epidemiology of E. histolytica.

989. Simultaneous Detection of Entamoeba Histolytica/dispar, Giardia Duodenalis and Cryptosporidia By Immunochromatographic Assay in Stool Samples from Patients Living in the Greater Cairo Region, Egypt

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World Journal of Microbiology and Biotechnology, 31 (8): 1251-1258 (2015) IF: 1.779

Gastrointestinal infection due to intestinal parasites is an enormous health problem in developing countries and its reliable diagnosis is demanding. Therefore, this study aimed at evaluating a commercially available immunochromatographic assay (ICA) for the detection of cryptosporidia, Giardia duodenalis, and Entamoeba histolytica/dispar for its usefulness in the Greater Cairo Region, Egypt. Stool samples of 104 patients who presented between October 2012 and March 2013 with gastrointestinal symptoms or for the exclusion of parasites at Kasr-Al-Ainy University Medical School were examined by light microscopy of wet mounts and the triple ICA. Microscopy revealed in 20 % of the patients [95 % confidence interval (CI), 13.5–29.0 %] parasites with Hymenolepis nana, E. histolytica/dispar and Blastocystis hominis being the most frequent ones, but was not able to detect G. duodenalis and cryptosporidia, whereas ICA was positive in 21 % (95 % CI, 14.3–30.0 %) and detected E. histolytica/dispar in 12.5 % (95 % CI, 7.3–20.4 %), cryptosporidia in 6.7 % (95 % CI, 3.1–13.5 %) and G. duodenalis in 15.4 % (95 % CI, 9.6–23.6 %) of the patients. Detection of one or more pathogens was associated with access to water retrieved from a well or pump ($p = 0.01$). Patients between 20 and 29 years of age ($p = 0.08$) and patients with symptoms of 5 days or longer ($p = 0.07$) tended to have a higher risk to be infected than patients of other age groups or with shorter-lasting symptoms. In Conclusion, the ICA was easy to perform and timesaving. Importantly, it enabled the detection of cryptosporidia, which cannot be found microscopically in unstained smears, demonstrated a higher sensitivity for the detection of G. duodenalis than microscopy, and was more specific for distinguishing E. histolytica/dispar from apathogenic amoeba.

990. Molecular Detection of Capillaria Philippinensis: an Emerging Zoonosis in Egypt

Nadia A. El-Dib, Ayman A. El-Badry, Thuy-Huong Ta-Tang and Jose M. Rubio

Experimental Parasitology, 154: 127-133 (2015) IF: 1.638

Human infection with Capillaria philippinensis is accidental; however, it may end fatally if not diagnosed and treated in the proper time. The first case was detected in the Philippines in 1963, but later reported in other countries around the world, including Egypt. In this report, molecular diagnosis using a specific nested PCR for detection of C. philippinensis in faeces is described based on the amplification of small ribosomal subunit. The test showed sensitivity and specificity, as it detected all the positive cases and gave no cross-reaction with human DNA and DNA of other tested parasites. This method can be very useful not only for improvement of diagnosis, but also to understand the different environmental routes of transmission by detection of C. philippinensis DNA-stages in the possible fish intermediate hosts and reservoir animal host, helping to improve strategies for surveillance and prevention of human disease.

Keywords: Capillaria philippinensis; Nested PCR; Copro-DNA; Mal-absorption; Capillariasis.

991. Immunohistochemical Pattern of T Lymphocytes Population Within Bilharzial-Associated Bladder Neoplasm Microenvironment

Amany Ahmed Abd El-Aal, Ashraf Mohamed Emran, Abeer Said Al-Antably, Enas Ali El Saftawy, Ibrahim R Bayoumy, Nabila Salah Hassan and Manal Badawi

International Journal of Immunopathology and Pharmacology, 28(2): 209-217 (2015) IF: 1.617

The present work aimed to investigate the cellular and immunochemical pattern of T cells population in biopsy material from chronic schistosomiasis haematobium Egyptian patients complicated with bladder cancer. Digital real-time quantitative photocytometry was applied to auto-analyze 29 stained tissue sections from cases and 17 controls using STAT4, GATA3, FOXP3, and CD8 markers specific for Th1, Th2, T regulatory, and T cytotoxic cells, respectively. Area percentage showed significant high level of GATA, followed by FOXP3 and low level of both STAT and CD8 was reported. Tissue samples from five healthy bladder tissues showed significant lower optical density (OD) values. Tissue samples from 12 non-bilharzial bladder cancers showed variable OD values, reflecting wide disparity in the control group. Our Results hypothesized an exclusive pattern of T population in long standing complicated schistosomiasis haematobium. Our cases were poorly controlled by unbalanced Th1/Th2 in which Th2 was dominated. FOXP3 increased significantly, however, failed to downregulate Th2, instead, the relation between Th1 and T cytotoxic was forcibly limited by the high level of FOXP3, resulting in loss of their power in defending the host against both parasite and carcinogenic changes. These Results provide more clarification for the immune evasion process played by the parasite and tumor cells under the supervision of T regulatory cells. Additionally a critical role of FOXP3 is suggested in manipulating STAT4 and CD8 in favor of malignant transformation in this life-threatening parasite.

Keywords: Quantitative photocytometry; Schistosomiasis haematobium; T Cells population.

992. Clinical and Laboratory Investigations of Cases Infected with Capillaria Philippinensis in Beni-Suef Governorate, Egypt

Fadia Mohamed Anwar Amin, Nadia Aly El-Dib, Enas Yahia Abu-Sarea Mohamed and Mona Ebrahim Aly

Comp Clin Pathol, 23(5): 1-8 (2015)

Capillaria philippinensis is a zoonotic intestinal parasite that emerged in the 1960s in the Philippines and appeared later causing emerging infection in Egypt. The disease caused by C. philippinensis is frequently fatal if not diagnosed and treated early and correctly. In the present study, detection of this parasite was done in Beni-Suef University Hospital by using clinical and laboratory investigations. The study was conducted from January

2010 to May 2011 and reported eight female cases of intestinal capillariasis out of 160 patients presented with chronic diarrhea and other gastrointestinal symptoms.
Keywords: Intestinal capillariasis; Chronic diarrhea; Prevalence of C; Philippinensis; Diagnosis of C. Philippinensis.

Dept. of Pediatrics

993. Mutations in TRAF3IP1/IFT54 Reveal A New Role for IFT Proteins in Microtubule Stabilization

Albane A. Bizet, Anita Becker-Heck, Rebecca Ryan, Kristina Weber, Emilie Filhol, Pauline Krug, Jan Halbritter, Marion Delous, Marie-Christine Lasbennes, Bolan Linghu, Edward J. Oakeley, Mohammed Zarhrate, Patrick Nitschke´, Meriem Garfa-Traore, Fabrizio Serluca, Fan Yang, Tewis Bouwmeester, Lucile Pinson, Elisabeth Cassuto, Philippe Dubot, Neveen A.Soliman Elshakhs, Jose´ A. Sahel, Re´mi Salomon, Iain A. Drummond, Marie-Claire Gubler, Corinne Antignac, Salahdine Chibout, Joseph D. Szustakowski, Friedhelm Hildebrandt, Esben Lorentzen, Andreas W. Sailer, Alexandre Benmerah, Pierre Saint-Mezard and Sophie Saunier

Nature Communications, 6: 1-14 (2015) IF: 11.47

Ciliopathies are a large group of clinically and genetically heterogeneous disorders caused by defects in primary cilia. Here we identified mutations in TRAF3IP1 (TNF Receptor-Associated Factor Interacting Protein 1) in eight patients from five families with nephronophthisis (NPH) and retinal degeneration, two of the most common manifestations of ciliopathies. TRAF3IP1 encodes IFT54, a subunit of the IFT-B complex required for ciliogenesis. The identified mutations result in mild ciliary defects in patients but also reveal an unexpected role of IFT54 as a negative regulator of microtubule stability via MAP4 (microtubule-associated protein 4). Microtubule defects are associated with altered epithelialization/polarity in renal cells and with pronephric cysts and microphthalmia in zebrafish embryos. Our findings highlight the regulation of cytoplasmic microtubule dynamics as a role of the IFT54 protein beyond the cilium, contributing to the development of NPH-related ciliopathies.
Keywords: Ciliopathies; TNF Receptor-associated factor interacting protein 1 (TRAF3IP1); Nephronophthisis (NPH); Ciliary functions.

994. Effects of Deferasirox-Deferoxamine on Myocardial and Liver Iron in Patients with Severe Transfusional Iron Overload

Yesim Aydinok, Antonis Kattamis, M. Domenica Cappellini, Amal El-Beshlawy, Raffaella Origa, Mohsen Elalfy, Yurdanur Kilinc, Silverio Perrotta, Zeynep Karakas, Vip Viprakasit, Dany Habr, Niculae Constantinovici, Junwu Shen and John B. Porter

Blood, 125: 3868-3877 (2015) IF: 10.452

Deferasirox (DFX) monotherapy is effective for reducing myocardial and liver iron concentrations (LIC), although some patients may require intensive chelation for a limited duration. HYPERION, an open-label single-arm prospective phase 2 study, evaluated combination DFX-deferoxamine (DFO) in patients with severe transfusional myocardial siderosis (myocardial [m] T2* 5-<10 ms; left ventricular ejection fraction [LVEF] =56%) followed by optional switch to DFX monotherapy when achieving mT2* >10 ms. Mean dose was 30.5 mg/kg per day DFX and 36.3 mg/kg per day DFO on a 5-day regimen. Geometric mean mT2* ratios (Gmeanmonth12/24/Gmeanbaseline) were 1.09 and 1.30, respectively, increasing from 7.2 ms at baseline (n = 60) to 7.7 ms at 12 (n = 52) and 9.5 ms at 24 months (n = 36). Patients (17 of 60; 28.3%) achieved mT2* =10 ms and =10% increase from baseline at month 24; 15 switched to monotherapy during the study based on favorable mT2*. LIC decreased substantially from a baseline of 33.4 to 12.8 mg Fe/g dry weight at month 24 (-52%). LVEF remained stable with no new arrhythmias/cardiac failure. Five patients discontinued with mT2* <5 ms and 1 died (suspected central nervous system infection). Safety was consistent with established monotherapies.
Results show clinically meaningful improvements in mT2* in about one-third of patients remaining on treatment at month 24, alongside rapid decreases in LIC in this heavily iron-overloaded, difficult-to-treat population. Combination therapy may be useful when rapid LIC reduction is required, regardless of myocardial iron overload.

995. Cinacalcet in Pediatric and Adolescent Chronic Kidney Disease A Single-center Experience

Abdulla A. Alharthi, Naglaa M. Kamal, Mohamed W. Abukhatwah and Laila M. Sherief

Medicine, 94(2): 1-7 (2015) IF: 5.723

Cinacalcet, a calcimimetic drug, has been shown to be efficacious in adult chronic kidney disease (CKD) patients; however, it was not fully studied in pediatric CKD patients. We aimed at assessing the effect of cinacalcet on intact parathyroid hormone (iPTH) secretion in children with CKD-4/5 with iPTH consistently = 300 pg/mL refractory to conventional treatment. This is a prospective cohort analysis of 28 children with uncontrolled hyper-parathyroidism secondary to stage 4 and 5 CKD admitted to a tertiary center during the period from April 2012 to April 2014. Twenty-eight patients with CKD-4/5 were assessed prospectively regarding bone biochemistry, renal ultrasonography, serum iPTH level, and medications. Patients were classified into 3 groups:
group 1, 6 patients with CKD-4 on supplemental and supportive therapy; group 2, 6 patients with CKD-5 on hemodialysis and; group 3, 16 patients with CKD-5 on automated peritoneal dialysis. Patients were between the ages of 9 months and 18 years on commencing cinacalcet at doses of 0.5 to 1.5 mg/kg. All patients showed at least a 60% reduction in iPTH (60%-97%).
Highly significant reduction in iPTH and serum alkaline phosphatase levels was detected post-cinacalcet. The serum calcium (Ca), phosphate (P), and Ca × P product were unaffected. Treatment was well tolerated with no hypophosphatemia, hypocalcemia, or other adverse effects almost in all patients. Cinacalcet use was proven safe for all pediatric and adolescent patients with CKD-4/5 during the study period, and at the same time most of the patients reached the suggested iPTH target values.
Keywords: Cinacalcet; Pediatric; Adolescent; Chronic kidney disease.

996. Renal Presentation in Pediatric Acute Leukemia
Report of 2 Cases

Laila M. Sherief, Seham F. Azab, Marwa M. Zakaria, M. Kamal, Maha Abd Elbasset Aly, Adel Ali and Mohamed Abd Alhady

Medicine, 94(37): 1-4 (2015) IF: 5.723

Renal enlargement at time of diagnosis of acute leukemia is very unusual. We here in report 2 pediatric cases of acute leukemia who had their renal affection as the first presenting symptom with no evidences of blast cells in blood smear and none of classical presentation of acute leukemia. The first case is a 4-year-old girl who presented with pallor and abdominal enlargement. Magnetic resonance imaging showed bilateral symmetrical homogenous enlarged kidneys suggestive of infiltration. Complete blood picture (CBC) revealed white blood count 11×10^9/L, hemoglobin 8.7 g/dL and platelet count 197×10^9/L. Bone marrow aspiration was performed, and diagnosed precursor B-cell ALL was made. The child had an excellent response to modified CCG 1991 standard risk protocol of chemotherapy with sustained remission, but unfortunately relapsed 11 month after the end of therapy. The second child was 13-month old, presented with pallor, vomiting, abdominal enlargement, and oliguria 2 days before admission. Initial CBC showed bicytopenia, elevated blood urea, creatinine, and serum uric acid, while abdominal ultrasonography revealed bilateral renal enlargement. Bone marrow examination was done and showed 92% blast of biphenotypic nature. So, biphynotypic leukemia with bilateral renal enlargement and acute renal failure was subsequently diagnosed. The patients admitted to ICU and received supportive care and prednisolone. Renal function normalized and chemotherapy was started. The child achieved complete remission with marked reduction of kidney size but, unfortunately she died from sepsis in consolidation phase of therapy. This case demonstrates an unusual early renal enlargement in childhood acute leukemia. Renal involvement of acute leukemia should be considered in child presenting with unexplained bilateral renal enlargement with or without renal function abnormalities and bone marrow examination should be included in the workup.

Keywords: Renal presentation; Pediatric; Acute leukemia; Egypt.

997. Cadmium Status Among Pediatric Cancer Patients in Egypt

Laila M. Sherief, Elhamy R. Abdelkhalek, Amal F. Gharieb, Hanan S. Sherbiny, Doaa M. Usef, Mohamed A.A. Almalky, Naglaa M. Kamal, Mostafa A. Salama and Wafaa Gohar

Medicine, 94(20): 1-6 (2015) IF: 5.723

Cadmium (Cd) is a toxic, nonessential, and bio-accumulating heavy metal widely used in industry. Several studies have suggested a positive association between Cd exposure and risks of several cancers. However, data from general population, especially children are sparse.In the current cross-sectional case-control study, we aimed to assess the association between Cd exposure, as expressed by Cd body status (blood, urine, scalp hair, and nails) and cancer among Egyptian children. Three hundred and fifty pediatric cancer cases aged 3 to 14-years old were enrolled in our study. Their body Cd levels were evaluated using Atomic Absorption Spectrophometer and were compared with Cd levels of 350 healthy children.Significantly higher Cd levels (blood, urine, scalp hair, and nails) were documented in cancer cases when compared with control ($P<0.001$). Such difference was still detected when comparing each malignant type separately, with controls. Tobacco smoke exposure, rural residence, and low socioeconomic status were reported more frequently among cases than comparisons.Positive association between Cd exposure and pediatric malignancy may be present.

Keywords: Cadmium; Pediatric; Cancer; Egypt.

998. Hodgkin Lymphoma in Childhood: Clinicopathological Features and Therapy Outcome at 2 Centers from A Developing Country

Laila M. Sherief, Usama R. Elsafy, Elhamy R. Abdelkhalek, Naglaa M. Kamal, Rabab Elbehedy, Tamer H. Hassan, Hanan S. Sherbiny, Mohamed R. Beshir and Safaa H. Saleh

Medicine, 94(15): 1-7 (2015) IF: 5.723

Hodgkin lymphoma (HL) accounts for 5% to 6% of all childhood cancer. It displays characteristic epidemiological, clinical, and pathological features according to various geographic areas. We aimed to assess the epidemiological aspects, clinicopathological features, and treatment outcome of pediatric HL treated at 2 Egyptian centers: Zagazig University Pediatric Oncology Unit and Benha Special Hospital Pediatric Oncology Unit. We carried a cross-sectional retrospective study by reviewing medical records for all patients admitted with the diagnosis of HL over 8 years in 2 oncology units during the period from January 2004 to January 2012. Age of the patients at presentation ranged from 3 to 14 years (median 6 years) and male: female ratio 1.7:1. Lymphadenopathy was the most common presentation (96.6%). Mixed cellularity subtype was dominant (50.8%), followed by nodular sclerosis (28.9%), lymphocyte-rich (18.6%) with lymphocyte depletion being the least dominant (1.7%). More than half of patients (55.9 %) had advanced disease (Ann Arbor stage III/IV disease). The duration of follow-up ranged from 5 to 87 months (mean 39.8±24.1 months). The 5-year overall survival and event-free survival for patients were 96.6% and 84.7% respectively. In Egypt, HL occurs in young age group, with a higher incidence of mixed cellularity subtype and advanced disease. None of the clinical, epidemiological, or pathological characteristics had a significant association with the overall survival. The outcomes of HL in our 2 centers were satisfactory approaching the international percentage.

Keywords: Hodgkin lymphoma; Childhood; Clinicopathological features; Therapy outcome; Developing country.

999. Psychological Impact of Chemotherapy for Childhood Acute Lymphoblastic Leukemia on Patients and their Parents

Laila M. Sherief, Naglaa M. Kamal, Hadel M. Abdalrahman, Doaa M. Youssef, Mohamed A Abd Alhady, Adel SA Ali, Maha Aly Abd Elbasset and Hiatham M. Hashim

Medicine, 94(51): 1-6 (2015) IF: 5.723

To assess the self-esteem of pediatric patients on chemotherapy for acute lymphoblastic leukemia (ALL) and psychological status of their parents.The psychological status of 178 children receiving chemotherapy for ALL and their parents was assessed using parenting stress index (PSI) to determine the degree of stress the parents are exposed to using parent's and child's domains. Self-

esteem Scale was used to determine the psychological status of patients.The study revealed significant low level of self-esteem in 84.83% of patients. Their parents had significant psychological stress. PSI was significantly associated with parents' low sense of competence, negative attachment to their children, feeling of high restriction, high depression, poor relation to spouse, high social isolation variables of parent's domains. It was significantly associated with low distraction, negative parents' reinforcement, low acceptability, and high demanding variables of child's domains. Long duration of disease was the most detrimental factor among demographic data of the patients.Chemotherapy for ALL has a significant impact on the psychological status of both patients and their parents with high prevalence of low self-esteem in children and high degree of stress in their parents.

Keywords: Psychological impact of chemotherapy; Childhood; Acute lymphoblastic leukemia; Patients; Parents; Egypt.

1000. Pediatric Online Evidence-Based Medicine Assignment is A Novel Effective Enjoyable Undergraduate Medical Teaching Tool

A Squire Compliant Study

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Medicine, 94: 1-7 (2015) IF: 5.723

Evidence-based medicine (EBM) is delivered through a didactic, blended learning, and mixed models. Students are supposed to construct an answerable question in PICO (patient, intervention, comparison, and outcome) framework, acquire evidence through search of literature, appraise evidence, apply it to the clinical case scenario, and assess the evidence in relation to clinical context. Yet these teaching models have limitations especially those related to group work, for example, handling uncooperative students, students who fail to contribute, students who domineer, students who have personal conflict, their impact upon progress of their groups, and inconsistent individual acquisition of required skills. At Pediatrics Department, Faculty of Medicine, Cairo University, we designed a novel undergraduate pediatric EBM assignment online system to overcome shortcomings of previous didactic method and aimed to assess its effectiveness by prospective follow-up during academic years 2012 to 2013 and 2013 to 2014. The novel web-based online interactive system was tailored to provide sequential single and group assignments for each student. Single assignment addressed a specific case scenario question, while group assignment was teamwork that addressed different questions of same case scenario. Assignment comprised scholar content and skills. We objectively analyzed students' performance by criterion-based assessment and subjectively by anonymous student questionnaire. A total of 2879 were enrolled in 5th year Pediatrics Course consecutively, of them 2779 (96.5%) logged in and 2554 (88.7%) submitted their work. They were randomly assigned to 292 groups. A total of 2277 (89.15%) achieved >=80% of total mark (4/5), of them 717 (28.1%) achieved a full mark. A total of 2178 (85.27%) and 2359 (92.36%) made evidence-based Conclusions and recommendations in single and group assignment, respectively ($P < 0.001$). A total of 1102 (43.1%) answered student questionnaire, of them 898 (81.48%) found e-educational experience satisfactory, 175 (15.88%) disagreed, and 29 (2.6%) could not decide. A total of 964 (87.47%) found single assignment educational, 913 (82.84%) found group assignment educational, and 794 (72.3%) enjoyed it. Web-based online interactive undergraduate EBM assignment was found effective in teaching medical students and assured individual student acquisition of concepts and skills of pediatric EMB. It was effective in mass education, data collection, and storage essential for system and student assessment.

Keywords: Pediatric online evidence-based medicine assignment; Medical education; Self education.

1001. Folic Acid Intake and Neural Tube Defects: Two Egyptian Centers Experience

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Medicine, 94(37): (2015) IF: 5.723

Neural tube defects (NTDs) are a group of congenital malformations with worldwide distribution and complex etiopathogenesis. Folic acid plays a pivotal role in their prevention. We aimed to identify the protective effect of folic acid intake against NTDs and its dependence on different socioeconomic and environmental factors in a cohort of mothers in Egypt. A cross-sectional study was carried over a period of 12 months on mothers who gave birth to babies with NTDs (group 1) and a control group with healthy offsprings (group 2). Both groups completed 2 questionnaires: food frequency questionnaire targeting the daily folate intake, and socioeconomic status and medical history questionnaire. Both groups of mothers received folate <800 μg/day, recommended for pregnant women. A strong association was detected between NTDs and urban residency with medium educated mothers, with negative consanguinity, who had folate intake < 400 μg daily, and who had their food long cooked. Each of these factors separately had a limited impact to cause NTDs, but when present together they did augment each other. Interestingly enough is the role of fava bean, cauliflower, spinach, and mango in predisposing of NTDs in the presence of the above-mentioned factors. The protective effect of folic acid intake against NTDs may depend on the synergism of different socioeconomic and environmental factors (which differ from country to another). In Egypt, females especially the medium-educated who live in urban areas should be well-informed with the value of folate intake in the periconceptional period.

Keywords: NTDs; Neural tube defects, RDA; Recommended daily allowance, USDA; U.S. department of agriculture; FDA; Food and drug administration.

1002. Mutations of the SLIT2–ROBO2 pathway genes SLIT2 and SRGAP1 Confer Risk for Congenital Anomalies of the Kidney and Urinary Tract

Daw-Yang Hwang, Stefan Kohl, Xueping Fan, Asaf Vivante, Stefanie Chan, Gabriel C. Dworschak, Julian Schulz, Albertien M. van Eerde, Alina C. Hilger, Heon Yung Gee, Tracie Pennimpede, Bernhard G. Herrmann, Glenn van de Hoek, Kirsten Y. Renkema, Christoph Schell, Tobias B. Huber, Heiko M. Reutter, Neveen A. Soliman, Natasa Stajic, Radovan Bogdanovic, Elijah O. Kehinde, Richard P. Lifton, Velibor Tasic, Weining Lu and Friedhelm Hildebrandt

Human Genetics, 134: 905-916 (2015) IF: 4.824

Congenital anomalies of the kidney and urinary tract (CAKUT) account for 40-50% of chronic kidney disease that manifests in the first two decades of life. Thus far, 31 monogenic causes of isolated CAKUT have been described, explaining ~12% of cases. To identify additional CAKUT-causing genes, we performed whole-exome sequencing followed by a genetic burden analysis in 26 genetically unsolved families with CAKUT. We identified two heterozygous mutations in SRGAP1 in 2 unrelated families. SRGAP1 is a small GTPase-activating protein in the SLIT2-ROBO2 signaling pathway, which is essential for development of the metanephric kidney. We then examined the pathway-derived candidate gene SLIT2 for mutations in cohort of 749 individuals with CAKUT and we identified 3 unrelated individuals with heterozygous mutations. The clinical phenotypes of individuals with mutations in SLIT2 or SRGAP1 were cystic dysplastic kidneys, unilateral renal agenesis, and duplicated collecting system. We show that SRGAP1 is expressed in early mouse nephrogenic mesenchyme and that it is coexpressed with ROBO2 in SIX2-positive nephron progenitor cells of the cap mesenchyme in developing rat kidney. We demonstrate that the newly identified mutations in SRGAP1 lead to an augmented inhibition of RAC1 in cultured human embryonic kidney cells and that the SLIT2 mutations compromise the ability of the SLIT2 ligand to inhibit cell migration. Thus, we report on two novel candidate genes for causing monogenic isolated CAKUT in humans.

Keywords: Congenital anomalies of the kidney and urinary tract cakut; Genetic mutations; Cakut-causing genes.

1003. Sustained Improvements in Myocardial T2* Over 2 Years in Severely Iron-overloaded Patients with Beta Thalassemia Major Treated with Deferasirox or Deferoxamine

Dudley J. Pennell, John B. Porter, Antonio Piga, Yong-Rong Lai, Amal El-Beshlawy, Mohsen Elalfy, Akif Yesilipek, Yurdanur Kilinc, Dany Habr, Khaled M. Musallam, Junwu Shen and Yesim Aydinok

American Journal of Hematology, 90: 91-96 (2015) IF: 3.798

Long-term controlled studies are needed to inform on the clinical benefit of chelation therapy for myocardial iron removal in transfusion-dependent beta thalassemia patients. In a 1-year nonrandomized extension to the CORDELIA study, data collected from patients with myocardial siderosis provided additional information on deferasirox or deferoxamine (DFO) efficacy and safety. Myocardial (m)T2* increased from baseline 11.6 to 15.9 ms in patients receiving deferasirox for 24 months (n 5 74; geometric mean [Gmean] ratio of month 24/baseline 1.38 [95% confidence interval 1.28, 1.49]) and from 10.8 to 14.2 ms in those receiving DFO (n 5 29; Gmean ratio 1.33 [1.13, 1.55]; P 5 0.93 between groups). Improved mT2* with deferasirox was evident across all subgroups evaluated irrespective of baseline myocardial (mT2* < 10 vs. 10 ms) or liver (LIC <15 vs. 15 mg Fe/g dw) iron burden. Mean LVEF was stable and remained within normal limits with deferasirox or DFO. Liver iron concentration decreased from high baseline values of 30.6 6 18.0 to 14.4 6 16.6 mg Fe/g dw at month 24 in deferasirox patients and from 36.8 6 15.6 to 11.0 6 12.1 mg Fe/g dw in DFO patients. The long-term safety profile of deferasirox or DFO was consistent with previous reports; serious drug-related AEs were reported in 6.8% of deferasirox and 6.9% of DFO patients. Continued treatment of severely iron-overloaded beta thalassemia patients with deferasirox or DFO led to sustained improvements in myocardial iron irrespective of high or low baseline myocardial or liver iron burden, in parallel with substantial improvements in liver iron.

Keywords: Deferasirox or deferoxamine; Myocardial T2*; Iron overload.

1004. Targeting E2F1 and c-Myc Expression by microRNA-17-5p Represses Interferon-stimulated Gene MxA in Peripheral Blood Mononuclear Cells of Pediatric Systemic Lupus Erythematosus Patients

Rola Ahmed Sarhan, Heba Ragaee Abdelhakam Aboelenein, Shady Karim Nasry Sourour, Injie Omar Fawzy, Samia Salah and Ahmed Ihab Abdelaziz

Discovery Medicine, 19, (2015) IF: 3.626

Objectives: Elevated type I interferon (IFN) is believed to be one of the crucial factors involved in the pathogenesis of systemic lupus erythematosus (SLE). Its expression was recently found to be governed by the transcription factor E2F1 which is involved in an autoregulatory triad along with c-Myc and the microRNA polycistron miR-17- 92. However, this intricate triad has seldom been investigated in SLE patients. Therefore, the current study was undertaken to investigate the expression pattern of the E2F1/c-Myc/miR-17-5p triad in peripheral blood of SLE patients as well as to examine the impact of manipulating this triad using miR- 17-5p mimics and inhibitors on IFN signature in SLE patients.

Methods: Expression of the E2F1/cMyc/miR-17-5p triad and the IFN-stimulated gene MxA was analyzed using real time qPCR. Peripheral blood mononuclear cells from SLE patients and controls were transfected with miR-17- 5p mimics and antagomirs using the HiPerfect transfection reagent.

Results: E2F1 transcripts and miR-17-5p were significantly downregulated while c-Myc and MxA transcripts were significantly upregulated in SLE. Also, transfection of SLE PBMCs with miR-17-5p mimics led to a substantial repression of E2F1 and c-Myc expression. The overall change in this triad upon miR-17-5p mimicking resulted in lowering the transcript levels of the IFNinducible gene MxA in SLE.

Conclusion: This may advocate the manipulation/use of the E2F1/cMyc/miR-17-5p trinity to effectively control the aberrantly high levels of type I IFN activity in lupus patients

Keywords: microRNA-17-5P; Lupus patients.

1005. Left Ventricular Systolic Dysfunction in Asymptomatic Marfan Syndrome Patients is Related to the Severity of Gene Mutation: Insights from the Novel three Dimensional Speckle Tracking Echocardiography

Mohamed youssef mohamed abd El-Rahman

Plos One, 10 (4): 1-14 (2015) IF: 3.234

Background: In asymptomatic Marfan syndrome (MFS) patients we evaluated the relationship between the types of fibrillin-1 (FBN1) gene mutation and possible altered left ventricular (LV) function as assessed by three-dimensional speckle tracking echocardiography (3D-STE).

Methods and Results: Forty-five MFS patients (mean age 24 ± 15 years) and 40 age-matched healthy controls were studied. Genetic evaluation for the FBN1 gene was carried on 32 MFS patients. Gene mutation (n = 15, 47%) was classified as mild when the mutation resulted in nearly normally functioning protein, while mutations resulting in abnormally function protein were considered to be severe (n = 17, 53%). All patients and controls underwent 3D-STE for evaluation of LV function by an echocardiographer blinded to the Results of the genetic testing. Compared to controls, MFS patients had significantly lower 3D-STE derived LV ejection fraction (EF, 57.43 ± 7.51 vs. 62.69 ± 4.76%, p = 0.0001), global LV longitudinal strain (LS, 14.85 ± 2.89 vs. 17.90 ± 2.01%, p = 0.0001), global LV circumferential strain (CS, 13.93 ± 2.81 vs. 16.82 ± 2.17%, p = 0.0001) and global LV area strain (AS, 25.76 ± 4.43 vs. 30.51 ± 2.61%, p = 0.0001). Apart from the global LV LS all these parameters were significantly lower in patients with severe gene mutation than in those with mild mutation ($p < 0.05$). In the multivariate linear regression analysis only the type of mutation had a significant influence on the 3D-STE derived LVEF (p = 0.017), global CS (p = 0.005) and global AS (p = 0.03).

Conclusions: In asymptomatic MFS patients latent LV dysfunction can be detected using 3D STE. The LV dysfunction is mainly related to the severity of gene mutation, suggesting possible primary cardiomyopathy in MFS patients.

Keywords: Marfan syndrome; Three dimensional speckle tracking echocardiography; Gene mutation.

1006. Really Good Stuff, Introduction

M Brownell Anderson, Lara Varpio, Gabrielle Finn and Ilham Youssry

Medical Education, 49: 511-512 (2015) IF: 3.196

In 2013, Medical Education began sponsoring an opportunity for individuals involved in the field to participate in a yearlong editorial internship programme.1 As in the first year of the programme, interns work with the editor and deputy editors of the journal to learn about the review and publication process for scholarly articles. I have had the good fortune this year to work with three talented individuals during the course of reviewing and compiling the current issue of 'Really Good Stuff' (RGS). I have asked each of them to provide their insights and reflections about the process in the paragraphs that follow. I have edited their comments slightly so that their separate remarks read well together, but did not have to change much. Although I gave them a tiny bit of guidance outlining what I hoped they would cover in their comments, I was happily surprised by the different approaches to presenting their experience with RGS taken by each of the women, and the fact that each highlights the importance of providing clarity while being brief. The insights they gained from the process of editing the RGS reports provide valuable suggestions for authors and reviewers of this unique section, which complement the advice given by last year's interns.2 I enjoyed greatly the opportunity to work with the interns and hope they found the experience useful and maybe even fun. I would be remiss if I did not acknowledge and thank Lara, Gabrielle and Ilham for supporting one another and truly working as a team to accomplish their task, and for responding on time to every deadline I imposed! I know I learned a great deal from them and I believe you will too.

1007. Selenium and Vitamin E as Antioxidants in Chronic Hemolytic Anemia: Are they Deficient? A Case-control Study in A Group of Egyptian Children

Mona M. Hamdy, Dalia S. Mosallam, Alaa M. Jamal and Walaa A. Rabie

Journal of Advanced Research, 6: 1071-1077 (2015) IF: 3

Accelerated oxidative damage is one of the hallmarks in both sickle cell disease (SCD) and thalassemia major (TM). A decreased antioxidant level is found in both diseases. Our study was carried out to evaluate the variation in serum levels of Selenium and Vitamin E among a group of transfusion dependant Egyptian SCD and TM patients, further more to correlate these levels with iron overload status or transfusion requirements. A case-control study was conducted at the Cairo University Pediatric Hospital to assess the serum levels of Selenium using Atomic Absorption Spectrometer and Vitamin E using commercially available ELISA Kit in transfusion dependent children, 30 with beta thalassemia and 30 with SCD in a steady state aged from 6 to 18 years, these findings were compared to 30 age/sex matched healthy controls. Our Results revealed a depleted antioxidants level in the studied group of Egyptian children with TM and SCD relative to healthy controls ($P < 0.05$). A significant positive correlation was found between Vitamin E levels and ferritin (r = 0.26, p = 0.047) in SCD and TM patients. Nonsignificant correlation was detected between serum Selenium and Vitamin E. Moreover, values of these antioxidants did not correlate with indices of hemolysis nor with those of inflammation in chronically transfused TM and SCD patients.

Keywords: Antioxidants; Vitamin E; Selenium; Sickle cell anemia; β-Thalassemia; Egyptian children.

1008. Novel Marker for the Detection of Sickle Cell Nephropathy: Soluble FMS-like Tyrosine Kinase-1 (sFLT-1)

Ilham Youssry, Samuel Makar, Rania Fawzy, Manal Wilson, Ghada AbdAllah, Eman Fathy and Happy Sawires

Pediatric Nephrology, 30: 2163-2168 (2015) IF: 2.856

Background Given the burden and poor outcome of end-stage renal disease in sickle cell disease (SCD), early markers of sickle cell nephropathy (SN) are desirable. Disordered angiogenesis underlies many complications of SCD. We aimed to determine the relationship between serum FMS-like tyrosine kinase-1 (sFLT-1) and other biomarkers of renal damage for the early diagnosis of SN.

Methods Forty-seven SCD patients and 49 healthy controls were enrolled. Microalbuminuria was determined in patient urine samples. Blood samples were tested for sFLT-1, serum creatinine, and various hemolysis and inflammation markers.Peripheral blood monocyte expression of sFLT-1 was measured using real-time polymerase chain reaction (PCR).

Results The serum level of sFLT-1 (pg/ml) in SCD patients was higher than controls (median/range/IQR=142/ 60–1300/ 61 pg/ml vs. 125/ 110–187/52 pg/ml, respectively) (p=0.006). Median (range) of sFLT-1 level was higher in SCD patients with microalbuminuria compared to SCD patients with normoalbuminuria, 185 (140–1300) vs. 125 (60–189) mg/g, respectively) (p=0.004). There was a significant positive correlation between serum sFLT-1 and microalbuminuria, lactate

dehydrogenase (LDH), and indirect bilirubin (r=0.59, 0.39,0.30, and p=<0.001, 0.007, 0.041, respectively). sFLT-1 sensitivity in early detection of renal affection in SCD was 93.6 %, while specificity was 68.6 %. Finally, peripheral blood monocytes (PBM) sFLT-1 expression was significantly higher in SCD patients compared to controls (p=0.05).
Conclusions sFLT-1 may contribute to pathogenesis of albuminuria in SCD patients and constitute a novel renal biomarker of SN.
Keywords: Sickle cell disease; Microalbuminuria; Soluble fms-like tyrosine kinase; Sickle cell nephropathy.

1009. Extrahepatic Portal Vein Obstruction in Egyptian Children

Hanaa M. El-Karaksy, Nehal El-Koofy, Nabil Mohsen, Heba Helmy, Nevian Nabil and Mortada El-Shabrawi

Journal of Pediatric Gastroenterology and Nutrition, 60: 105-109 (2015) IF: 2.625

Background and Aim: Extrahepatic portal vein obstruction (EHPVO) is an important cause of portal hypertension in children. The aim of this study was to describe the clinical presentation, possible risk factors, upper gastrointestinal endoscopic findings, and treatment modalities of children with EHPVO.
Methods: After ethical approval of our study protocol by our institution review board, we analyzed available data from medical records of patients with EHPVO presenting to the Pediatric Hepatology Unit, Cairo University Pediatric Hospital, Egypt, for a period of 15 years from January 1996 to December 2010.
Results: The study included 169 patients. Their ages at presentation ranged from 1 month to 12 years (median 2.5 years, interquartile range 5); 101 were boys. Hematemesis was a presenting symptom in 58%, splenomegaly was present in 87%, esophageal varices were present in 94%, and fundal varices were present in 23%. Possible risk factors, in the form of umbilical catheterization, umbilical sepsis, and exchange transfusion, were elicited in 18%. Propranolol was associated with reduction in bleeding episodes (P<0.001), but was associated with increased chest symptoms (P<0.01). Both injection sclerotherapy and band ligation were effective in the management of bleeding varices and for primary and secondary prophylaxis; however, injection sclerotherapy was associated with the development of secondary gastric varices (P¼0.03).
Conclusions: This large study of children with EHPVO demonstrates the efficacy of propranolol in the reduction of gastrointestinal bleeding in children with EHPVO. Both injection sclerotherapy and band ligation were effective in the management of esophageal varices, although the former was associated with the development of secondary gastric varices. Randomized clinical trials to choose the best modalities for the management of portal hypertension in children are still lacking.
Keywords: Children; Egypt; Esophageal varices; Extrahepatic portal vein obstruction; Hematemesis; Portal hypertension.

1010. Does Positioning Affect Tracheal Aspiration of Gastric Content in Ventilated Infants?

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Journal of Pediatric Gastroenterology and Nutrition, 60 (3): 327-331 (2015) IF: 2.625

Objectives: Gastroesophageal reflux and aspiration can occur in premature infants who are supported with mechanical ventilation. The relation between physical positioning and gastric aspiration in ventilated infants has not been studied. Pepsin measured in tracheal aspirate (TA) emerged as a specific marker for aspiration. The objective of our study was to assess pepsin in TA of ventilated infants at 2 different positions: supine and right lateral.
Methods: We conducted a randomized controlled trial on premature infants who were enterally fed and supported with mechanical ventilation. Patients were randomized into intervention and control groups. In the intervention group, infants were placed supine for 6 hours before a sample of TA was obtained.Asecond sample was collected 6 hours later while lying in the right lateral position. In the control group, the 2 samples of TA were obtained while infants remained in the supine position during the entire study time. Pepsin in TA was measured while blinded to the group assignment.
Results: A total of 34 patients were enrolled and randomized to intervention (n¼17) and control (n¼17) groups. Gestational age was 32.72.7 weeks, and birth weight was 1617526 g; both groups had similar demographic and clinical characteristics. Pepsin concentration did not differ between groups at baseline. In the intervention group, pepsin concentration significantly declined from 13 ng/mL (interquartile range [IQR] 11.9– 38.7) to 10 ng/mL (IQR 7–12; P<0.001), whereas it did not change in the control group (P¼0.42).
Conclusions: The right lateral positioning is associated with decreased TA pepsin. The implications of the present study on hospital practice and clinical outcomes need further investigations.
Keywords: Gastroesophageal reflux; Gerd; Pepsin; Premature.

1011. Occult Hepatitis B Virus Infection in Children Born to HBsAg-Positive Mothers after Neonatal Passive-active Immunoprophylaxis

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Infection, 43: 307-314 (2015) IF: 2.618

Background Occult hepatitis B virus infection (OBI) is a well-recognized clinical entity characterized by the detection of HBV DNA in serum and/or liver in the absence of detectable HBsAg. Diagnosis of OBI requires a sensitive HBV DNA assay. Aim We aimed at determining the frequency of OBI in infants, born to HBsAg-positive mothers, who received immunoprophylaxis at birth.
Methods Sixty-four infants and children, born to HBsAgpositive mothers, who received hepatitis B immunoglobulin and HBV vaccine within 48 h after birth, were tested for HBV serological profile and HBV DNA by real-time PCR at least 1 month after last dose of HBV vaccine and not before 6 months of age.
Results The median age of the studied infants and children was 8 months, ranging from 6 to 132 months; 54.7 % were females. HBV DNA was detected in 2 infants. One case had OBI; she was negative for HBsAg, anti-HBc total,HBeAg and was positive for anti-HBs (titer 267 mIU/mL) with low level of viremia (HBV DNA 1.13 x 103 IU/mL). Another infant showed immunoprophylaxis failure with positive HBsAg, anti-HBc total, HBeAg, negative anti-HBe and anti-HBs; HBV viral load was 1.7 × 108 IU/mL. Both mothers were HBsAg and HBeAg-positive.

Conclusion OBI may occur in infants born to HBsAgpositive mothers despite the receipt of immunoprophylaxis. OBI was detected in a low frequency in the present study. Anti-HBs positivity does not exclude OBI.
Keywords: Egypt; HBsAg-positive mothers; HBV Immunoprophylaxis; Occult HBV infection.

1012. Use of Lung Ultrasound in Detection of Complications of Respiratory Distress Syndrome

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Ultrasound in Medicine and Biology, 41 (9): 2319-2325 (2015) IF: 2.214

Repeated chest radiography is required for the diagnosis and follow-up of neonates with respiratory distress syndrome (RDS) and carries the risk of radiation hazards. Lung ultrasound (LUS) is a non-invasive bedside diagnostic tool that has proven to be effective in the diagnosis of RDS. Our aim was to assess the role of LUS with respect to the standard chest X-ray (CXR) in the detection of complications of RDS in neonates. Ninety premature newborns of both genders with RDS (mean gestational age = 29.91 ± 1.33 wk) and 40 premature babies as a control group were involved in this study. All patients underwent initial clinical assessment as well as CXR and LUS. Those who presented with respiratory distress and/or exhibited deterioration of oxygenation parameters were followed by CXR and, within 4 h, by LUS. Alveolo-interstitial syndrome and pleural line abnormalities were detected in all cases (100%) in the initial assessment, patchy consolidation was detected in 34 cases and white lung was detected in 80 cases. Alveolo-interstitial syndrome was detected in 19 controls. In follow-up of the patients, LUS was superior to CXR in detection of consolidation and sub-pleural atelectasis, but not in detection of pneumothorax. We concluded that bedside LUS is a good non-hazardous alternative tool in the early detection and follow-up of RDS in the neonatal intensive care unit; it could be of value in reducing exposure to unnecessary radiation.
Keywords: Chest X-Ray; Lung ultrasonography; Premature newborns; Respiratory distress syndrome.

1013. Correcting the Expression of miRNA-155 Represses PP2Ac and Enhances the Release of IL-2 in PBMCs of Juvenile SLE Patients

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Lupus, 2014: 1-8 (2015) IF: 2.197

MicroRNA-155 is involved in immune cell, differentiation, maturation and function. MiR- 155 showed variable dysregulated expression in autoimmune diseases such as systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA) patients. MiR-155 was previously confirmed to directly target CAMP response element binding protein (CREB), which was previously identified as a positive regulator of protein phosphatase 2A (PP2A). PP2A is a key negative regulator of interleukin-2, which is an important immune modulator and was previously shown to be decreased in SLE. In this study we aimed at investigating the regulation of PP2A by miR-155 and hence its role in juvenile SLE disease pathogenesis. MiR-155 showed significant downregulation in PBMCs from juvenile SLE and juvenile familial Mediterranean fever (FMF) and significant upregulation in PBMCs from juvenile idiopathic arthritis (JIA) patients. In SLE, miR-155 expression was negatively correlated with Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) score and proteinuria and was positively correlated with white blood cell (WBC) count. The mRNA of the catalytic subunit of PP2A (PP2Ac) showed significant upregulation in PBMCs from SLE and FMF but not in JIA patients. Additionally, the relative expression of PP2Ac mRNA was positively correlated with SLEDAI score. Forced expression of miR-155 led to decreased relative expression of PP2Ac mRNA and increased IL-2 release in culturedstimulated PBMCs. This study suggests for the first time the possible role of an miR- 155-PP2Ac loop in regulating IL-2 release and identifies miR-155 as a potential therapeutic target in juvenile SLE disease through relieving IL-2 from the inhibitory role of PP2A.
Keywords: MIR-155; PP2Ac; Il-2; Juvenile SLE; PBMCS.

1014. De Novo 17Q24.2–Q24.3 Microdeletion Presenting with Generalized Hypertrichosis Terminalis, Gingival Fibromatous Hyperplasia, and Distinctive Facial Features

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American Journal of Medical Genetics Part A, 167(10): 2418-2424 (2015) IF: 2.159

Generalized hypertrichosis is a feature of several genetic disorders,and the nosology of these entities is still provisional. Recent studies have implicated chromosome 17q24.2–q24.3 microdeletion and the reciprocal microduplication in a very rare form of congenital generalized hypertrichosis terminalis (CGHT) with or without gingival hyperplasia. Here, we report on a 5-year-old Egyptian girl born to consanguineous parents.
The girl presented with CGHT and gingival hyperplasia for whom we performed detailed clinical, pathological, and molecular studies.
The girl had coarse facies characterized by bilateral epicanthic folds, thick and abundant eyelashes, a broad nose, full cheeks, and lips that constituted the distinctive facial features for this syndrome. Biopsy of the gingiva showed epithelial marked acanthosis and hyperkeratosis with hyperplastic thick collagen bundles and dense fibrosis in the underlying tissues.
Array analysis indicated a 17q24.2–q24.3 chromosomal microdeletion. We validated this microdeletion by real-time quantitative PCR and confirmed a perfect co-segregation of the disease phenotype within the family.In summary, this study indicates that 17q24.2–q24.3 microdeletion caused CGHT with gingival hyperplasia and distinctive facies,which should be differentiated from the autosomal recessive type that lacks the distinctive facies.
Keywords: Hypertrichosis terminalis; Gingival hyperplasia; Coarse face; Distinctive facial features; 17Q24.2-Q24.3 microdeletion; Gingival biopsy.

1015. Pattern of Clinical Presentation of Congenital Anomalies of the Kidney and Urinary Tract Among Infants and Children

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Nephrology, 20: 413-418 (2015) IF: 2.083

Aim: Congenital anomalies of the kidneys and urinary tract (CAKUT) comprise various entities of structural malformations that result from defects in morphogenesis of the kidney and/or urinary tract. These anomalies are the most commonly diagnosed malformations in the prenatal period and constitute the leading cause of end-+stage renal disease (ESRD) in children, worldwide. This prospective study was performed to report the patterns of clinical presentation and diagnosis of infants and children with such malformations.
Methods: Patients with suggestive features of CAKUT, presenting to Cairo University Children Hospital over one year duration were investigated and categorized based on underlying renal structural/functional malformation and associated extra-renal anomalies.
Results: One hundred and seven CAKUT children were enrolled in the study. Familial clustering was identified in 14% of the cohort and syndromic CAKUT accounted for 31.8% of cases. Different anomaly entities have been identified; posterior urethral valves (PUV) being the commonest detected abnormality (36.4%). Of note, 9.3% of cohort patients had ESRD at presentation, of which 60% had PUV as their primary renal disease. Obstructive cases were noted to present significantly earlier and attain advanced CKD stages rather than non-obstructive ones.
Conclusion: CAKUT is a clinically heterogeneous group of diseases with diverse clinical phenotypes. More efforts should be aimed at improving antenatal detection as well as classification with comprehensive reference to the clinical, genetic and molecular features of the diseases. The high frequency of familial and syndromic CAKUT among studied patients is seemingly a convincing reason to pursue the underlying genetic defect in future studies.
Keywords: End stage renal disease; Posterior uretheral valves; Multicystic dysplastic kidney; Structural and functional malformations; Urinary tract infection; Vesico-ureteric reflux.

1016. Prevalence and Distribution of Iron Overload in Patients with Transfusion-Dependent Anemias Differs Across Geographic Regions: Results from the CORDELIA Study

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European Journal of Haematology, 95: 244-253 (2015) IF: 2.066

Objectives: The randomized comparison of deferasirox to deferoxamine for myocardial iron removal in patients with transfusion-dependent anemias (CORDELIA) gave the opportunity to assess relative prevalence and body distribution of iron overload in screened patients.
Methods: Patients aged =10 yr with transfusion-dependent anemias from 11 countries were screened. Data were summarized descriptively, overall and across regions.
Results: Among 925 patients (99.1% with b-thalassemia major; 98.5% receiving prior chelation; mean age 19.2 yr), 36.7% had myocardial iron overload (myocardial T2* =20 ms), 12.1% had low left ventricular ejection fraction. Liver iron concentration (LIC) (mean 25.8 mg Fe/ g dw) and serum ferritin (median 3702 ng/mL) were high. Fewer patients in the Middle East (ME; 28.5%) had myocardial T2* =20 ms vs. patients in the West (45.9%) and Far East (FE, 40.9%). Patients in the West had highest myocardial iron burden, but lowest LIC (26.9% with LIC <7 mg Fe/g dw) and serum ferritin. Among patients with normal myocardial iron, a higher proportion of patients from the ME and FE had LIC =15 than <7 mg Fe/g dw (ME, 56.7% vs. 17.2%; FE, 78.6% vs. 7.8%, respectively), a trend which was less evident in the West (44.6% vs. 33.9%, respectively). Transfusion and chelation practices differed between regions.
Conclusions: Evidence of substantial myocardial and liver iron burden across regions revealed a need for optimization of effective, convenient iron chelation regimens. Significant regional variation exists in myocardial and liver iron loading that are not well explained; improved understanding of factors contributing to differences in body iron distribution may be of clinical benefit.
Keywords: Thalassemia; Heart; Liver; Iron; Prevalence; Distribution.

1017. Skeletal and Cardiac Muscle Involvement in Children with Glycogen Storage Disease Type III

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Eur J Pediatr, 174: 1545-1548 (2015) IF: 1.89

Glycogen storage disease type III (GSD III) may present with hepatic disease or may involve both skeletal and cardiac muscles as well. To assess the prevalence of neuromuscular and cardiac involvement in a group of children with GSD III, 28 children with GSD III, diagnosed by enzymatic assay, were enrolled in the study after an informed consent was obtained from their parents/guardians and after the study protocol was approved by our institutional ethical committee. Their mean age was 6.6+3.1 years. All cases were assessed neurologically by clinical examination, electromyography (EMG), and nerve conduction velocity. The heart was examined clinically by electrocardiogram and echocardiography. Seventeen patients (61 %) had myopathic changes by EMG, three of them had associated neuropathic changes. Creatine phosphokinase (CPK) was elevated in all myopathic cases except one. Children with myopathic changes were significantly older (p=0.02), and CPK was significantly higher (p<0.0001). Nine cases had left ventricular (LV) hypertrophy, seven of them had myopathic changes by EMG.
Conclusion: Myopathic changes are not uncommon in children with GSD III. Myopathic changes tend to occur in older age and are associated with higher CPK level. Cardiac muscle involvement is less common in this age group and may, on occasion, occur alone without skeletal muscle involvement. Despite mild degrees of affection in this age group, it is recommended to perform prospective annual screening using EMG and echocardiography in order to augment dietary therapy regimen to prevent progression to life threatening complications.

Keywords: Cardiac muscle involvement; Cardiomyopathy; Children; Cpk; Egypt; Gsd III; Myopathy; Skeletal muscle involvement.

1018. Chroinc Granulomatus Disease:Review of A Cohort of Egyptian Patients

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Allergologia Et Immunopathologia, 43(3): 279-285 (2015) IF: 1.74

Background: Chronic granulomatous disease (CGD) is an inherited disease that Results from a defect in the phagocytic cells of the immune system. It is caused by defects in one of the major subunits of the nicotinamide adenine dinucleotide phosphate (NADPH) oxidase complex. The clinical presentations of CGD patients are heterogeneous.
Objectives: This is the first report from Egypt discussing clinical and laboratory data of twenty-nine patients (from 26 families) with CGD from a single tertiary referral centre.
Results: There were twenty male and nine female patients. The consanguinity rate was 76% (19/25). Their age of diagnosis ranged from 2 to 168 months with a mean of 52.8 months ± 49.6 SD. The most common manifestations were abscesses in 79.3% (deep organ abscesses in 37.9% of patients), followed by pneumonia in 75.8% and gastrointestinal symptoms in 27.5%. Rare but fatal complications were also reported among patients as one patient developed haemophagocytic lymphohistiocytosis (HLH) syndrome. Although X linked-CGD universally constitutes the most common pattern of inheritance; only 6 of our patients 6/25 (24%) belonged to this group with a Stimulation Index (SI) of 1-5, and confirmed by carrier pattern of their mothers. Mothers were not available for testing in four male children. Nineteen patients (76%) had autosomal recessive patterns; ten males and nine females patients based on having abnormal SI, positive history of consanguinity and their mothers showing normal SI.
Conclusion: Increasing the awareness of physicians about symptoms of CGD may lead to earlier diagnosis of the disease, thus enhancing proper management and better quality of life.
Keywords: CGD; Primary immunodeficiency.

1019. Effect of On-line Hemodiafiltration on P-wave Dispersion in Children

Happy Sawires, Samuel Makar and Hanan Zekry

Therapeutic Apheresis and Dialysis,19 (4): 399-404 (2015) IF: 1.705

P-wave dispersion (PWD) (difference between the maximum and minimum P-wave duration), has been proposed as a useful predictor of paroxysmal atrial fibrillation (AF). The consequences of hemodialysis (HD) on PWD and P-wave duration have not been unequivocally documented and understood, and may be complex. We aimed in this work to demonstrate the effects of online hemodiafiltration (OL-HDF) on the risk of developing AF through assessment of PWD. Thirty-three pediatric patients (14 males and 19 females with mean age of 11.66±2.93 years) on conventional HD for at least 6 months underwent echocardiography, 12-lead electrocardiogram and PWD calculation. Then they were switched to OL-HDF for another 6 months and same parameters were reassessed. Thirty sex- and aged-matched healthy children, served as controls. PWD significantly decreased upon switching to OL-HDF (P<0.001) and fractional shortening significantly improved (P<0.001). Mean PWD of controls (24±6ms) was significantly less than PWD before and after OL-HDF (P<0.001 and <0.001, respectively). Online HDF significantly decreased PWD and hence also the potential of AF development, which may invite a higher consideration of this renal replacement modality in a pediatric population.
Keywords: Atrial fibrillation; Diastolic dysfunction; End-stage renal disease; Online hemodiafiltration; P-wave dispersion.

1020. NT-ProBNP as Early Marker of Subclinical Late Cardiotoxicity after Doxorubicin Therapy and Mediastinal Irradiation in Childhood Cancer Survivors

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Disease Markers, 2015:513219: 1-10 (2015) IF: 1.562

Background: Childhood cancer survivors treated with anthracyclines and mediastinal irradiation are at risk for late onset cardiotoxicity.
Aims of the Study: To assess the role of N-terminal pro-brain natriuretic peptide (NT-proBNP) and tissue Doppler imaging (TDI) as early predictors of late onset cardiotoxicity in asymptomatic survivors of childhood cancer treated with doxorubicin with or without mediastinal irradiation.
Methods: A cross-sectional study on 58 asymptomatic survivors of childhood cancer who received doxorubicin in their treatment protocols and 32 asymptomatic Hodgkin's lymphoma survivors who received anthracycline and mediastinal irradiation. Levels of NT-proBNP, TDI, and conventional echocardiography were determined.
Results: Thirty percent of survivors had abnormal NT-proBNP levels. It was significantly related to age at diagnosis, duration of follow-up, and cumulative dose of doxorubicin. TDI detected myocardial affection in 20% more than conventional echocardiography. Furthermore, abnormalities in TDI and NT-pro-BNP levels were more common in Hodgkin lymphoma survivors receiving both chemotherapy and radiotherapy.
Conclusions: TDI could detect early cardiac dysfunction even in those with normal conventional echocardiography. Measurement of NT-proBNP represents an interesting strategy for detecting subclinical cardiotoxicity. We recommend prospective and multicenter studies to validate the role of NT-proBNP as an early marker for late onset doxorubicin-induced cardiotoxicity.
Keywords: NT-ProBNP; Early marker; Subclinical late cardiotoxicity; Doxorubicin; Mediastinal irradiation; Childhood; Cancer survivors.

1021. Vitamin D Status in Egyptian Patients with Juvenile-onset Systemic Lupus Erythematosus

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Rheumatology International, 35: 1535-1540 (2015) IF: 1.516

There are scanty data on the prevalence of vitamin D deficiency and its relation to disease activity among patients with juvenile-onset systemic lupus erythematosus (JoSLE) in the Middle East and North Africa, an area known to be endemic for vitamin D deficiency and insufficiency. The aim of this study was, therefore, to study vitamin D status and its relation to disease activity and parameters in Egyptian patients with JoSLE. Serum levels of 25(OH) D3 in 70 JoSLE patients were compared to 40 age-, sex-, and body mass index-matched healthy controls. The 25(OH) D3 was determined by enzyme-linked immunosorbent assay. Information regarding the medical history, clinical symptoms, and signs was registered at the time of serum sampling. Disease activity of SLE was evaluated according to the SLEDAI score. The mean level of serum 25(OH) D3 was 12 ± 3.7 in JoSLE patients compared to 21 ± 3.5 ng/mL in normal controls ($p < 0.001$). Forty percent (28/70) of the JoSLE patients has severe 25(OH) D3 deficiency (=10 ng/mL), and 60 % of the JoSLE patients has 25(OH) D3 insufficiency (=30 ng/mL). None of the JoSLE patients has 25(OH) D3 level >30 ng/mL. There was no significant correlation between serum levels of 25(OH) D3 and the demographic data, medication used, and some laboratory data of patients with JoSLE. Diseaseactivity score in our patients was insignificantly correlated with serum levels of 25(OH) D3. In spite of vitamin D supplementation in Egyptian JoSLE patients and the presence of vitamin D insufficiency in the control group, there are still significantly lower levels of vitamin D in JoSLE compared to normal controls.

Keywords: Vitamin D insufficiency; Severe vitamin D deficiency; Juvenile-onset SLE (JoSLE); Disease activity.

1022. Relationship Between Angiotensin-Converting Enzyme Gene Polymorphism and Respiratory Distress Syndrome in Premature Neonates

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The Clinical Respiratory Journal., 9: 450-456 (2015) IF: 1.512

Objective The aim of this study was to investigate the possible relationship between angiotensin-converting enzyme (ACE) gene polymorphism (D/D and I/D genotypes) and respiratory distress syndrome (RDS) in preterm neonates. STUDY DESIGN: Our study included 120 preterm neonates (<37 weeks of gestation) with RDS (the patient group) and 120 preterm neonates without RDS (the control group). Blood samples were obtained from patients and control groups, and ACE gene polymorphism was analysed using the polymerase chain reaction method.

Results: D/D genotype was highly significant in the patient group compared with the control group (48.3% of RDS group vs 20% of the control group, $P < 0.001$). Meanwhile, I/D and I/I genotypes were significantly higher in the control group (75% and 5% of the control group vs 50% and 1.7% of the patient group, $P < 0.001$). D/D genotype was highly significant in neonates with bronchopulmonary dysplasia (BPD) compared with I/D genotype ($P = 0.001$).

Conclusion: Our Results may suggest that D/D genotype is associated with increased risk of RDS and BPD development in preterm neonates.

Keywords: ACE gene polymorphism; Bronchopulmonary dysplasia; Preterm infant; Respiratory distress syndrome.

1023. A Study of Familial Mediterranean Fever (MEFV) Gene Mutations in Egyptian Children with Type 1 Diabetes Mellitus

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European Journal of Medical Genetics, 58: 31-34 (2015) IF: 1.466

Background/Aims: An association of type 1 DM and familial Mediterranean fever (FMF) has been newly reported in the medical literature. The aim of the present work was to investigate frequency of MEFV gene mutations in Egyptian children with type 1 diabetes mellitus.

Methods: Forty five children with type 1 DM were screened for Mediterranean Fever (MEFV) gene mutation. Forty one healthy control subjects were included. Identification of FMF gene mutation was done based on polymerase chain reaction (PCR) and reverse hybridization. The assay covers 12 mutations in the FMF gene: E148Q e P369S e F479L e M680I (G/C) e M680I (G/A) e I692del e M694V e M694I e K695ReV726A e A744S and R761H.

Results: Among the screened diabetics, the overall frequency of MEFV gene mutations was 42.2% and among the control group it was 34.1% with no significant difference. Fourteen out of 45 diabetic children (31.1%) were heterozygous (E148Q in 7 children, A744S in 3 children, V726A in 2 children, M680I (G/C) in 1 child and P369S in1 child), while 5 children (11.1%) were compound heterozygous (M694V/M694I in 2 children, E148Q/K695R mutations in 1 child, E148Q/M694I in 1 child and E148Q/V726A in 1 child). The control group showed heterozygous mutation in 34.1% of cases (E148Q mutation in 14.6%, V726A in 12.2%, M680I (G/C) in 4.9% and M694V in 2.4%).

Conclusion: No significant difference in mutation frequency between diabetic and non-diabetic children. We have high carrier rate of MEFV gene mutations among Egyptian population probably due to high consanguinity.

Keywords: Type 1 Diabetes; Familial mediterranean fever; Children; MEFV gene mutation.

1024. Inhomogeneous Longitudinal Cardiac Rotation and Impaired Left Ventricular Longitudinal Strain in Children and Young Adults with End-Stage Renal Failure Undergoing Hemodialysis

Ruth Lagies, Bodo B. Beck, Bernd Hoppe, Sahar S. Sheta, Verena Weiß, Narayanswami Sreeram and Floris E. A. Udink ten Cate

Echocardiography, 32: 1250-1260 (2015) IF: 1.254

Background Cardiac dysfunction frequently complicates the clinical course of patients with end-stage renal failure (ESRF). Recently, we observed abnormal longitudinal cardiac rotation (LR) among patients with ESRF. In this study, we sought to quantify LR mechanics in patients undergoing hemodialysis (HD).

Methods Twenty-four subjects, 12 ESRF patients (58% male; age 17.5 ± 4.4 years) receiving HD, and 12 aged-matched controls, were prospectively studied. Patients underwent echocardiographic studies before and after HD. LR mechanics were quantified with two-dimensional speckle tracking

echocardiography. Peak systolic left ventricular (LV) longitudinal strain and displacement measurements were obtained in all subjects.
Results LR mechanics were successfully quantified in all subjects using 5 key echocardiographic features of LR. We identified two different inhomogeneous LR motion patterns in 41.7% of ESRF patients, characterized by a delayed timing of LR or increased segmental apical rotation. Inhomogeneous LR patterns were not found in controls. Timing of early-systolic counterclockwise LR increased after HD (P = 0.006). In patients, late-systolic clockwise LR occurred earlier (P = 0.043), and showed a significant prolongation after HD (P = 0.003). Longitudinal strain was significantly impaired in patients (P = 0.015), and further decreased after HD (P < 0.0001). Strong correlations were observed between strain and displacement parameters and LR mechanics.
Conclusions Quantifying LR using speckle tracking echocardiography was feasible, easy, and reproducible. Inhomogeneous LR motion patterns were demonstrated in a large proportion of patients with ESRF. LV dysfunction seems the most important determinant of inhomogeneous LR. Further studies are required to validate these findings.
Keywords: End-stage renal failure; Speckle tracking echocardiography; Longitudinal rotation; Hemodialysis; Apical rocking.

1025. Human Surfactant Proteins A2 (SP-A2) and B (SP-B) Genes as Determinants of Respiratory Distress Syndrome

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Ndian Pediatr, 52: 391-394 (2015) IF: 1.04

Objective To study the relationship between SP-A2 and SP-B gene polymorphisms and respiratory distress syndrome in preterm neonates. DESIGN: Cross-sectional. SETTING: Neonatal intensive care unit and the Molecular Biology unit of the Chemical Pathology Department, Kasr Alainy hospital, Cairo University.
Participants: Sixty-five preterm infants with respiratory distress syndrome and 50 controls. The genomic DNA was isolated using DNA extraction kits. SYBR Green-based real-time PCR was used to determine the variant genotypes of SP-A2 c.751 G>A and SP-B c.8714 G>C single nucleotide polymorphisms.
Results: Homozygosity of SP-A (OR 46, 95% CI 14-151) and SP-B (OR 5.2, 95% CI 2.3-11.4) alleles increased the risk of respiratory distress syndrome. The logistic regression model showed that genotypes SP-A2 (OR 164) and SP-B (OR 18) were directly related to the occurrence of respiratory distress syndrome, whereas gestational age (OR 0.57) and 5-minute Apgar score (OR 0.19) were inversely related to its occurrence.
Conclusions: There is a possible involvement of SP-A2 and SP-B genes polymorphisms in the genetic predisposition to respiratory distress syndrome.
Keywords: Neonate; Polymorphisms; Respiratory distress syndrome; Surfactant protein.

1026. Serum Copeptin Level as A Predictor of Outcome in Pneumonia

Mohammed Abdel-Fattah, Bassant Meligy, Riham El-Sayed and Yosra A El-Naga

Indian Pediatrics, 52: 807-808 (2015) IF: 1.04

This cross-sectional study included 41 children (age 2 mo-12 y) with pneumonia and 40 healthy controls. Assay of serum copeptin was done using ELISA. Median serum copeptin levels were significantly higher (P=0.03) in children with pneumonia, and in those who died (P=0.04). We conclude that serum copeptin levels seem to be associated with poor outcome in pneumonia.
Keywords: Copeptin; Pneumonia; Prognosis.

1027. Mesenteric and Mediastinal Lymphadenopathy in Egyptianchildren with Gaucher Disease Types 1 and 3 Treated with Enzyme Replacement Therapy

Magy S. Abdelwahab and Hadeel S. Eldeen

Journal of Pediatric Hematology Oncology, : - (2015) IF: 0.902

Gaucher disease (GD) is characterized by 3 clinical subtypes; type 1 GD (non-neuronopathic) and types 2 and 3 GD (acute and chronic neuronopathic forms, respectively). There are few reports of mesenteric and mediastinal lymphadenopathy, and none in type 1 GD or in African people. We report 8 Egyptian GD children (3 type 1 GD and 5 type 3 GD) who developed mesenteric and mediastinal lymphadenopathy despite receiving enzyme replacement therapy. Biopsy showed infiltration with Gaucher cells and no malignant changes. Pediatric physicians should be aware of possible lymphadenopathy associated with both types 1 and 3 GD as it can mimic malignancy.
Keywords: Gaucher disease type 1 and 3; Enzyme replacement therapy; Lymphadenopathy; Egyptian.

1028. Assessment of Inter-atrial, Inter-ventricular, and Atrio-ventricular Interactions in Tetralogy of Fallot Patients after Surgical Correction. Insights from Two-dimensional Speckle Tracking and Three-Dimensional Echocardiography

Mohamed Abd El Rahman, Tanja Raedle-Hurst, Axel Rentzsch, Hans-Joachim Schäfers and Hashim Abdul-Khaliq

Cardiology in the Young, 25 (7): 1254-1262 (2015) IF: 0.835

Background: We aimed to assess biatrial size and function, interactions on atrial and ventricular levels, and atrio-ventricular coupling in patients after tetralogy of Fallot repair.
Methods: A total of 34 patients with a mean age of 20.9±9 years, and 35 healthy controls, underwent two-dimensional speckle tracking echocardiography for ventricular and atrial strain measurements and real-time three-dimensional echocardiography to assess ventricular and atrial volumes.
Results: When compared with controls, tetralogy of Fallot patients had significantly reduced right atrial peak atrial longitudinal strain ($p<0.01$), right atrial peak atrial contraction strain ($p<0.01$), right atrial ejection fraction ($p<0.01$), left atrial peak atrial longitudinal strain ($p<0.01$), left atrial peak atrial contraction strain ($p<0.05$), and left atrial ejection fraction ($p<0.01$). In the tetralogy of Fallot group, left ventricular ejection

fraction was negatively related to the right ventricular end-systolic volume normalised to body surface area (r=-0.62, p<0.01). An association was found in patients between the right atrial peak longitudinal strain and mean right ventricular strain (r=0.64, p<0.01). In patients, the left atrial peak longitudinal strain correlated negatively with right atrial end-diastolic volume normalised to body surface area (r=-0.67, p<0.01), whereas the left atrial ejection fraction correlated weakly with left ventricular ejection fraction (r=0.41, p<0.05).
Conclusions: In asymptomatic tetralogy of Fallot patients, biatrial dysfunction exists and can be quantified via two-dimensional speckle tracking echocardiography as well as real-time three-dimensional echocardiography. Different forms of interactions on atrial and ventricular levels are evident among such cohorts.
Keywords: Tetralogy of fallot; Atrial function; Real-time three-dimensional echocardiography; Two-dimensional echocardiography.

1029. First Report of Acute Lymphoblastic Leukemia in an Egyptian Child with β-Thalassemia Major

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Hemoglobin, 39(2): 127-129 (2015) IF: 0.787

β-Thalassemia (β-thal) is the most common hereditary anemia in humans. With improvement of treatment protocols, patients are living longer and new complications have emerged. Few articles have reported the occurrence of malignancies among patients with β-thal in different parts of the world. We herein report the first pediatric patient with β-thal major (β-TM), who developed acute lymphoblastic leukemia in Egypt with analysis of the different theories of pathogenesis.
Keywords: Acute lymphoblastic leukemia (ALL); Egypt; Children; β-Thalassemia (β-Thal).

1030. Micronucleus Assay as A Biomarker for Chromosome Malsegregation in Young Mothers with Down Syndrome Children

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Genetic Counseling, 26: 13-19 (2015) IF: 0.444

Micronucleus assay as a biomarker for chromosome malsegregation in young mothers with Down syndrome children: The aim of the present study is to test the susceptibility of chromosome 21 malsegregation in young mothers of Down syndrome children using combined micronucleus (MN) assay and FISH analysis. The present study included 62 Egyptian young mothers (age < 30 y) who were divided into 22 mothers of DS offspring and 40 age matched controls. All subjects were subjected to chromosomal analysis, micronucleus assay, and FISH analysis. High statistical significant difference was found between mothers of Down syndrome (MDS) and the controls in the MN percentage (P=0.034). Also there was high statistical significant difference between MDS and the controls in the percentage of positive malsegregation (P =0.0001). The specificity of combined MN% with FISH was 90%, while the sensitivity was 63.6%. Combined MN-FISH test is highly specific but moderately sensitive in assessing the risk of having children with DS in young mothers.
Keywords: Young mothers of down syndrome; Micronucleus assay; Fish; Malsegregation.

1031. The Burden of Different Pathogens in Acute Diarrhoeal Episodes Among A Cohort of Egyptian Children Less Than Five Years Old

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Przeglad Gastroenterologiczny, 10 (3): (2015) IF: 0.375

Introduction: Diarrhoea continues to cause significant morbidity in Egypt AIM: To determine the frequency and distribution of different enteropathogens in acute diarrhoeal episodes, utilising an expanded testing regimen, and to correlate clinical signs and symptoms associated with the detected pathogens.
Material and Methods: The case-control study enrolled 356 patients < 5 years old with acute diarrhoea and 356 age and sex-matched healthy controls. Both cases and controls underwent a full history and physical examination, and provided two rectal swab specimens and a stool sample. Laboratory analysis included stool culture, microscopy, and indirect Methods.
Results: Rotavirus was detected in 11% of patients. Enterotoxigenic Escherichia coli (ETEC), Campylobacter, Shigella, and Salmonella were detected in 7%, 3.7%, 1.1%, and 1.4% of patients, respectively; and in 11.1%, 3.1%, 0.6%, and 0.6% of controls, respectively, with no significant statistical difference. Cryptosporidium was detected in 3.9% of cases. Mixed infection was detected in 5.9% of cases and 0.9% of controls, with a significant difference (p < 0.001). No pathogen was detected in 66.3% of cases and in 83.5% of controls. Rotavirus infection was associated with recurrent vomiting, dehydration, and hospitalisation. Bacterial diarrhoea was associated with vomiting (52%) in ETEC infections, fever (80%) in Salmonella infections, mucus (100%) and blood (50%) in stools of Shigella infections, and convulsions (15%) in Campylobacter infections.
Conclusions: Rotavirus is a prominent cause of diarrhoea among Egyptian children. Despite utilising an expanded testing regimen, more work is still needed for identification of other enteropathogens that constitute other causative agents of diarrhoea.
Keywords: Egypt; Acute; Children; Diarrhoea; Rotavirus.

1032. Serum Klotho: Relation to Fibroblast Growth Factor-23 and Other Regulators of Phosphate Metabolism in Children with Chronic Kidney Disease

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Nephron,129: 293–299 (2015)

FGF23 and Klotho synergize to regulate phosphate homeostasis by promoting renal phosphate excretion. Chronic kidney disease (CKD) may be viewed as a state of FGF23 resistance caused by Klotho deficiency. This viewpoint explains several observations

on phosphate metabolism in CKD that lack mechanistic insights. Our objectives were to correlate serum klotho and FGF-23 with other variables that regulate phosphate metabolism. We studied 40 patients with CKD on conservative treatment (group A), 44 patients with endstage renal disease (ESRD) on regular hemodialysis (group B), 40 kidney transplant recipients (KTR) (group C) and 40 healthy controls for measuring serum klotho and FGF-23.

Blood samples were withdrawn for measuring the levels of serum Calcium (Ca), Phosphorus (P), alkaline phosphatase (ALP), 1,25 (OH) 2 D 3 , intact parathyroid hormone (PTH), FGF- 23 and α klotho. The mean levels of FGF-23 and α klotho in control group were 225.78 ± 111.05 pg/ml (range: 102.4, 418.5) and 6.78 ± 1.90 ng/ml (range: 4, 11), respectively. The mean levels of FGF-23 in the 3 studied groups were 1,034.2 ± 84.6, 1,288.7 ± 131.4 and 1,008.7 ± 117.6 pg/ml, respectively.

The median levels of s-klotho in the 3 studied groups were 3.15, 2.3 and 2.95, respectively. It was found that FGF-23 was significantly increased and α klotho was significantly de- creased in all patients when compared with those in the control group ($p < 0.001$, <0.001, respectively). We found that there was a significant inverse correlation between serum Ca and α klotho in the studied groups. There was no significant correlation between FGF-23 and α klotho in the studied groups ($p > 0.05$). We have shown that circulating s-klotho was not related to FGF-23 in CKD, dialysis and KTR patients.

In addition, we demonstrated a novel association between serum Ca and s-klotho that needs to be further studied.

Keywords: FGF-23; Klotho; Phosphorus; Chronic kidney disease; Kidney transplantation; Dialysis.

1033. Chanarin–dorfman Syndrome: A Case Report and Review of the Literature

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Arab Journal of Gastroenterology, 16: 142-144 (2015)

Chanarin–Dorfman syndrome, a ''neutral lipid storage disease with ichthyosis,'' is a multisystem inherited metabolic disorder associated with congenital ichthyosis and accumulation of lipid droplets in various types of cells. Case report: A 3-year-old male presented to the Pediatric Hepatology Unit, Cairo University Children's Hospital, Cairo, Egypt, with accidentally discovered hepatomegaly.

He had generalised ichthyosis with dark skin pigmentation and bilateral ectropion. Abdominal examination revealed generalised abdominal distention with firm nontender hepatomegaly. His liver functions were deranged. Blood film showed many vacuolated neutrophils.

Serum triglyceride and creatine kinase levels were elevated. Abdominal ultrasound showed a moderately enlarged liver with a bright echo pattern. Liver biopsy revealed marked diffuse macrovesicular fatty changes. The diagnosis of Chanarin–Dorfman Syndrome was made based on the dermatological, haematological, and liver biopsy findings.

Keywords: Chanarin–dorfman syndrome; Hepatomegaly; Ichthyosis.

1034. The Effect of Regular Hemodialysis on the Nutritional Status of Children with End-stage Renal Disease

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Saudi Journal of Kidney Diseases and Transplantation, 26: 263-270 (2015)

Growth failure is one of the most common and profound clinical manifestation of chronic kidney disease (CKD) in infants, children and adolescents. The aim of this study was to assess the nutritional status of Egyptian children with end-stage renal disease (ESRD) on regular hemodialysis (HD). The study included 50 Egyptian children with ESRD on regular HD, following-up at the Pediatric Nephrology unit, Cairo University. History, including dietary history, was taken for all patients and clinical examination was performed on all of them. Body weight, standing height, height or length SD score, the skin fold thickness, mid-arm circumference, mid-arm muscle circumference and mid-arm muscle circumference area were also assessed. The height of the patients was the most affected anthropometric parameter, as 78% of the patients were shorter (height SDS below -3). Body weight is less affected than height, as body weight SDS of 34% of patients was less than -3 SDS. In addition, the body mass index of 16% of the patients was <3rd percentile, while only 4% of the patients were >97th percentile. Although most ESRD patients received adequate protein and caloric intake, their growth was markedly affected, especially with longer period on HD. We suggest that assessment of growth parameters should be performed at a minimum period of every six months in children with CKD stages 2–3. For children with more advanced CKD (stages 4–5 and 5D), more frequent evaluation may be warranted due to the greater risk of abnormalities.

Keywords: Regular hemodialysis; Children; Nutritional status.

1035. Urinary Monocyte Chemoattractant Protein-1 as A Biomarker of Lupus Nephritis Activity in Children

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Saudi Journal of Kidney Diseases and Transplantation, 26: 507-515 (2015)

Systemic lupus erythematosus (SLE) is a life-long, life-limiting and multi-systemic autoimmune disease. Glomerulonephritis is one of the most serious manifestations of SLE. Younger children have an increased incidence, severity and morbidity of lupus nephritis (LN) compared with adult-onset disease. Monocyte chemoattractant protein-1 (MCP-1) enhances leukocyte adhesiveness and endothelial permeability in the kidneys of murine and human LN models. Our study aimed to assess the role of urinary MCP-1 in the early diagnosis of LN activity. Sixty children, of whom 45 children aged from six to 12 years old and of both sexes (15 SLE patients without nephritis, 15 active LN and 15 inactive LN) fulfilling the American College of Rheumatology Classification Criteria for SLE were studied in comparison with 15 healthy subjects. We investigated the serum and urinary MCP-1 in all groups using the enzyme-linked immunosorbent assay test. Urinary MCP-1 was significantly higher in active LN in comparison with inactive LN and controls,

and also significantly higher in inactive LN in comparison with SLE without nephritis and controls. There was also a significant difference between SLE without nephritis and controls. Serum MCP-1 was significantly higher in the group with active LN in comparison with the inactive group and SLE without nephritis and controls, but there was no significant difference between SLE and controls. The urinary MCP-1 level correlated well with SLE disease activity as measured by the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI). Urinary MCP-1 correlates positively with proteinuria, blood urea nitrogen level and creatinine and negatively with hemoglobin and creatinine clearance. We concluded that measurement of MCP-1 in urine may be useful for monitoring the severity of renal involvement in SLE. We recommend measuring urinary MCP-1 in pediatric SLE for the early diagnosis of LN and for the evaluation of the severity of renal involvement.

Keywords: Urinary monocyte chemoattractant protein-1; Lupus nephritis activity;Children.

1036. Nonalcoholic Steatohepatitis in Children: the Modern Day Pediatric Epidemic

Mortada El-Shabrawi and Mona Issa

Journal of Gastroenterology and Hepatology Research, 4(7): 1663-1670 (2015)

Nonalcoholic fatty liver disease has emerged as the leading cause of chronic liver disease in children and adolescents in the United States. A two- to three-fold rise in the rates of obesity and overweight in children over the last 2 decades is probably responsible for the epidemic of nonalcoholic fatty liver disease. Emerging data suggest that children with nonalcoholic steatohepatitis progress to cirrhosis which may ultimately increase liver-related mortality. More worrisome is the recognition that cardiovascular risk and morbidity in children and adolescents is associated with fatty liver. Pediatric fatty liver disease often displays a histologic pattern distinct from that found in adults. Liver biopsy remains the gold standard for diagnosis of nonalcoholic steatohepatitis. Non-invasive biomarkers are needed to identify individuals with progressive liver injury. Targeted therapies to improve liver histology and metabolic abnormalities associated with fatty liver are needed. Currently, randomizedcontrolled trials are underway in the pediatric population to define pharmacologic therapy for nonalcoholic steatohepatitis. Public health awareness and intervention are needed to promote healthy diet, exercise, and lifestyle modifications to prevent and reduce the burden of disease in the community

Keywords: Nonalcoholic; Steatohepatitis; Children.

1037. Bifidobacterium Lactis in Treatment of Children with Acute Diarrhea. A Randomized Double Blind Controlled Trial

Neveen Helmy Abou El-Soud, Reem Nabil Said, Dalia Sayed Mosallam, Nahla Abdel, Moniem Barakat and Mohamed Ahmed Sabry

Macedonian Journal of Medical Sciences, 3: 403-407 (2015)

Background: Probiotics are becoming increasingly popular treatment for children diarrhea. Although there are several probiotic strains potentially useful, researches were often limited to certain strains. AIM: To test Bifidobacterium lactis on morbidity of acute diarrhea in children less than 2 years.

Subjects and Methods: A randomized double-blind controlled clinical trial was conducted in 50 children (1 - 23 months) admitted with acute diarrhea to the Pediatric Hospital, Cairo University and were randomly assigned to receive in addition to usual treatment of diarrhea according to WHO guidelines; one of two treatments either milk formula non-supplemented (n = 25) or supplemented (n = 25) with Bifidobacterium lactis 14.5 x 106 CFU/100 ml daily for one week. Primary outcomes were frequency and duration of diarrhea and hospital stay. Secondary outcomes were duration of fever and vomiting episodes. Safety and tolerance were also recorded.

Results: On admission, patients' characteristics of both groups (50 cases) were similar. For children who received the probiotics for one week; mean duration of diarrhoea was shorter than in controls (3.12 ± 0.92 vs. 4.10 ± 0.94 days) (P = 0.02), number of motions per day was less than in controls (3.96 ± 0.62 vs. 4.46 ± 0.85) (P = 0.04) and discharge from hospital <2 days was more frequent than in controls (72% vs. 44%) (P = 0.048). There was no effect on fever (P = 0.63) or vomiting (P = 0.54).

Conclusion: Bifidobacterium lactis probiotics in supplemented milk formula decreased significantly frequency, duration of diarrhea, and hospital stay than usual treatment alone in children with acute diarrhea. Additional researches on other uncommon local probiotic species should be encouraged.

Keywords: Probiotics; Bifidobacterium Lactis; Acute.

Dept. of Pharmacology

1038. Comparative Study of the Effect of Diacerein and Diclofenac Sodium and their Combination in Osteoarthritis Model Induced by Monoiodoacetate in Albino Rats

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Research Journal of Pharmaceutical, Biological and Chemical Sciences, 6(3): 1079-1089 (2015)

Osteoarthritis (OA) is the most common joint disorder. The current treatment of osteoarthritis is primarily focused on symptomatic relief by the use of rapidly acting analgesics such as NSAIDs and newer cyclooxygenase-2 (COX-2) specific inhibitors. Diacerein, an Interleukin-1β-antagonist that has been used in the last few years in the treatment of OA. This work was designed to compare the anti-inflammatory effect of Diacerein with Diclofenac Sodium and their combination on albino rats model of osteoarthritis. Ninety adult healthy female albino rats were allocated into 5 groups: normal untreated animals (negative control), the disease model group that received a single dose of monoiodoacetate (MIA) intra articularly in their right knees (positive control), and the (MIA) induced osteoarthritis treated either by Diacerein, diclofenac sodium, or their combination for 6 weeks. Level of serum cartilage oligomeric matrix protein, histopathological examination, and radiological assessment were performed. The Results revealed that Diacerein has the potential to ameliorate osteoarthritic changes unlike the commonly used NSAIDs.

Keywords: Comparative; Osteoarthritis; Diacerein; Diclofenac sodium; Monoiodoacetate.

Dept. of Physiology

1039. Modification of Hippocampal Markers of Synaptic Plasticity by Memantine in Animal Models of Acute and Repeated Restraint Stress: Implications for Memory and Behavior

Shaimaa Nasr Amin, Ahmed Amro El-Aidi, Mohamed Mostafa Ali, Yasser Mahmoud Attia and Laila Ahmed Rashed

Neuromolecular Medicine, 17: 121-136 (2015) IF: 3.678

Stress is any condition that impairs the balance of the organismphysiologically or psychologically. The response to stress involves several neurohormonal consequences. Glutamate is the primary excitatory neurotransmitter in the central nervous system, and its release is increased by stress that predisposes to excitotoxicity in the brain.Memantine is an uncompetitive N-methyl D-aspartate glutamatergic receptors antagonist and has shown beneficial effect on cognitive function especially in Alzheimer's disease. The aim of the work was to investigate memantine effect on memory and behavior in animal models of acute and repeated restraint stress with the evaluation of serum markers of stress and the expression of hippocampal markers of synaptic plasticity. Forty-two male rats were divided into seven groups (six rats/group): control, acute restraint stress, acute restraint stress with Memantine, repeated restraint stress, repeated restraint stress with Memantine and Memantine groups (two subgroups as positive control). Spatial working memory and behavior were assessed by performance in Y-maze.We evaluated serum cortisol, tumor necrotic factor, interleukin-6 and hippocampal expression of brain-derived neurotrophic factor, synaptophysin and calcium-/calmodulin-dependent protein kinase II. Our Results revealed thatMemantine improved spatialworking memory in repeated stress, decreased serum level of stress markers and modified the hippocampal synaptic plasticity markers in both patterns of stress exposure; in ARS, Memantine upregulated the expression of synaptophysin and brainderived neurotrophic factor and downregulated the expression of calcium-/calmodulin-dependent protein kinase II, and in repeated restraint stress, it upregulated the expression of synaptophysin and downregulated calcium-/calmodulin-dependent protein kinase II expression.

Keywords: Restraint memantine memory behavior synaptic plasticity.

1040. The Utility of Iron Chelators in the Management of Inflammatory Disorders

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Mediators of Inflammation, 2015: 12-0 (2015) IF: 3.236

Since iron can contribute to detrimental radical generating processes through the Fenton and Haber-Weiss reactions, it seems to be a reasonable approach to modulate iron-related pathways in inflammation. In the human organism a counterregulatory reduction in iron availability is observed during inflammatory diseases. Under pathological conditions with reduced or increased baseline iron levels different consequences regarding protection or susceptibility to inflammation have to be considered. Given the role of iron in development of inflammatory diseases, pharmaceutical agents targeting this pathway promise to improve the clinical outcome. The objective of this review is to highlight the mechanisms of iron regulation and iron chelation, and to demonstrate the potential impact of this strategy in the management of several acute and chronic inflammatory diseases, including cancer.

Keywords: Iron; Chelators; Inflammatory disorders.

1041. Evaluation of the Effects of Eserine and JWH-133 on Brain Dysfunction Associated with Experimental Endotoxemia

Maha Gamal, Jackline Moawad, Laila Rashed,Wafaa El-Eraky, Dalia Saleh, Christian Lehmann and Nivin Sharawy

Journal of Neuroimmunology, 281: 9-16 (2015) IF: 2.467

Sepsis is associated with neuronal damage and cognitive impairment, with the participation of pro-inflammatory cytokines and oxidative–nitrous stress. It is known that activated microglia plays a vital role in neuro-inflammation and neuro-degeneration. Thus, the objective of this study was to evaluate therapeutic roles of two microglia regulating agents, JWH-133 and Eserine, on the neuroinflammatory associated brain dysfunctions. To achieve our aim, we used control rats or submitted rats to lipopolysaccharide (LPS) challenge. 30 min after LPS challenge, the animals received either saline, Eserine, JWH-133 or Eserine + JWH-133. After 24 h, animals were submitted to the habituation to T maze, Rotarod and activity cage tests. The rats were killed after and were evaluated for central and peripheral inflammatory and oxidative parameters. We observed that the use of Eserine, JWH-133 or Eserine + JWH-133 reverted the increases in the inflammatory markers [interleukin 6 (IL6), vascular cell adhesion molecule 1(VCAM-1) and Eselectin] and oxidative–nitrous stress MDM, and that the anti-inflammatory, antioxidant properties of both JWH-133 and Eserine successfully improve the LPS induced brain dysfunction. Conclusions The Results observed in this study reinforce the role of microglia activation regulating agents, in particular, JWH-133 and Eserine, in the brain dysfunction associated with endotoxemia.

Keywords: Sepsis; Cognitive; Behaviour; JWH-133; Eserine.

1042. A Study on the Effect of Cimetidine and L-Carnitine on Myoglobinuric Acute Kidney Injury in Male Rats

Suzanne Estaphan, Hassan Eissa, Samah Elattar, Laila Rashed and Mira Farouk

Injury International Journal of the Care of the Injured, Volume 46, Issue 7: 1223-1230 (2015) IF: 2.137

Myoglobinuric acute renal failure is the most important life threatening complication of rhabdomyolysis. Iron, free radicals, nitric oxide and cytochrome p450 are involved in the pathogenesis of mARF. The aim of this study is to compare the effect of cimetidine, l-carnitine and both agents together on mARF in rats. Forty rats were divided into 5 groups; group I: control rats, group II: myoglobinuric ARF rats, group III: mARF rats received l-carnitine (200 mg/kg, i.p.), group IV: mARF rats received cimetidine (150 mg/kg i.p.) and group V: mARF rats received both agents together. 48 h after glycerol injection, systolic blood pressure was measured. Urine and blood samples were collected to evaluate urine volume, GFR, BUN, creatinine,

K, Na, serum creatine kinase, NO and glutathione levels. Kidney specimens were taken to investigate renal cytochrome p450 and for histological examinations. Cimetidine treatment significantly decreased creatinine, BUN, K, Na, SBP and creatine kinase and increased GFR and urine volume compared to group II. l-carnitine exerted similar changes except for the effect on K and GFR. NO was significantly decreased, while renal glutathione and cytochrome p450 were significantly increased in groups treated with l-carnitine or cimetidine as compared to group II. Combined treatment further improved renal functions, creatine kinase, oxidative stress parameters and SBP as compared to each therapy alone. The histological changes confirmed the biochemical findings. Cimetidine and l-carnitine have protective effects – almost equally – against mARF. Using both agents together, minimises the renal injury.

Keywords: Rhabdomyolysis; Acute kidney injury; Oxidative stress; Catalytic iron; L-carnitine; Cimetidine; Cytochrome P450.

1043. Effects of Ghrelin on Sepsis-induced Acute Kidney Injury: One Step Forward

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Clin Exp Nephrol (2015) 19:419–426 (2015) IF: 2.020

Background Among the several disorders induced by sepsis, acute kidney injury (AKI) represents the most important economic burden problem that is associated with high mortality and morbidity rates. The aim of this study was to investigate the anti-inflammatory effects of ghrelin in sepsis-induced AKI and the possible role of vagus nerve.

Methods Five groups were included: sham, cecal ligation and puncture (CLP), CLP–ghrelin, CLP–vagotomy and CLP–vagotomy–ghrelin group.

Results Ghrelin treatment immediately after induction of CLP, significantly improved renal Glomerular filtration rate (GFR), serum creatinine, BUN and renal necrosis score as compared to the unprotected CLP group. In addition,
ghrelin significantly decreased renal TNF alpha (111.5 ± 10.35 vs. 291.8 ± 15.8 pg/mg ptn), VCAM1 (6.28 ± 1.7 vs. 12.9 ± 1.2 l/g ptn) and MPO (0.95 ± 0.13 vs. 2.5 ± 0.4 l/g ptn) without significant increase in renal IL-10. Those effects were abolished by vagotomy.

Conclusion We concluded that ghrelin could represent new therapeutic window in early treatment of sepsisinduced
AKI and this could be mainly due to its anti-inflammatory effects.

Keywords: Acute kidney injury; Cytokine; MPO; Ghrelin; Sepsis.

1044. Evaluation of Multi-Neuroprotective Effects of Erythropoietin Using Cisplatin Induced Peripheral Neurotoxicity Model

Nivin Sharawya, Laila Rashed and Magdy Fouad Youakim

Experimental and Toxicologic Pathology, 67: 315-322 (2015) IF: 1.86

Cisplatin (CDDP) is severely neurotoxic anti-neoplastic drug that causes peripheral neuropathies with clinical signs known as chemotherapy-induced peripheral neurotoxicity. The ameliorating effects of erythropoeitin on cisplatin-induced neuropathy, which seem to be mediated by enhancing the cell resistance to side effects of cisplatin rather than by influencing the formation or repair rates of cisplatin-induced cross-links in the nuclear DNA, had been previously reported. The main objective of our study is to investigate the roles of nitro-oxidative stress, nuclear factor kappa B (NFκB) gene expressions and TNF levels on the previous reported erythropoietin anti-apoptotic neuroprotective effects during cisplatin induced neurotoxicity. The present study compared the effects of erythropoietin (50 μg/kg/d thrice weekly) on cisplatin (2 mg/kg/d i.p. twice weekly for 4 weeks) induced neurophysiologic changes and the associated changes in the inflammatory mediators (TNF alpha and NFKB), oxidative stress (malondialdehyde (MDA), superoxide dismutases (SOD) and glutathione) and gene expression of both neuronal nitric oxide synthase (nNOS) and inducible nitric oxide synthase (iNOS). In addition, sciatic nerve pro-apoptotic and anti-apoptotic indicators (Bcl, Bax, Caspase 3) were measured. We found that concomitant administration of erythropoietin significantly reversed the cisplatin induced nitro-oxidative stress – with significant increases in sciatic nerve glutathione and superoxide dismutase antioxidant enzyme levels and a significant decrease in iNOS gene expression. We conclude that erythropoietin anti-apoptotic neuro-protective effects could partially contribute to observed antioxidant effects of erthropoietin.

Keywords: Cisplatin; Erythropoietin; Oxidative; Inflammatory; Apoptosis.

Dept. of Psychology

1045. Impact of Political Violence on the Mental Health of School Children in Egypt

Suaad Moussa, Monira El Kholy, Dalia Enaba, Khadiga Salem, Asmaa Ali, Mohamed Nasreldin, Mohamed Gabal, Maha Emadeldine and Hamdy F. Moselhy

Journal of Mental Health, 00: 1-5 (2015) IF: 1.57

Background: Since the beginning of the Egyptian political conflict, Tahrir Square has been the epicentre of intense political violence. Students attending schools located near this square witnessed and/or directly experienced the consequences of a series of violent events.

Aim: This study will investigate the presence of psychiatric symptoms in children attending these schools to explore patterns of responses according to their perceptions of the revolution on their lives, adjusted for, gender and socio-economic status.

Method: A descriptive cross-sectional study conducted with 515 Egyptian school children attending government, experimental, and private language schools located within 1 km of Tahrir Square. To assess psychiatric symptoms in these children, a specially designed questionnaire was used to detect, depression, anxiety, and post-traumatic stress disorder (PTSD) symptoms and impairments.

Results: Children attending schools near Tahrir Square showed high rates of depression, PTSD and anxiety symptoms. The risk factors identified for developing psychiatric symptoms were a negative perception of the effect of the revolution, knowing someone exposed to trauma during the events, female gender and low socio-economic class.

Discussion: These Results highlight the need for large-scale studies to explore the consequences of ongoing political violence

on children and to establish baseline data on the mental health of Egyptian children.
Keywords: Anxiety; Depression; Egypt; PTSD; Political conflict; Violence.

1046. Role of Traditional Healers in the Pathway to Care of Patients with Bipolar Disorder in Egypt

Tarek Assad, Tarek Okasha, Hisham Ramy, Tamer Goueli, Hanan El-Shinnawy, Mohamed Nasr, Heba Fathy, Dalia Enaba, Dina Ibrahim, Mahmoud Elhabiby, Nesreen Mohsen, Sherien Khalil, Mohamed Fekry, Nivert Zaki, Hani Hamed, Hanan Azzam, Marwa A Meguid, Menan AbdelMaksoud Rabie, Marwa Sultan, Soheir Elghoneimy, Osama Refaat, Doaa Nader, Doha Elserafi, Marwa Elmissiry and Iman Shorab

International Journal of Social Psychiatry, 1(6): 583-590 (2015) IF: 1.098

Background: A large number of mentally ill patients prefer to visit non-medical practitioners such as traditional healers because of the confidence in the system, affordability and accessibility of the service. This may lead to delay in seeking psychiatric services and has prognostic impact. Aim: To assess the rate of bipolar affective disorder (BAD) patients seeking traditional healers, the sociodemographic and clinical correlates of those patients.
Methods: We assessed 350 patients with BAD after confirmation of diagnosis with Structured Clinical Interview for DSM-IV Axis I Disorder (SCID-I) research version and assessment of functioning with Global Assessment of Functioning scale. They were assessed for percent, rate and timing of seeking traditional healers.
Results: In all, 40.8% sought traditional healers, with 34.9% more than four times. Of those, 62.2% were before seeking psychiatric services and 37.8% after. Lower educational level, less impairment of functioning and presence of hallucinations were significant correlates.
Conclusion: This study shows that most of the patients suffering from mental illness prefer to approach faith healers first, which may delay entry to psychiatric care and thereby negatively impact the prognosis of BAD. This highlights the importance of mental health education and developing a positive collaborative relationship with traditional healers.
Keywords: Traditional healers; Bipolar patients; Pathway to care.

1047. Impact of Depression on Pathologic Internet use Among Intern Doctors of Cairo Universityhospital (Kasral-Ainy)

Maha Wasfi Mobasher, Ashraf Adel Fouad Dalia Ahmed Enaba, Kareem Shawky and Hamdy F. Moselhy

Addictive Disorders and Their Treatment, 14: 182-187 (2015)

Introduction: Thegrowthoftheinternethasimpactedalmostevery facet of life in the world. In most cases, utilization of theinternethasimprovedpeople'slives.However, in some cases excessive use of the internet has been linked to significant impairment in critical areas of functioning.
Aim of the Work: To determine the prevalence of pathologic use of the internet and verify whether there is a relation between this problem and the depressive disorders among Intern doctors working in Cairo University hospital.
Subjects and Methods: A total of 300 Intern doctors of Cairo University hospitals were included. The Internet Addiction Test was used to measure pathologic intent use. Present State Examination-10 was used for screening of depressive symptoms and Beck Depression Inventory to determine the severity of depression. The Internet Application Checklist was used to determine internet usage patterns of the subjects.
Results: More than half of the sample (54.0%) consisted of pathologic internet users. Only 12.3% comprised moderate/severe pathologic internet users. Severe forms of pathologic internet use were more prevalent in male individuals than in female individuals. Pathologic internet users were more associated with depressive symptoms and depressive disorders than nonpathologic internet users.
Conclusions: There were significant positive correlations among internet addiction, depressive symptoms, and depressive disorders in fresh graduate Cairo University Intern doctors. As there is a potential harmful behavior among new graduate doctors, health professionals need to be aware of measures and procedures for the assessment of internet addiction and depression.
Keywords: Pathologic internet use; Depression; Depressive disorders.

1048. The Influence of A118g Single Nucleotide Polymorphism of Human Mu Opioid Receptor Gene and the MDR1 Gene in Egyptian Patients with Tramadol Induced Seizure

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Addictive Disorders and Their Treatment, 14: 105-112 (2015)

Objectives: Although seizures have been reported with tramadol use, the exact mechanism is not yet confirmed. An individual genetic susceptibility may have a role in developing seizures.Thepurpose of thisstudywasto investigate the frequency of mutant allele of the OPRM A118G and MDR1 C3534T in tramadol users with seizures.
Methods: After investigators obtained informed consent and when other causes of seizures were excluded, 74 Egyptian tramadol users, with and without seizures, were assessed clinically, radiologically, and by electroencephalogram. Their blood samples were genotyped for the l-opioid receptor gene and the multidrug resistant (MDR1) genes.
Results: Thirty-seven subjects had seizures. A history of head trauma and more opioid use were reported by the group with seizures. Family history of epilepsy was present in 2 subjects with seizures. There was no significant difference between the 2 groups with regard to the frequency of occurrence of the SNP A118G of the mu opioid receptor gene or the SNP C3435T of the MDR1 gene.
Conclusions: This study could not illustrate a potential genetic background in the studied point mutations that could explain the development of tramadol-induced seizures.
Keywords: Tramadol; Seizure; Mutant allele; OPRM; MDR1.

Dept. of Public Health

1049. Secondhand Smoke in Waterpipe Tobacco Venues in Istanbul, Moscow, and Cairo

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Environmental Research, 142: 568-574 (2015) IF: 4.373

Objective The prevalence of waterpipe tobacco smoking has risen in recent decades. Controlled studies suggest that waterpipe secondhand smoke (SHS) contains similar or greater quantities of toxicants than cigarette SHS, which causes significant morbidity and mortality. Few studies have examined SHS from waterpipe tobacco in real-world settings. The purpose of this study was to quantify SHS exposure levels and describe the characteristics of waterpipe tobacco venues.

Methods: In 2012-2014, we conducted cross-sectional surveys of 46 waterpipe tobacco venues (9 in Istanbul, 17 in Moscow, and 20 in Cairo). We administered venue questionnaires, conducted venue observations, and sampled indoor air particulate matter (PM2.5) (N=35), carbon monoxide (CO) (N=23), particle-bound polycyclic aromatic hydrocarbons (p-PAHs) (N=31), 4-methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) (N=43), and air nicotine (N=46).

Results: Venue characteristics and SHS concentrations were highly variable within and between cities. Overall, we observed a mean (standard deviation (SD)) of 5 (5) waterpipe smokers and 5 (3) cigarette smokers per venue. The overall median (25th percentile, 75th percentile) of venue mean air concentrations was 136 (82, 213) μg/m(3) for PM2.5, 3.9 (1.7, 22) ppm for CO, 68 (33, 121) ng/m(3) for p-PAHs, 1.0 (0.5, 1.9) ng/m(3) for NNK, and 5.3 (0.7, 14) μg/m(3) for nicotine. PM2.5, CO, and p-PAHs concentrations were generally higher in venues with more waterpipe smokers and cigarette smokers, although associations were not statistically significant.

Conclusion: High concentrations of SHS constituents known to cause health effects indicate that indoor air quality in waterpipe tobacco venues may adversely affect the health of employees and customers.

Keywords: Indoor air pollution; Secondhand smoke; Tobacco smoke pollution; Waterpipe smoking.

1050. Viral Transmission Risk Factors in an Egyptian Population with High Hepatitis C Prevalence

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Bmc Public Health, 15: 1030, (2015) IF: 2.264

Background: Egypt has the world's highest prevalence of infection with hepatitis C virus (HCV), which is a major cause of hepatocellular carcinoma. The high HCV prevalence is largely attributed to the parenteral antischistosomal therapy (PAT) campaigns conducted from the 1950s through the 1980s; however, the primary modes of transmission in the post-PAT period are not well known. In this study we examined the associations between HCV prevalence and exposures to risk factors, including PAT, in a high HCV prevalence population.

Methods: Using a cross-sectional design, we examined the associations between demographic characteristics and risk factors for HCV transmission and HCV positivity prevalence among a sample of Egyptian residents. Data were collected through an interview-administered survey, and the association estimates were determined using X^2 and logistic regression.

Results: The highest HCV positivity prevalence was observed in cohorts born before 1960, and declined precipitously thereafter; whereas the proportion of subjects reporting PAT remained relatively stable. Being male, having a rural residence, and having received PAT were all associated with HCV positivity; however, PAT alone could not account for the high prevalence of HCV.

Conclusions: In Egypt, PAT and other transmission factors yet to be identified, as well as cohorts born before the 1960s and infected with HCV, are most likely the main contributors to the current HCV endemic.

Keywords: HCV; Egypt; Prevalence; Transmission.

1051. Substance use by Egyptian Youth: Current Patterns and Potential Avenues for Prevention

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Substance Use & Misuse, 50: 609-618 (2015) IF: 1.234

Background. Substance abuse in Egypt is a serious public health threat. Recent studies have demonstrated increases in the prevalence of the use of tobacco, illegal drugs, and over-the-counter drugs, particularly among youth.

Methods. We conducted focus groups with a total of 40 male and female youth participants, ages 12–14 and 15–18, recruited from two different areas (Cairo and Alexandria) in 2012. We investigated their knowledge and perceptions regarding current substance use, its sources, and promoting and protecting factors, broadly addressing the use of tobacco products, illicit and prescription drugs, inhaled substances such as glue and solvents, and alcohol.

Results. Our findings suggest that: (1) youth in Egypt had access to and were actively using substances encountered in similar research worldwide, including tobacco, alcohol, illicit drugs, glue sniffing, and pharmaceutical agents; (2) smoking cigarettes and using hashish were themost common practices, and Tramadol was the most commonly used pharmaceutical drug; (3) peer pressure from friends stood out as the most common reason to start and continue using substances, followed by adverse life events and having a parent or family member who used substances; (4) strict parenting, religiosity, and having non-user friends were among the factors perceived by youth to prevent substance use or help them quit using substances; (5)most youthswere aware of the adverse health effects of substance use.

Conclusion. These findings will inform the design of quantitative surveys aimed at estimating the prevalence of specific behaviors related to substance use among youth and potential avenues for prevention.

Keywords: Substance use; Youth; Drugs; Smoking; Focus groups.

1052. Preventing Hepatocellular Carcinoma in Egypt: Results of A Pilot Health Education Intervention Study

Doa'a A. Saleh, Sania Amr, Irene A. Jillson, Judy Huei‐yu Wang, Nancy Crowell and Christopher A. Loffredo

Bmc Res Notes, 8: 384-0 (2015)

Background: Hepatocellular carcinoma (HCC), one of the most fatal malignancies, is particularly prevalent in Egypt, where we previously found deficiencies in knowledge concerning HCC and its risk factors. Hepatitis B and C viral infections are highly prevalent in Egypt, pesticides are very commonly used, and diets are often contaminated by aflatoxin, especially in rural areas.
Methods: We conducted a study to pilot test a health education intervention addressing HCC, its risk factors, and its main modes of prevention. It included four health education modules: HCC, hepatitis viruses, pesticides and aflatoxin. We used a pre- and post-intervention set of questionnaires to assess knowledge gained by the participants.
Results: A total of 25 participants from a village in the Nile Delta area attended the health education session and completed the questionnaires. The education intervention significantly increased the participants' knowledge on HCC and its risk factors, particularly regarding the use of pesticides at home and aflatoxin contaminated foods (both $p < 0.05$). Overall, there was a 12 % increase in the number of participants who believed that HCC could be prevented, and they reported their intention to practice prevention for HCC risk factors.
Conclusions: We found that the education intervention we pilot tested was feasible and proved effective in increasing participants' knowledge. Future efforts should focus on implementing targeted education programs in high-risk populations in Egypt.
Keywords: Liver cancer; Prevention; Hepatitis C virus; Aflatoxin; Pesticides.

Dept. of Rheumatology

1053. Th1/Th2/Th17/Treg Cytokine Imbalance in Systemic Lupus Erythematosus (SLE) Patients: Correlation with Disease Activity

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Cytokine, 72(2): 146-153 (2015) IF: 2.664

Aim: Imbalance of T-helper-cell (TH) subsets (TH1/TH2/TH17) and regulatory T-cells (Tregs) is suggested to contribute to the pathogenesis of Systemic lupus erythematosus (SLE). Therefore, we evaluated their cytokine secretion profile in SLE patients and their possible association with disease activity.
Methods: Sixty SLE patients, 24 rheumatoid arthritis (RA) patients and 24 healthy volunteers were included in this study. Demographic, clinical, disease activity and serological data were prospectively assessed. Plasma cytokines levels of TH1 (IL-12, IFN-c), TH2 (IL-4, IL-6, IL-10), TH17 (IL-17, IL-23) and Treg (IL-10 and TGF-b) were measured by enzyme linked immunosorbent assays (ELISA).
Results: SLE patients were found to have significantly higher levels of IL-17 ($p < 0.001$), IL-6 ($p < 0.01$), IL-12 ($p < 0.001$) and IL-10 ($p < 0.05$) but comparable levels of IL-23 and IL-4 and slight reduction (but statistically insignificant) of TGF-b levels compared to controls. IL-6, IL-10 and IL-17 were significantly increased ($p < 0.05$) with disease activity. The RA group exhibited significantly higher levels of plasma IL-4 ($p < 0.01$), IL-6 ($p < 0.05$), IL-17 ($p < 0.001$), IL-23 ($p < 0.01$) and TGF-b ($p < 0.5$) and lower IFN-c ($p < 0.001$) and IL-10 ($p < 0.01$) than those of healthy subjects.
Conclusion: Our study showed a distinct profile of cytokine imbalance in SLE patients. Reduction in IFN-c (TH1) and TGF-b1 (Treg) with the elevation in IL-6 and IL-17 (TH17) could imply skewing of T-cells toward TH17 cells. Breaking TH17/Treg balance in peripheral blood may play an important role in the development of SLE and could be responsible for an increased pro-inflammatory response especially in the active form of the disease.
Keywords: Cytokines; Rheumatoid arthritis; Systemic lupus erythematosus; T-Regulatory cells; TH17

1054. Renal Outcomes Among Egyptian Lupus Nephritis Patients: A Retrospective Analysis of 135 Cases from A Single Centre

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Lupus, 24(3): 331-338 (2015) IF: 2.197

Objectives: The objective of this paper is to describe renal outcomes in a group of Egyptian patients with lupus nephritis and to identify variable prognostic factors.
Patients and methods: The records of 135 patients (129 females, six males) with biopsy-proven lupus nephritis seen between 1999 and 2011 at Kasr Al-Aini Hospital, Cairo University, were reviewed and included in a retrospective analysis. Biopsies were classified according to the WHO classification. Renal outcomes were defined according to the Renal Subcommittee of Renal Insufficiency of the American College of Rheumatology.
Results: The mean follow-up period was 55.64_25.68 (range 4–156) months. Thirty-nine patients (29.9%) developed an adverse final outcome. This composite outcome, defined as persistent elevation of serum creatinine ≥1.2 mg/dl, chronic renal insufficiency, end-stage renal disease or death, was seen in 12 (8.9%), seven (5.2%), three (2.2%) and 17 (12.6%) patients, respectively. The overall patient survival was 93.5% and 87.5% at five and 10 years, respectively. Factors associated with an adverse outcome included male gender ($p¼0.037$), hypertension at nephritis onset ($p¼0.001$), serum creatinine ≥1.2 mg/dl ($p<0.001$), urinary casts ($p¼0.006$), anticardiolipin antibodies ($p¼0.03$), class IV nephritis ($p<0.001$), hyaline thrombosis (0.003), glomerular sclerosis ($p¼0.002$), tubular atrophy($p<0.001$), interstitial fibrosis ($p<0.001$) and a higher chronicity index ($p¼0.006$). Time-dependent factors associated with an adverse outcome included failure to achieve remission within the first year, uncontrolled hypertension, persistently low C3 and development of flares ($p¼0.003$,<0.001, ¼ 0.004, ¼ 0.003, respectively).
Conclusion: The association of several adverse prognostic factors with the development of poor renal outcome has been confirmed in this study.
Keywords: Lupus nephritis; Outcome; Prognostic factors; Egyptians.

1055. Anti-C1q in Chronic Hepatitis C Virus Genotype Iv Infection: Association with Autoimmune Rheumatologic Manifestations

Samia H. Fadda, Iman H. Bassyouni, Ahmed Hamdy, Nermeen A. Foad and Iman E. Wali

Immunological Investigations, 44(1): 45-55 (2015) IF: 1.991

A growing body of evidence suggests that anti-complement-1q (anti-C1q) antibodies are elevated in a variety of autoimmune disease. Therefore, we investigated their prevalence and clinical significance in plasma of patients with hepatitis C virus (HCV) genotype IV in the presence and absence of autoimmune extra hepatic manifestations in comparison to normal healthy individuals. Plasma Anti-C1q Abs levels were assessed by an Enzyme Linked Immunosorbant Assay in 91 chronic HCV-infected patients (51 with and 40 without autoimmune rheumatic manifestations) and 40 healthy volunteers matched for age and gender. Epidemiological, clinical, immunochemical and virological data were prospectively collected. Positive Anti-C1q antibodies were more frequent among HCV patients with extra-hepatic autoimmune involvement, than those without and healthy control subjects. No significant correlations were found between Anti-C1q levels with either the liver activity or the fibrosis scores. In HCV-patients with autoimmune involvements, plasma Anti-C1q levels were significantly higher in patients with positive cryoglobulin, and in those with lymphoma than in those without. These Results were confirmed by multivariate analysis. Further large scale longitudinal studies are required to assess and clarify the significance and the pathogenic role of anti-C1q antibodies among HCV infected patients with positive cryoglobulinaemia and lymphoma.

Keywords: Anti-C1q antibodies; Hepatitis C virus; Cryoglobulinaemia; Lymphoma.

1056. Challenges and Opportunities in the Early Diagnosis and Optimal Management of Rheumatoid Arthritis in Africa and the Middle East

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International Journal of Rheumatic Diseases, 18(3).: 268-275 (2015) IF: 1.469

Early diagnosis and early initiation of disease-modifying antirheumatic drug (DMARD) therapy slow the progression of joint damage and decrease the morbidity and mortality associated with rheumatoid arthritis (RA). According to the European League Against Rheumatism (EULAR) guidelines, treatment should be initiated with methotrexate and addition of biological DMARDs such as tumour necrosis factor (TNF) inhibitors should be considered for RA patients who respond insufficiently to methotrexate and/or other synthetic DMARDs and have poor prognostic factors. Africa and the Middle East is a large geographical region with varying treatment practices and standards of care in RA. Existing data show that patients with RA in the region are often diagnosed late, present with active disease and often do not receive DMARDs early in the course of the disease. In this review, we discuss the value of early diagnosis and remission-targeted treatment for limiting joint damage and improving disease outcomes in RA, and the challenges in adopting these strategies in Africa and the Middle East. In addition, we propose an action plan to improve the overall long-term outlook for RA patients in the region.

Keywords: Africa and Middle East; Early diagnosis; Low disease activity; Remission; Rheumatoid arthritis.

1057. Subclinical Atherosclerosis in Systemic Lupus Erythematosus Patients and its Relationship to Disease Activity and Damage Indices

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Zeitschrift Fur Rheumatologie, 74: 529-532 (2015) IF: 0.613

Aim of The Work: To detect the incidence of premature atherosclerosis in systemic lupus erythematosus (SLE) patients and to study its association with disease activity and damage indices.

Patients And Methods: This study involved 50 adult female SLE patients with mean age 26.24 ± 8.63 years and mean disease duration 3.44 ± 4.01 years. The control group comprised 25 healthy adult females. All patients were subjected to a detailed clinical examination and laboratory investigations, and full case history was recorded. Assessment of disease activity was performed according to the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) and disease damage was assessed using the Systemic Lupus International Collaborating Clinics (SLICC) score. B mode ultrasound was used to measure the intima-media wall thickness (IMT) and detect the presence of carotid plaques.

Results: In 15 patients (30%), positive ultrasonographic findings represented by a significant increase in IMT (>0.9 mm) could be shown; plaques were found in 3 of these patients (6%). A significant difference was found between SLE patients and controls in terms of IMT (P< 0.0001). On subgrouping the SLE patients according to their IMT, there was a significant difference between those with thickened and normal IMT in terms of SLEDAI (P<0.0001) and SLICC (p=0.035) scores.

Conclusion: Subclinical atherosclerosis is frequent in SLE patients. Increased disease activity and damage are associated with the occurrence of premature atherosclerosis.

Keywords: Cardiovascular disease; Carotid artery; Common; systemic lupus international collaborating clinics; Systemic lupus erythematosus disease activity index; Intima–media thickness.

1058. Subclinical Sacroiliitis in Brucellosis. Clinical Presentation and MRI Findings

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Zeitschrift Für Rheumatologie, 74: 240-245 (2015) IF: 0.613

Purpose: The aim of this work was to detect subclinical sacroiliac joint involvement in patients with brucellosis and study their clinical and laboratory features.

Patients and Methods: The study included 100 brucellosis patients being followed-up in the Gastroenterology and Hepatology Unit, Theodor Bilharz Research Institute and Cairo University outpatient clinics. A thorough history, physical

examination, routine laboratory tests, and abdominal ultrasound were obtained for all patients. Extended rheumatological examination was performed including clinical testing for sacroiliitis and enthesitis. None of the patients reported a history of back pain or any symptoms suggestive of sacroiliitis during the course of the infection. Plain x-ray and MRI scan of the sacroiliac joints were performed for all patients.
Results: Asymptomatic sacroiliitis was present in 24% of the brucellosis patients; none of the patients had tenderness over their spine with preserved lumbar spine mobility. Sacroiliitis was mainly unilateral being bilateral in 20.83%. There was an obvious relationship with animal contact and occupation of the patients. Osteoarticular involvement was common (67%) including arthralgias, arthritis, myalgias, spondylitis, enthesitis and bursitis, being clearly higher in those with sacroiliitis. The MRI scan showed blurring of the margins in 66.67%, widening in 25%, narrowing in 54.17%, erosions in 20.83%, and sclerosis in 12.5%.
Conclusion: Osteoarticular manifestations of brucellosis are prevalent and subclinical sacroiliitis is evident, a finding that may classify these patients as having brucellar spondyloarthropathy (BSA). Referring brucellosis patients for rheumatological assessment has the advantage of early assessment of asymptomatic cases with sacroiliitis which is commonly overlooked.
Keywords: Spondyloarthropathies; Subclinical sacroiliitis; Autoimmune diseases; Rheumatology; Spondylarthritis.

1059. Serum Sclerostin Level Among Egyptian Rheumatoid Arthritis Patients: Relation to Disease Activity, Bone Mineral Density and Radiological Grading

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Acta Reumatol Port, 40: 268-274 (2015) IF: 0.286

Introduction: Bone loss in rheumatoid arthritis is caused by increased bone resorption without an increment in bone formation. The Wnt pathway is important in the control of bone formation through the re - gulation of osteoblast activity. Sclerostin is an important regulator of the Wnt pathway by blocking Wnt bindin g to its receptor and thereby inhibiting bone formation. Aim: This study aimed to assess the serum sclerostin level in a group of Egyptian rheumatoid arthritis patients and to correlate its level with bone mineral density, disease activity and radiological grading.
Methods: Forty rheumatoid arthritis patients (mean age 48.9 ± 11.6 years, disease duration 8 ± 6.4 years) and 40 age and sex matched apparently healthy subjects were included. Serum sclerostin level was measured using enzyme linked immunosorbent assay. Plain radiographs of hands and feet and dual-energy x-ray absorptiometry test were done for all patients.
Results: No significant difference was found between rheumatoid arthritis patients and healthy controls regarding the mean value of sclerostin level. Postmenopausal healthy women had higher levels of sclerostin than premenopausal healthy women. Serum sclerostin had significantly positive correlations with the age of onset and weight of rheumatoid arthritis patients and negative correlation with erythrocyte sedimentation rate. No correlation was encountered between sclerostin le vel and bone mineral density, disease activity or radiographic grading.
Conclusion: For better clarification of the role of scleros - tin on bone mass in rheumatoid arthritis, larger sample size is needed. More studies on serum sclerostin le vels among different grades of RA activity are encouraged.
Keywords: Sclerostin; Bone loss; Rheumatoid arthritis.

1060. Clinical Significance of Matrix Metalloproteinase-3 in Systemic Lupus Erythematosus Patients: A Potential Biomarker for Disease Activity and Damage

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Acta Reumatol Port, 40: 145-149 (2015) IF: 0.286

Objectives: To assess the serum level of matrix metalloproteinase-3 (MMP-3) in systemic lupus erythematosus (SLE) patients and correlate it with clinical manifestations, laboratory findings, disease activity and damage.
Methods: Forty-two female SLE patients were included in the present study. Full history taking, thorough examination and investigations were performed. Disease activity was assessed using the SLE Disease Activity Index (SLEDAI). Furthermore, Systemic Lupus International Collaborating Clinics /American College of Rheumatology damage index (SLICC/ACR DI) was also assessed. Renal biopsy was done in those with lupus nephritis. Thirty age and sex matched subjects were included as control. Serum MMP-3 was measured by ELISA.
Results: The mean serum MMP-3 level in SLE patients was significantly higher (80.9±45.8 ng/ml) than in the control (10.01±2.6 ng/ml) ($p < 0.0001$). The level in patients with arthritis, nephritis or hematologic disorders were significantly higher than in those without ($p<0.0001$, $p=0.02$ and $p=0.04$ respectively). The MMP-3 was significantly different among the subclasses of renal biopsy ($p=0.01$) being higher in those with class IV (137.5±45.6 ng/ml). It significantly correlated with the SLEDAI, SLICC, white blood cells and platelet counts ($r=0.37$, $p=0.02$; $r=0.36$, $p=0.02$; $r=0.32$, p 0.04 and $r=0.38$, $p=0.01$ respectively). On linear regression analysis with age, disease duration and body mass index as independent factors, the SLEDAI and SLICC were not significant predictors.
Conclusion: Serum MMP-3 was found to be high in SLE patients and associated with arthritis, nephritis and hematological manifestations. MMP-3 correlated with disease activity and damage making it a possible biomarker, and its measure of considerable interest, related to the potential therapeutic responses and disease outcome.
Keywords: MMP-3; Arthritis; Nephritis; SLE; SLEDAI; SLICC.

1061. Impact of Smoking on Disease Outcome in Ankylosing Spondylitis Patients

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The Egyptian Rheumatologist, 37(4): 185-189 (2015)

Introduction Smoking was associated with an earlier onset of back pain, higher disease activity, worse functional status and quality of life in patients with AS. Aim of the work To detect the relationship between smoking and disease outcome measures in AS patients.
Patients and Methods A total of 30 patients with disease duration of 9.6 ± 5.8 years. They were divided into 2 groups

according to their smoking status, the mean age of non-smokers 11/30 patients (36.7%) and smokers 19/30 patients (63.3%) was (29 ± 8.4 years vs 34.9 ± 8.1 years respectively) and their disease duration was (6.6 ± 3.9 years vs 8.3 ± 6.1 years respectively).
Results The smokers showed longer morning stiffness duration ($p = 0.02$), less spinal mobility ($p = 0.02$) and less chest expansion ($p = 0.02$). Also they had a higher disease activity index (BASDAI) ($p = 0.03$) and poorer quality of life index (ASQL) ($p = 0.03$), while there was no statistically significant difference between the 2 groups regarding the physical activity index (BASFI) ($p = 0.07$). There was a positive significant correlation between smoking duration and age ($p < 0.001$, $r = 0.9$). Disease duration was found to be a significant independent risk factor for the decrease of chest expansion ($p = 0.04$).
Conclusion This study proved some of the adverse effects of smoking on ankylosing spondylitis patients mainly on the domains of disease activity and quality of life. So we recommend the cessation of smoking in every AS patient as part of the treatment plan.
Keywords: Ankylosing spondylitis; Smoking; BASDI; BASFI; ASQL.

1062. Clinical Significance of Serum TNFa and -308 G/A Promoter Polymorphism in Rheumatoid Arthritis

Tamer A. Gheita, Ghada S. Azkalany, Wafaa Gaber and Abeer Mohey

The Egyptian Rheumatologist, 37(2): 49-54 (2015)

Aim of the work: To evaluate the clinical significance of serum levels of tumor necrosis factor alpha (TNFa) and -308 G/A promoter polymorphism in rheumatoid arthritis (RA) patients.
Patients and Methods: We studied 43 RA patients and 30 controls. Demographic, clinical and serological data were prospectively evaluated. Disease activity score (DAS28) and the Health Assessment Questionnaire (HAQ) were assessed. Serum TNF-a level was measured and promoter (-308 G/A) genotyped.
Results: Serum TNF-a level was significantly higher in the RA patients compared to controls ($p = 0.036$) and was significantly higher in those with AA promoter polymorphism who had a significantly younger age at disease onset. In the multivariate analysis, disease duration would predict the TNFa level ($p = 0.006$) while age at disease onset, DAS28 and HAQ would predict the TNFa polymorphism ($p = 0.004$, $p = 0.04$ and $p = 0.03$ respectively). A significant negative correlation was present between TNFa level with age ($p = 0.001$) and age at disease onset ($p < 0.0001$) while in those with GA genotype a significant negative correlation was present with DAS28 ($r = 0.66$, $p = 0.038$).
Conclusion: Serum TNFa levels and -308 G/A promoter polymorphism were higher in RA patients than in controls and could be predicted by disease activity and HAQ.
Keywords: Rheumatoid arthritis; TNF-A -308 G/A promoter polymorphism; Tumor necrosis factor (TNFA)

1063. Predictive Potential of the Disease Activity Index and C-Reactive Protein for Infection in Systemic Lupus Erythematosus Patients

Sahar Fakhreldin, Sherif M. Gamal and Abeer S. Saad

The Egyptian Rheumatologist, 37: 171-175 (2015)

Aim of the work: The aim of the present work was to determine the prevalence of infections in a cohort of Egyptian Systemic lupus erythematosus (SLE) patients and to describe their sites and relation to clinical characteristics, laboratory features and disease activity.
Patients and Methods: Medical records of 250 Egyptian SLE patients attending the Rheumatology department, Cairo University hospitals were reviewed retrospectively for the clinical and laboratory features, SLE disease activity index (SLEDAI) and treatment received.
Results: Infection was found in 119 (47.6%) patients, with bacterial infection being the commonest in 99 (83%) followed by fungal infection in 30 (25%) and viral infection in 22 (18.5%). The commonest site of infection was the skin (37%) followed by the urinary tract (31%) and chest (19%). In SLE patients with infection there was a significant increase in the frequency of malar rash ($p = 0.001$), photosensitivity ($p = 0.01$), oral ulcers ($p < 0.001$), alopecia ($p = 0.017$) and Raynauds ($p = 0.017$) compared to those without infection. Pulmonary and neuropsychiatric manifestations were also significantly increased in those with infection ($p=0.001$ and $p < 0.001$). A significantly higher number of patients with infection were receiving pulse steroids ($p=0.016$), cyclophosphamide ($p =0.011$) and a higher oral prednisolone dose ($p = 0.03$). The SLEDAI was significantly higher (26.02 ± 8.23) in those with infection compared to those without (15.57 ± 6.43) ($p < 0.001$). C-reactive protein (CRP) was significantly higher in those with infection ($p < 0.001$). On performing a logistic regression analysis, only SLEDAI ($p<0.001$) and CRP ($p < 0.001$) were significant predictors of infection.
Conclusion: Disease activity and CRP are important predictors for infection in SLE patients.
Keywords: Systemic lupus erythematosus; Infection; Sledai; Egyptian.

1064. Clinical Significance of Bone Mineral Density in Ankylosing Spondylitis Patients: Relation to Disease Activity and Physical Function

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The Egyptian Rheumatologist, 37: 35-39 (2015)

Aim of the work: The aim of this work was to assess the bone mineral density (BMD) in Ankylosing Spondylitis (AS) patients and to investigate its relation with clinical and laboratory parameters, imaging of sacroiliac joints, disease activity and physical function.
Patients and Methods: 44 patients were recruited from the Rheumatology outpatient clinic of the Kasr El-Aini Hospital, their mean age was 33 ±8.7 years. Twenty age and sex matched subjects were included as controls. Dual energy X-ray absorptiometry (DEXA) was performed for the patients and control. Disease activity and physical function were assessed using the Bath AS Disease Activity Index (BASDAI) and Bath AS Functional Index (BASFI), respectively.
Results: The T-scores of the spine, hip and forearm were lower in patients compared to controls. Low BMD was more found among patients with chronic sacroiliitis. There were significant negative correlations between chin to chest and occiput to wall distance and BMD at the hip and forearm (both $p<0.05$). The BMD at the spine showed a significant correlation with the BASDAI ($p= 0.008$) and BASFI ($p= 0.03$). There was no correlation between BMD at any site and patients' age, disease duration, inflammatory back pain duration, modified Scho¨ ber's test, fingerto- floor test and laboratory parameters.

Conclusion: The BMD was remarkably decreased at all measurement sites in AS patients. The BMD at the spine significantly negatively correlated with the disease activity and physical function. Bone loss in AS can be explained partly by the role of inflammatory mediators and partly as a consequence of reduced physical activity.
Keywords: Ankylosing spondylitis; DEXA; BMD; Osteoporosis; BASDAI; BASFI.

1065. Pattern of Primary Vasculitis with Peripheral Ischemic Manifestations: Report of A Case Series and Role of Vascular Surgery

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Current Rheumatology Reviews, 10: 126-130 (2015)

Aim of the work: The aim of the present work was to study the role of vascular surgery in the management of primary vasculitis patients with peripheral ischemic manifestations.
Patients and Methods: Ten primary vasculitis patients with peripheral ischemic manifestations were studied and reviewed for the diagnosis, clinical manifestations, investigations, treatment options and role of vascular surgery. The Birmingham Vasculitis Activity Score (BVAS) was recorded.
Results: Giant cell arteritis was present in one patient; granulomatosis with polyangiitis in 5, essential cryoglobulinemic vasculitis in 3 and 1 (child) had Henoch–Schönlein purpura. They showed the following peripheral vascular manifestations: intermittent claudications, Raynauds, deep venous thrombosis and thrombophelebitis in 10% each; digital ulceration and trophic changes in 20% while acrocyanosis and dry gangrene were present in 30%. Renal involvement was present in 60% of patients. The mean BVAS was 11.5±6.57 at initial presentation. The disease activity remarkably improved over the disease course in all patients to be at their last visit (2.6±2.22) (p=0.002). Regarding the vascular surgery role in their management, in addition to their medical treatment, 40% required an additional surgical intervention. Two had a minor amputation of the toes; one performed thoracoscopic cervical sympathectomy and another needed tibial angioplasty.
Conclusion: Primary vasculitis patients presenting with peripheral ischemic manifestations require surgical attention. Their management is essentially medical and individualized to the diagnosis and presenting symptoms. Endovascular treatment may offer a safe and less invasive approach in high surgical risk patients. Sympathectomy is of high therapeutic potential in those with severe pain and trophic changes.
Keywords: Peripheral ischemia; Vasculitis; Vascular surgical procedures.

1066. Serum Cystatin C, Urinary Neutrophil Gelatinase-Associated Lipocalin and N-Acetyl-Beta-D-Glucosaminidase in Juvenile and Adult Patients with Systemic Lupus Erythematosus: Correlation with Clinical Manifestations, Disease Activity and Damage

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Saudi J. of Kidney Diseases and Transplantation, 26: 497-506 (2015)

Lupus nephritis (LN) is a potentially devastating outcome of systemic lupus erythematosus (SLE). It is important to identify reliable, non-invasive Methods to assess the kidneys in patients with SLE. The aim of the study was to measure the level of novel markers of renal involvement in these patients and assess their correlation with disease activity and damage. Sixtyone patients with SLE (33 adults and 28 juvenile) were included in the study. Fifty-two ageand sex-matched healthy individuals served as controls. Full history taking, thorough clinical examination and laboratory investigations were performed and disease activity and damage were assessed for all patients. Renal bio-markers including serum cystatin C, urinary neutrophil gelatinase-associated lipocalin (UNGAL) and N-acetyl-beta-D-glucosaminidase (UNAG) were assessed in patients and controls. There was a significant increase in serum cystatin C, UNGAL and UNAG levels in the adult SLE patients compared with controls (P = 0.000, P = 0.013 and P = 0.018, respectively); serum cystatin C and UNGAL levels were higher in the juvenile patients compared with controls (P = 0.038 and P = 0.000, respectively). Serum cystatin C significantly correlated with the damage index, renal biopsy class and negatively with the serum albumin; UNGAL correlated with albuminuria and the level of nephritis and UNAG negatively correlated with serum albumin level. Our study suggests that serum cystatin C, UNGAL and UNAG are important markers of LN and both cystatin C and UNAG would help in predicting the renal biopsy class.
Keywords: UNGAL; UNAG; cystatin C; SLE; Sledai; Juvenile; Severity.

Dept. of Surgery

1067. The Ascending Aorta as An Exit Site for A Through-and-through Wire in TEVAR

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J. of Endovascular Therapy, 22(6): 934-937 (2015) IF: 3.353

Purpose: To describe a technique for trans–ascending aorta through-and-through guidewire placement for thoracic endograft advancement and deployment.
Case Report: A 55-year-old man presented with a symptomatic pseudoaneurysm of the distal aortic arch after aortic coarctation open repair. He had also undergone mechanical aortic valve replacement. Planned were a left-sided carotid-subclavian bypass and a thoracic endovascular aortic repair with a chimney graft to the left common carotid artery. After carotid-subclavian bypass, efforts to retrograde cannulate the aortic arch and advance the thoracic endograft were unsuccessful. Because of the mechanical heart valve, no transapical approach could be used. Access to the ascending aorta was gained through a midline sternotomy. A through-and-through wire was positioned from the ascending aorta to femoral artery, which provided the required stability for advancement of the thoracic endograft. Sixmonth computed tomography documented patent endografts and carotid-subclavian bypass and no evidence of endoleak.
Conclusion: A trans–ascending aorta through-and-through guidewire is a feasible adjunct that can be added to the endovascular armamentarium when transcardiac or transbrachial approaches are impossible or ineffective.
Keywords: Aortic arch aneurysm; Aortic coarctation pseudoaneurysm; Stent-graft; thoracic aorta; Thoracic

endovascular aortic repair; Through-and-through guidewire; Vascular access.

1068. Can Sonography Distinguish A Supraorbital Notch from A Foramen?

Ravi K. Garg, Kenneth S. Lee, Sarah C. Kohn, Mustafa K. Baskaya and Ahmed M. Afifi

Journal of Ultrasound in Medicine, 34: 0-0 (2015) IF: 1.535

Diagnostic tools for evaluating the supraorbital rim in preparation for nerve decompression surgery in patients with chronic headaches are currently limited. We evaluated the use of sonography to diagnose the presence of a supraorbital notch or foramen in 11 cadaver orbits. Sonographic findings were assessed by dissecting cadaver orbits to determine whether a notch or foramen was present. Sonography correctly diagnosed the presence of a supraorbital notch in 7 of 7 cases and correctly diagnosed a supraorbital foramen in 4 of 4 cases. We found that sonography had 100% sensitivity in diagnosing a supraorbital notch and foramen. This tool may therefore be helpful in characterizing the supraorbital rim preoperatively and may influence the decision to use a transpalpebral or endoscopic approach for supraorbital nerve decompression as well as the decision to use local or general anesthesia.

Keywords: Head and neck ultrasound; Headache surgery; Musculoskeletal ultrasound; Supraorbital foramen; Supraorbital notch; Supraorbital rim.

1069. Is it Safe to Omit Neoadjuvant Chemo-radiation in Mucinous Rectal Carcinoma?

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International Journal of Surgery, 23: 120-127 (2015) IF: 1.531

Background: Purpose was to compare the oncologic outcome of neoadjuvant chemoradiotherapy (nCXRT) versus postoperative chemoradiotherapy (pCXRT) for locally advanced mucinous rectal carcinoma (MRC) having curative total mesorectal excision (TME).

Methods: One hundred and two patients with MRC (T3-4 and/or N1-2) of middle and lower third rectum were included. Patients were non-randomly divided into 2 groups: Group A (N ¼ 61) had nCXRT followed by total mesorectal excision (TME) after 8e11 weeks and Group B (N ¼ 41) had TME followed by pCXRT. Primary end points were disease free survival (DFS) and overall survival (OS). Secondary endpoints were tumor regression grade (TRG) and morbidity.

Results: In group A, 29 patients had partial response after nCXRT, 26 patients showed no change and 6 patients had progression. TME was done in 55 patients in group A and 41 patients in group B. Six patients in group A turned to be unresectable after nCXRT due to progressive disease. Mean follow-up was 53 months. In patients received TME, Four-year DFS was higher in group A compared to group B yet not statistically significant (DFS 0.69 [95% CI 0.54e0.85] vs. 0.67 [95% CI 0.47e0.87]; P ¼ 0.39). However, actuarial 4 years OS was comparable in both groups (0.72 [95% CI 0.59e0.91] vs. 0.70 [95% CI 0.55e0.88]; P ¼ 0.46 in groups A and B respectively). Multivariate analysis revealed that age <40, and N2 were risk factors of recurrence.

Conclusion: Whilst accepting that the numbers are small, there was no statistical difference in outcome (DFS and OS) between patients receiving pre- or post-operative chemo-radiotherapy. In most MRC patients, tumor regression is not significant after nCXRT and there is considerable possibility of tumor progression during nCXRT treatment. So, nCXRT should be used with close follow-up in MRC for early detection of possible tumor progression. If the patient cannot tolerate nCXRT, it is possibly safe to do surgery followedby pCXRT. Prospective study is needed to study the value of nCXRT in MRC

Keywords: Mucinous carcinoma; Rectum; Neoadjuvant chemoradiation; Total mesorectal excision.

1070. A Novel Classification of Frontal Bone Fractures: the Prognostic Significance of Vertical Fracture Trajectory and Skull Base Extension

Ravi K. Garg, Ahmed M. Afifi, Jennifer Gassner, Michael J. Hartman, Glen Leverson, Timothy W. King, Michael L. Bentz and Lindell R. Gentry

Journal of Plastic, Reconstructive & Aesthetic Surgery, 68: 645-653 (2015) IF: 1.421

Purpose: The broad spectrum of frontal bone fractures, including those with orbital and skull base extension, is poorly understood. We propose a novel classification scheme for frontal bone fractures.

Methods: Maxillofacial CT scans of trauma patients were reviewed over a five year period, and frontal bone fractures were classified: Type 1: Frontal sinus fracture without vertical extension. Type 2: Vertical fracture through the orbit without frontal sinus involvement. Type 3: Vertical fracture through the frontal sinus without orbit involvement. Type 4: Vertical fracture through the frontal sinus and ipsilateral orbit. Type 5: Vertical fracture through the frontal sinus and contralateral or bilateral orbits. We also identified the depth of skull base extension, and performed a chart review to identify associated complications.

Results: 149 frontal bone fractures, including 51 non-vertical frontal sinus (Type 1, 34.2%) and 98 vertical (Types 2-5, 65.8%) fractures were identified. Vertical fractures penetrated the middle or posterior cranial fossa significantly more often than non-vertical fractures (62.2 v. 15.7%, $p = 0.0001$) and had a significantly higher mortality rate (18.4 v. 0%, $p < 0.05$). Vertical fractures with frontal sinus and orbital extension, and fractures that penetrated the middle or posterior cranial fossa had the strongest association with intracranial injuries, optic neuropathy, disability, and death ($p < 0.05$).

Conclusions: Vertical frontal bone fractures carry a worse prognosis than frontal bone fractures without a vertical pattern. In addition, vertical fractures with extension into the frontal sinus and orbit, or with extension into the middle or posterior cranial fossa have the highest complication rate and mortality.

Keywords: Craniomaxillofacial trauma; Frontal bone fracture; Frontal sinus fracture; Orbital fracture; Skull base trauma.

1071. Evaluating Current Functional Airway Surgery During Rhinoplasty: A Survey of the American Society of Plastic Surgeons

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Aesthetic Plastic Surgery, 39: (2015) IF: 0.956

Background Despite numerous reports outlining technical modifications in rhinoplasty, few publications discuss the importance of the perioperative assessment and surgical management of the nasal airway. This study's objective is to increase awareness regarding the functional aspects of rhinoplasty surgery and to encourage surgeons to incorporate functional airway management into their rhinoplasty practice.
Methods A web-based survey was given to all members of the American Society of Plastic Surgeons (ASPS). Survey Results were analysed to determine if surgeons' experience, annual rhinoplasty volume, or postgraduate training affected their
Results. The relationship between surgeon satisfaction with the outcome of the airway management and the frequency of performing an inferior turbinate reduction was investigated. Results Of the 4,383 listed ASPS members, 671 (21 %) completed the web-based survey. Surgeons who performed a preoperative internal nasal exam were more satisfied with their Results ($p = 0.016$) and report lower rates of postoperative nasal airway obstruction ($p = 0.054$). Inferior turbinate reduction did correlate to postoperative satisfaction with the nasal airway ($p < 0.001$). Overall, 85 % of respondents were satisfied with their management of the nasal airway and 87 % of respondents agreed that there is a need for more instructional courses on this topic.
Conclusion There is considerable variation in the Results and techniques of assessment and treatment of the nasal airway. Rhinoplasty volume and inferior turbinate reduction are associated with surgeon satisfaction of management of the nasal airway. Functional airway considerations should be incorporated into routine rhinoplasty training, assessment, and treatment.
Keywords: Functional airway rhinoplasty nose plastic surgeon.

Dept. of Urology Dept

1072. The Impact of Low-dose Carcinogens and Environmental Disruptors on Tissue Invasion and Metastasis

Josiah Ochieng, Gladys N. Nangami, Olugbemiga Ogunkua, Isabelle R.Miousse, Igor Koturbash, Valerie Odero-Marah, Lisa McCawley, Pratima Nangia-Makker, Nuzhat Ahmed, Yunus Luqmani, Zhenbang Chen, Silvana Papagerakis, Gregory T.Wolf, Chenfang Dong, Binhua P.Zhou, Dustin G. Brown, Annamaria Colacci, Roslida A.Hamid, Chiara Mondello, Jayadev Raju, Elizabeth P. Ryan, Jordan Woodrick, Ivana Scovassi, Neetu Singh, Monica Vaccari, Rabindra Roy, Stefano Forte, Lorenzo Memeo, Hosni K.Salem, Amedeo Amedei, Rabeah Al-Temaimi, Fahd Al-Mulla,William H.Bisson and Sakina E. Eltom

Carcinogenesis, 36: 128-159 (2015) IF: 5.334

The purpose of this review is to stimulate new ideas regarding low-dose environmental mixtures and carcinogens and their potential to promote invasion and metastasis. Whereas a number of chapters in this review are devoted to the role of lowdose environmental mixtures and carcinogens in the promotion of invasion and metastasis in specific tumors such as breast and prostate, the overarching theme is the role of low-dose carcinogens in the progression of cancer stem cells. It is becoming clearer that cancer stem cells in a tumor are the ones that assume invasive properties and colonize distant organs. Therefore,low-dose contaminants that trigger epithelial–mesenchymal transition, for example, in these cells are of particular interest in this review. This we hope will lead to the collaboration between scientists who have dedicated their professional life to the study of carcinogens and those whose interests are exclusively in the arena of tissue invasion and metastasis.
Keywords: Environmental disruptors; Tissue invasion; Metastasis.

1073. Metabolic Reprogramming and Dysregulated Metabolism: Cause, Consequence and/or Enabler of Environmental Carcinogenesis?

R. Brooks Robey, Judith Weisz, Nancy Kuemmerle, Anna C. Salzberg, Arthur Berg, Dustin G. Brown, Laura Kubik, Roberta Palorini, Fahd Al-Mulla, Rabeah Al-Temaimi, Annamaria Colacci, Chiara Mondello, Jayadev Raju, Jordan Woodrick, A. Ivana Scovassi, Neetu Singh, Monica Vaccari, Rabindra Roy, Stefano Forte, Lorenzo Memeo, Hosni K. Salem, Amedeo Amedei, Roslida A. Hamid, Graeme P. Williams, Leroy Lowe, Joel Meyer, Francis L. Martin, William H. Bisson, Ferdinando Chiaradonna and Elizabeth P. Ryan

Carcinogenesis, 36: 203-231 (2015) IF: 5.334

Environmental contributions to cancer development are widely accepted, but only a fraction of all pertinent exposures have probably been identified. Traditional toxicological approaches to the problem have largely focused on the effects of individual agents at singular endpoints. As such, they have incompletely addressed both the pro-carcinogenic contributions of environmentally relevant low-dose chemical mixtures and the fact that exposures can influence multiple cancer-associated endpoints over varying timescales. Of these endpoints, dysregulated metabolism is one of the most common and recognizable features of cancer, but its specific roles in exposure-associated cancer development remain poorly understood. Most studies have focused on discrete aspects of cancer metabolism and have incompletely considered both its dynamic integrated nature and the complex controlling influences of substrate availability, external trophic signals and environmental conditions. Emerging high throughput approaches to environmental risk assessment also do not directly address the metabolic causes or consequences of changes in gene expression. As such, there is a compelling need to establish common or complementary frameworks for further exploration that experimentally and conceptually consider the gestalt of cancer metabolism and its causal relationships to both carcinogenesis and the development of other cancer hallmarks. A literature review to identify environmentally relevant exposures unambiguously linked to both cancer development and dysregulated metabolism suggests major gaps in our understanding of exposure-associated carcinogenesis and metabolic reprogramming. Although limited evidence exists to support primary causal roles for metabolism in carcinogenesis, the universality of altered cancer metabolism underscores its fundamental biological importance, and multiple pleiomorphic, even dichotomous, roles for metabolism in promoting,

antagonizing or otherwise enabling the development and selection of cancer are suggested.
Keywords: Dysregulated metabolism; Environmental carcinogenesis.

1074. Assessing the Carcinogenic Potential of Low-dose Exposures to Chemical Mixtures in the Environment: the Challenge Ahead

Hosni Khairy Salem Barghash

Carcinogenesis, 36: 254-296 (2015) IF: 5.334

Lifestyle factors are responsible for a considerable portion of cancer incidence worldwide, but credible estimates from the World Health Organization and the International Agency for Research on Cancer (IARC) suggest that the fraction of cancers attributable to toxic environmental exposures is between 7% and 19%. To explore the hypothesis that low-dose exposures to mixtures of chemicals in the environment may be combining to contribute to environmental carcinogenesis, we reviewed 11 hallmark phenotypes of cancer, multiple priority target sites for disruption in each area and prototypical chemicaldisruptors for all targets, this included dose-response characterizations, evidence of low-dose effects and cross-hallmark effects for all targets and chemicals. In total, 85 examples of chemicals were reviewed for actions on key pathways/ mechanisms related to carcinogenesis. Only 15% (13/85) were found to have evidence of a dose-response threshold, whereas 59% (50/85) exerted low-dose effects. No dose-response information was found for the remaining 26% (22/85). Our analysis suggests that the cumulative effects of individual (non-carcinogenic) chemicals acting on different pathways, and a variety of related systems, organs, tissues and cells could plausibly conspire to produce carcinogenic synergies. Additional basic research on carcinogenesis and research focused on low-dose effects of chemical mixtures needs to be rigorously pursued before the merits of this hypothesis can be further advanced. However, the structure of the World Health Organization International Programme on Chemical Safety 'Mode of Action' framework should be revisited as it has inherent weaknesses that are not fully aligned with our current understanding of cancer biology.
Keywords: Carcinogenic potential; Low-dose exposures; Chemical mixtures.

1075. Environmental Immune Disruptors, Inflammation and Cancer Risk

Patricia A.Thompson, Mahin Khatami, Carolyn J.Baglole, Jun Sun, Shelley Harris, Eun-Yi Moon, Fahd Al-Mulla, Rabeah Al-Temaimi, Dustin Brown, Annamaria Colacci, Chiara Mondello, Jayadev Raju, Elizabeth Ryan, Jordan Woodrick, Ivana Scovassi, Neetu Singh, Monica Vaccari, Rabindra Roy, Stefano Forte, Lorenzo Memeo, Hosni K.Salem, Amedeo Amedei, Roslida A.Hamid, Leroy Lowe Tiziana Guarnieri and William H.Bisson

Carcinogenesis, 36: 232-253 (2015) IF: 5.334

An emerging area in environmental toxicology is the role that chemicals and chemical mixtures have on the cells of the human immune system. This is an important area of research that has been most widely pursued in relation to autoimmune diseases and allergy/asthma as opposed to cancer causation. This is despite the well-recognized role that innate and adaptive immunity play as essential factors in tumorigenesis. Here, we review the role that the innate immune cells of inflammatory responses play in tumorigenesis. Focus is placed on the molecules and pathways that have been mechanistically linked with tumor-associated inflammation. Within the context of chemically induced disturbances in immune function as co-factors in carcinogenesis, the evidence linking environmental toxicant exposures with perturbation in the balance between pro- and anti-inflammatory responses is reviewed. Reported effects of bisphenol A, atrazine, phthalates and other common toxicants on molecular and cellular targets involved in tumor-associated inflammation (e.g. cyclooxygenase/prostaglandin E2, nuclear factor kappa B, nitric oxide synthesis, cytokines and chemokines) are presented as example chemically mediated target molecule perturbations relevant to cancer. Commentary on areas of additional research including the need for innovation and integration of systems biology approaches to the study of environmental exposures and cancer causation are presented.
Keywords: Environmental; Immune disruptors; Inflammation; Cancer risk.

1076. Disruptive Environmental Chemicals and Cellular Mechanisms that Confer Resistance to Cell Death

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Carcinogenesis, 36: 89-110 (2015) IF: 5.334

Cell death is a process of dying within biological cells that are ceasing to function. This process is essential in regulating organism development, tissue homeostasis, and to eliminate cells in the body that are irreparably damaged. In general, dysfunction in normal cellular death is tightly linked to cancer progression. Specifically, the up-regulation of prosurvival factors, including oncogenic factors and antiapoptotic signaling pathways, and the down-regulation of proapoptotic factors, including tumor suppressive factors, confers resistance to cell death in tumor cells, which supports the emergence of a fully immortalized cellular phenotype. This review considers the potential relevance of ubiquitous environmental chemical exposures that have been shown to disrupt key pathways and mechanisms associated with this sort of dysfunction. Specifically, bisphenol A, chlorothalonil, dibutyl phthalate, dichlorvos, lindane, linuron, methoxychlor and oxyfluorfen are discussed as prototypical chemical disruptors; as their effects relate to resistance to cell death, as constituents within environmental mixtures and as potential contributors to environmental carcinogenesis.
Keywords: Environmental chemicals; Cellular mechanisms; Resistance to cell death.

1077. Chemical Compounds from Anthropogenic Environment and Immune Evasion Mechanisms: Potential Interactions

Julia Kravchenko, Emanuela Corsini, Marc A.Williams, William Decker, Masoud H.Manjili, Takemi Otsuki, Neetu Singh, Faha Al-Mulla, Rabeah Al-Temaimi, Amedeo Amedei, Anna Maria Colacci, Monica Vaccari, Chiara Mondello, A. Ivana Scovassi, Jayadev Raju, Roslida A.Hamid, Lorenzo Memeo, Stefano Forte, Rabindra Roy, Jordan Woodrick, Hosni K.Salem, Elizabeth P. Ryan, Dustin G. Brown, William H.Bisson, Leroy Lowe and H.Kim Lyerly

Carcinogenesis, 36: 1-17 (2015) IF: 5.334

An increasing number of studies suggest an important role of host immunity as a barrier to tumor formation and progression. Complex mechanisms and multiple pathways are involved in evading innate and adaptive immune responses, with a broad spectrum of chemicals displaying the potential to adversely influence immunosurveillance. The evaluation of the cumulative effects of low-dose exposures from the occupational and natural environment, especially if multiple chemicals target the same gene(s) or pathway(s), is a challenge. We reviewed common environmental chemicals and discussed their potential effects on immunosurveillance. Our overarching objective was to review related signaling pathways influencing immune surveillance such as the pathways involving PI3K/Akt, chemokines, TGF-β, FAK, IGF-1, HIF-1α, IL-6, IL-1α, CTLA-4 and PD-1/PDL-1 could individually or collectively impact immunosurveillance. A number of chemicals that are common in the anthropogenic environment such as fungicides (maneb, fluoxastrobin and pyroclostrobin), herbicides (atrazine), insecticides (pyridaben and azamethiphos), the components of personal care products (triclosan and bisphenol A) and diethylhexylphthalate with pathways critical to tumor immunosurveillance. At this time, these chemicals are not recognized as human carcinogens; however, it is known that they these chemicalscan simultaneously persist in the environment and appear to have some potential interfere with the host immune response, therefore potentially contributing to promotion interacting with of immune evasion mechanisms, and promoting subsequent tumor growth and progression.

Keywords: Immune evasion; Chemical compounds; Enviroment.

1078. Assessing the Carcinogenic Potential of Lowdose Exposures to Chemical Mixtures in the Environment: Focus on the Cancer Hallmark of Tumor Angiogenesis

Zhiwei Hu, Samira A.Brooks, Valérian Dormoy, Chia-Wen Hsu, Hsue-Yin Hsu, Liang-Tzung Lin, Thierry Massfelder, W. Kimryn Rathmell, Menghang Xia, Fahd Al-Mulla, Rabeah Al-Temaimi, Amedeo Amedei, Dustin G. Brown, Kalan R.Prudhomme, Annamaria Colacci, Roslida A.Hamid, Chiara Mondello, Jayadev Raju, Elizabeth P. Ryan, Jordan Woodrick, A. Ivana Scovassi, Neetu Singh, Monica Vaccari, Rabindra Roy, Stefano Forte, Lorenzo Memeo, Hosni K.Salem, Leroy Lowe, Lasse Jensen, William H.Bisson and Nicole Kleinstreuer

Carcinogenesis, 36: 184-202 (2015) IF: 5.334

One of the important 'hallmarks' of cancer is angiogenesis, which is the process of formation of new blood vessels that are necessary for tumor expansion, invasion and metastasis. Under normal physiological conditions, angiogenesis is well balanced and controlled by endogenous proangiogenic factors and antiangiogenic factors. However, factors produced by cancer cells, cancer stem cells and other cell types in the tumor stroma can disrupt the balance so that the tumor microenvironment favors tumor angiogenesis. These factors include vascular endothelial growth factor, endothelial tissue factor and other membrane bound receptors that mediate multiple intracellular signaling pathways that contribute to tumor angiogenesis. Though environmental exposures to certain chemicals have been found to initiate and promote tumor development, the role of these exposures (particularly to low doses of multiple substances), is largely unknown in relation to tumor angiogenesis. This review summarizes the evidence of the role of environmental chemical bioactivity and exposure in tumor angiogenesis and carcinogenesis. We identify a number of ubiquitous (prototypical) chemicals with disruptive potential that may warrant further investigation given their selectivity for high-throughput screening assay targets associated with proangiogenic pathways. We also consider the cross-hallmark relationships of a number of important angiogenic pathway targets with other cancer hallmarks and we make recommendations for future research. Understanding of the role of low-dose exposure of chemicals with disruptive potential could help us refine our approach to cancer risk assessment, and may ultimately aid in preventing cancer by reducing or eliminating exposures to synergistic mixtures of chemicals with carcinogenic potential.

Keywords: He cancer hallmark; Tumor angiogenesis.

1079. The Potential for Chemical Mixtures from the Environment to Enable the Cancer Hallmark of Sustained Proliferative Signalling

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Carcinogenesis, 36: 38-60 (2015) IF: 5.334

The aim of this work is to review current knowledge relating the established cancer hallmark, sustained cell proliferation to the existence of chemicals present as low dose mixtures in the environment. Normal cell proliferation is under tight control, i.e. cells respond to a signal to proliferate, and although most cells continue to proliferate into adult life, the multiplication ceases once the stimulatory signal disappears or if the cells are exposed to growth inhibitory signals. Under such circumstances, normal cells remain quiescent until they are stimulated to resume further proliferation. In contrast, tumour cells are unable to halt proliferation, either when subjected to growth inhibitory signals or in the absence of growth stimulatory signals. Environmental chemicals with carcinogenic potential may cause sustained cell proliferation by interfering with some cell proliferation control mechanisms committing cells to an indefinite proliferative span.

Keywords: Chemical mixtures; Sustained proliferative signalling.

1080. Causes of Genome Instability: the Effect of Low Dose Chemical Exposures in Modern Society

Sabine A.S.Langie, Gudrun Koppen, Daniel Desaulniers, Fahd Al-Mulla, Rabeah Al-Temaimi, Amedeo Amedei, Amaya Azqueta, William H.Bisson, Dustin Brown, Gunnar Brunborg, Amelia K.Charles, Tao Chen, Annamaria Colacci, Firouz Darroudi, Stefano Forte, Laetitia Gonzalez, Roslida A.Hamid, Lisbeth E.Knudsen, Luc Leyns, Adela Lopez de Cerain Salsamendi, Lorenzo Memeo, Chiara Mondello, Carmel Mothersill, Ann-Karin Olsen, Sofia Pavanello, Jayadev Raju, Emilio Rojas, Rabindra Roy, Elizabeth Ryan, Patricia Ostrosky-Wegman, Hosni K.Salem, Ivana Scovassi, Neetu Singh, Monica Vaccari, Frederik J.Van Schooten, Mahara Valverde, Jordan Woodrick, Luoping Zhang, Nik van Larebeke, Micheline Kirsch-Volders and Andrew R.Collins

Carcinogenesis, 36: 61-88 (2015) IF: 5.334

Genome instability is a prerequisite for the development of cancer. It occurs when genome maintenance systems fail to safeguard the genome's integrity, whether as a consequence of inherited defects or induced via exposure to environmental agents (chemicals, biological agents and radiation). Thus, genome instability can be defined as an enhanced tendency for the genome to acquire mutations; ranging from changes to the nucleotide sequence to chromosomal gain, rearrangements or loss. This review raises the hypothesis that in addition to known human carcinogens, exposure to low dose of other chemicals present in our modern society could contribute to carcinogenesis by indirectly affecting genome stability. The selected chemicals with their mechanisms of action proposed to indirectly contribute to genome instability are: heavy metals (DNA repair, epigenetic modification, DNA damage signaling, telomere length), acrylamide (DNA repair, chromosome segregation), bisphenol A (epigenetic modification, DNA damage signaling, mitochondrial function, chromosome segregation), benomyl (chromosome segregation), quinones (epigenetic modification) and nano-sized particles (epigenetic pathways, mitochondrial function, chromosome segregation, telomere length). The purpose of this review is to describe the crucial aspects of genome instability, to outline the ways in which environmental chemicals can affect this cancer hallmark and to identify candidate chemicals for further study. The overall aim is to make scientists aware of the increasing need to unravel the underlying mechanisms via which chemicals at low doses can induce genome instability and thus promote carcinogenesis.

Keywords: Genome instability; Low dose; Chemical exposures.

1081. Disruptive Chemicals, Senescence and Immortality

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Carcinogenesis, 36: 19-37 (2015) IF: 5.334

Carcinogenesis is thought to be a multistep process, with clonal evolution playing a central role in the process. Clonal evolution involves the repeated 'selection and succession' of rare variant cells that acquire a growth advantage over the remaining cell population through the acquisition of 'driver mutations' enabling a selective advantage in a particular micro-environment. Clonal selection is the driving force behind tumorigenesis and possesses three basic requirements: (i) effective competitive proliferation of the variant clone when compared with its neighboring cells, (ii) acquisition of an indefinite capacity for self-renewal, and (iii) establishment of sufficiently high levels of genetic and epigenetic variability to permit the emergence of rare variants. However, several questions regarding the process of clonal evolution remain. Which cellular processes initiate carcinogenesis in the first place? To what extent are environmental carcinogens responsible for the initiation of clonal evolution? What are the roles of genotoxic and non-genotoxic carcinogens in carcinogenesis?What are the underlying mechanisms responsible for chemical carcinogen-induced cellular immortality? Here, we explore the possible mechanisms of cellular immortalization, the contribution of immortalization to tumorigenesis and the mechanisms by which chemical carcinogens may contribute to these processes.

Keywords: Disruptive chemicals; Senescence; Immortality.

1082. The Effect of Environmental Chemicals on the Tumor Microenvironment

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Carcinogenesis, 36: 160-183 (2015) IF: 5.334

Potentially carcinogenic compounds may cause cancer through direct DNA damage or through indirect cellular or physiological effects. To study possible carcinogens, the fields of endocrinology, genetics, epigenetics, medicine, environmental health, toxicology, pharmacology and oncology must be considered. Disruptive chemicals may also contribute to multiple stages of tumor development through effects on the tumor microenvironment. In turn, the tumor microenvironment consists of a complex interaction among blood vessels that feed the tumor, the extracellular matrix that provides structural and biochemical support, signaling molecules that send messages and soluble factors such as cytokines.

The tumor microenvironment also consists of many host cellular effectors including multipotent stromal cells/mesenchymal stem cells, fibroblasts, endothelial cell precursors, antigen-presenting cells, lymphocytes and innate immune cells. Carcinogens can influence the tumor microenvironment through effects on epithelial cells, the most common origin of cancer, as well as on stromal cells, extracellular matrix components and immune cells. Here, we review how environmental exposures can perturb the tumor microenvironment.

We suggest a role for disrupting chemicals such as nickel chloride, Bisphenol A, butyltins, methylmercury and paraquat as well as more traditional carcinogens, such as radiation, and pharmaceuticals, such as diabetes medications, in the disruption of the tumor microenvironment. Further studies interrogating the role of chemicals and their mixtures in dose-dependent effects on the tumor microenvironment could have important general mechanistic implications for the etiology and prevention of tumorigenesis.

Keywords: Environmental chemicals; Tumor microenvironment.

1083. Current use of Imaging after Primary Treatment of Prostate Cancer

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The Journal of Urology, 194: 98-104 (2015) IF: 4.36

Purpose: Data are limited on imaging after primary treatment of localized prostate cancer.

Materials and Methods: We identified 8,435 men newly diagnosed with nonmetastatic prostate cancer in 1995 to 2012 who were enrolled in CaPSURE™ . Patients were followed after primary treatment with radical prostatectomy, cryosurgery, brachytherapy, external beam radiation therapy or androgen deprivation therapy. We assessed the use of bone scan, computerized tomography and magnetic resonance imaging after primary treatment. Factors associated with posttreatment outcomes (number of imaging tests, and time to first imaging and salvage treatment) were evaluated with multivariate Poisson regression and Cox proportional hazards regression.

Results: The incidence of posttreatment bone scan, computerized tomography and magnetic resonance imaging was 20% or less. Last posttreatment log(prostate specific antigen) was associated with multiple posttreatment imaging.

Management by radical prostatectomy, cryosurgery, external beam radiation therapy or brachytherapy vs androgen deprivation therapy was associated with a lower likelihood of posttreatment imaging. Of patients who were imaged after treatment 25% with radical prostatectomy and 9% with radiation underwent imaging before prostate specific antigen failure. The 5-year salvage treatment-free survival rate was 81%. Positive findings on posttreatment imaging were associated with a higher risk of salvage treatment.

Conclusions: Patients treated with androgen deprivation therapy for localized disease were most likely to be imaged, primarily by bone scan. Men treated with other therapies were less likely to be imaged and tended to undergo computerized tomography. Imaging may add value to posttreatment prostate specific antigen monitoring to identify disease recurrence and progression. Further studies are needed to establish guidelines for the optimal frequency and imaging type to monitor the treatment response.

Keywords: Diagnostic imaging; Disease progression; Prostate-specific antigen; Prostatic neoplasms; Salvage therapy.

1084. Untreated Gleason Grade Progression on Serial Biopsies During Prostate Cancer Active Surveillance: Clinical Course and Pathological Outcomes

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The Journal of Urology, 194: 85-90 (2015) IF: 4.36

Purpose: We describe the outcomes of patients with low risk localized prostate cancer who were upgraded on a surveillance biopsy while on active surveillance and evaluated whether delayed treatment was associated with adverse outcome.

Materials and Methods: We included men in the study with lower risk disease managed initially with active surveillance and upgraded to Gleason score 3+4 or greater. Patient demographics and disease characteristics were compared. Kaplan-Meier curve was used to estimate the treatment-free probability stratified by initial upgrade (3+4 vs 4+3 or greater), Cox regression analysis was used to examine factors associated with treatment and multivariate logistic regression analysis was used to evaluate the factors associated with adverse outcome at surgery.

Results: The final cohort comprised 219 men, with 150 (68%) upgraded to 3+4 and 69 (32%) to 4+3 or greater. Median time to upgrade was 23 months (IQR 11-49). A total of 163 men (74%) sought treatment, the majority (69%) with radical prostatectomy. The treatment-free survival rate at 5 years was 22% for 3+4 and 10% for 4+3 or greater upgrade. Upgrade to 4+3 or greater, higher prostate specific antigen density at diagnosis and shorter time to initial upgrade were associated with treatment. At surgical pathology 34% of cancers were downgraded while 6% were upgraded. Cancer volume at initial upgrade was associated with adverse pathological outcome at surgery (OR 3.33, 95% CI 1.19-9.29, p=0.02).

Conclusions: After Gleason score upgrade most patients elected treatment with radical prostatectomy. Among men who deferred definitive intervention, few experienced additional upgrading. At radical prostatectomy only 6% of cases were upgraded further and only tumor volume at initial upgrade was significantly associated with adverse pathological outcome.

Keywords: Disease progression; Neoplasm grading; Prostatic neoplasms; Watchful waiting.

1085. Ureteric Stents Vs Percutaneous Nephrostomy for Initial Urinary Drainage in Children with Obstructive Anuria and Acute Renal Failure Due to Ureteric Calculi: A Prospective, Randomised Study

Mohammed S. ElSheemy, Ahmed M. Shouman, Ahmed I. Shoukry, Ahmed ElShenoufy, Waseem Aboulela, Kareem Daw, Ahmed A. Hussein, Hany A. Morsi and Hesham Badawy

Bju International, 115: 473-479 (2015) IF: 3.533

Objectives To compare percutaneous nephrostomy (PCN) tube vs JJ ureteric stenting as the initial urinary drainage method in children with obstructive calcular anuria (OCA) and post-renal acute renal failure (ARF) due to bilateral ureteric calculi, to identify the selection criteria for the initial urinary drainage method that will improve urinary drainage, decrease complications and facilitate the subsequent definitive clearance of stones, as this comparison is lacking in the literature.

Patients and Methods A series of 90 children aged =12 years presenting with OCA and ARF due to bilateral ureteric calculi were included from March 2011 to September 2013 at Cairo University Pediatric Hospital in this randomised comparative study. Patients with grade 0–1 hydronephrosis, fever or pyonephrosis were excluded. No patient had any contraindication for either method of drainage. Stable patients (or patients stabilised by dialysis) were randomised (non-blinded, block randomisation, sealed envelope method) into PCN-tube or bilateral JJ-stent groups (45 patients for each group). Initial urinary drainage was performed under general anaesthesia and fluoroscopic guidance. We used 4.8–6 F JJ stents or 6–8 F PCN tubes. The primary outcomes were the safety and efficacy of both groups for the recovery of renal functions. Both groups were compared for operative and imaging times, complications, and the period required for a return to normal serum creatinine levels. The secondary outcomes included the number of subsequent interventions needed for clearance of stones. Additional analysis was done for factors affecting outcome within each group.
Results All presented patients completed the study with intention-to-treat analysis. There was no significant difference between the PCN-tube and JJ-stent groups for the operative and imaging times, period for return to a normal creatinine level and failure of insertion. There were significantly more complications in the PCN-tube group. The stone size (>2cm) was the only factor affecting the rates of mucosal complications, operative time and failure of insertion in the JJ-stent group. The degree of hydronephrosis significantly affected the operative time for PCN-tube insertion. Grade 2 hydronephrosis was associated with all cases of insertion failure in the PCN-tube group. The total number of subsequent interventions needed to clear stones was significantly higher in the PCN-tube group, especially in patients with bilateral stones destined for chemolytic dissolution (alkalinisation) or extracorporeal shockwave lithotripsy (ESWL).
Conclusion We recommend the use of JJ stents for initial urinary drainage for stones that will be subsequently treated with chemolytic dissolution or ESWL, as this will lower the total number of subsequent interventions needed to clear the stones. This is also true for stones destined for ureteroscopy (URS), as JJ-stent insertion will facilitate subsequent URS due to previous ureteric stenting. Mild hydronephrosis will prolong the operative time for PCN-tube insertion and may increase the incidence of insertion failure. We recommend the use of PCN tube if the stone size is >2cm, as there was a greater risk of possible iatrogenic ureteric injury during stenting with these larger ureteric stones in addition to prolongation of operative time with an increased incidence of failure.
Keywords: Anuria; Children; Nephrostomy; JJ stents; Urinary calculi.

1086. Rebuttal to Drs. Markovina and Michalski

Ahmed A. Hussein and Matthew R. Cooperberg

Brachytherapy, 14: 761-762 (2015) IF: 2.758

The paramount tenet of evidence-based medicine is that clinical decisions be based on the best available evidence. Although this may seem an obvious statement, for a complex clinical scenario like newly diagnosed prostate cancer, assessing quality of evidence is far from straightforward, and the devil lies very much in the details.
Keywords: Cost effectiveness; Localized; Prostate cancer; Treatment; Surgery.

1087. Point: Surgery Is the Most Cost-Effective Option for Prostate Cancer Needing Treatment

Ahmed A. Hussein and Matthew R. Cooperberg

Brachytherapy, 14: 753-755 (2015) IF: 2.758

For most men with localized prostate cancer (PCa), options include active surveillance, radical prostatectomy (RP), and radiation therapy (RT) in the form of brachytherapy (BT) and/or one of a variety of external beam radiation therapy (EBRT) techniques. Treatment should be tailored to each patient, considering the patient's overall health, life expectancy, and the disease risk (prostate specific antigen [PSA], tumor extent, and grade). Clinicians' skill and experience, and the patients' preference to trade-off potential benefits, side effects, and complications are other crucial factors guiding the treatment decision. Men must face treatment decisions in the face of a relative dearth of high-quality evidence comparing these options. Indeed, the effectiveness of the management strategies for localized PCa was considered among the highest initial national priorities for comparative effectiveness research by the Institute of Medicine in 2009. Although randomized controlled trials (RCTs) are still sorely lacking, however, in recent years, increasingly high-quality retrospective evidence regarding oncologic efficacy, side effects, and health-related quality of life (HRQOL), and cost has become available to inform these decisions.
Keywords: Cost effectiveness; Localized; Prostate cancer; Treatment; Surgery.

1088. Combination of Vitamin E and Clomiphene Citrate in Treating Patients with Idiopathic Oligoasthenozoospermia, is it Worth? A Prospective Randomized Trial

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Andrology, 3: 864-867 (2015) IF: 2.298

The most common cause of male infertility is idiopathic oligoasthenozoospermia. Empirical medical treatment for idiopathic male infertility is still a controversial issue. The aim of this study was to evaluate any possible effects of combining vitamin E as antioxidant and clomiphene citrate as antiestrogen on spermatozoa concentration and motility in comparison to give either of medications alone in patients with idiopathic oligoasthenozoospermia. This is a comparative prospective randomized study. Ninety patients with idio- pathic oligoasthenozoospermia were randomized into equally three groups: Group A: received vitamin E (400 mg/day) for 6 months. Group B: received clomiphene citrate (25 mg daily) for 6 months. Group C: received combination of both drugs in the same doses for 6 months. All patients were subjected to the following: history taking, general and genital examination, semen analysis, serum FSH, total testosterone, and scrotal duplex. Semen examination was performed according to the guidelines of (WHO, 2010), at the start of treatment and was repeated after 3 months and after 6 months of treatment. Regarding vitamin E group, there was insignifi- cant increase in mean sperm concentration after 6 months of treatment in comparison to baseline. On the other hand, there was a significant improvement of mean sperm concentration in the other two groups after 6 months of treatment, with more

significance in combination therapy group (p = 0.001). The mean total sperm motility has improved in all patients groups, in comparison to base- line, with more significance in combination therapy group. In vitamin E group, it was 28.07 9.65% (p = 0.000). For those in clomi- phene citrate group, was 33.33 14.10% (p = 0.003) and 40.50 17.54% (p = 0.000) in combination therapy group. Combining antioxidant and anti-estrogen therapy is a valid option for the treatment of a selected group of men with unexplained isolated oligoasthenozoospermia.

Keywords: Semen analysis; Sperm count; Sperm motility; 5 sperm quality parameters; Subfertility; Treatment.

1089. Holmium Laser Enucleation of the Prostate Versus Bipolar Resection of the Prostate: A Prospective Randomized Study. "Pros and Cons"

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Urology, 86: 1037-1041 (2015) IF: 2.188

Objective To compare the safety, efficacy, and applicability of holmium laser enucleation of the prostate (HoLEP) and bipolar transurethral resection of the prostate (TURPb) procedures, whereas the secondary objective is to find out the advantages and disadvantages of each.

Patients and Methods A prospective randomized study included 120 patients with benign prostatic hyperplasia that required intervention. The patients were randomized in 2 equal groups: group A managed by HoLEP and group B managed by TURPb. The mean age, International Prostate Symptom Score, maximum urine flow, residual urine, operative time, blood loss, resected volume, catheterization time, hospital stay, and costs were compared.

Results Both groups were comparable regarding the preoperative parameters. The mean operative time was statistically significantly longer in the HoLEP group. The drop in the hemoglobin level was statistically significantly in group B. The mean resected prostatic volume was 61.167 g in the HoLEP group and 58.8 g in the TURPb group. The catheter was removed after 24 hours in 51 and 36 patients in groups A and B, respectively. The International Prostate Symptom Score at 1 and 12 months and the maximum urine flow at 12 months postoperatively were found to be better in the HoLEP group than in the bipolar group, and this difference was found to be statistically significant.

Conclusion Although the HoLEP technique is associated with a relatively longer operative time, it has proved to be effective in treating large prostates with minimal morbidity, better hemostasis, less blood loss, and better voiding pattern than TURPb after a 12-month follow-up.

1090. Understanding Cognitive Performance During Robot-assisted Surgery

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Urology, 86: 751-757 (2015) IF: 2.188

Objective To understand cognitive function of an expert surgeon in various surgical scenarios while performing robot-assisted surgery.

Materials and Methods: In an Internal Review Board approved study, National Aeronautics and Space Administration-Task Load Index (NASA-TLX) questionnaire with surgical field notes were simultaneously completed. A wireless electroencephalography (EEG) headset was used to monitor brain activity during all procedures. Three key portions were evaluated: lysis of adhesions, extended lymph node dissection, and urethro-vesical anastomosis (UVA). Cognitive metrics extracted were distraction, mental workload, and mental state.

Results: In evaluating lysis of adhesions, mental state (EEG) was associated with better performance (NASA-TLX). Utilizing more mental resources resulted in better performance as self-reported. Outcomes of lysis were highly dependent on cognitive function and decision-making skills. In evaluating extended lymph node dissection, there was a negative correlation between distraction level (EEG) and mental demand, physical demand and effort (NASA-TLX). Similar to lysis of adhesion, utilizing more mental resources resulted in better performance (NASA-TLX). Lastly, with UVA, workload (EEG) negatively correlated with mental and temporal demand and was associated with better performance (NASA-TLX). The EEG recorded workload as seen here was a combination of both cognitive performance (finding solution) and motor workload (execution). Majority of workload was contributed by motor workload of an expert surgeon. During UVA, muscle memory and motor skills of expert are keys to completing the UVA.

Conclusion: Cognitive analysis shows that expert surgeons utilized different mental resources based on their need.

Keywords: Cognition; Robot-assisted; Surgery; Operative; Robotic; Evaluation.

1091. Outcome of Mini-Percutaneous Nephrolithotomy for Renal Stones in Infants and Preschool Children: A Prospective Study

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Urology, 86: 1019-1026 (2015) IF: 2.188

Objective To assess the safety and efficacy of Miniperc for renal stones in preschool-age patients. To the best of our knowledge, this may be the first prospective study on this subject. Reports on Miniperc are still few and mostly retrospective using a sheath size of =18Fr, which is still relatively large for young children.

Patients and Methods From January 2012 to May 2013, Miniperc was performed for 26 children (=6 years old) with renal calculi <5cm through 14Fr sheath using a 9.5Fr semirigid ureteroscope with Holmium:yttrium-aluminum-garnet laser lithotripsy. Effects of different factors on operative time, complications, and stone-free rate (SFR) were compared using chi-square, Fischer exact, or Mann-Whitney tests as appropriate using SPSS v15.0.

Results Primary SFR, SFR after retreatment, and SFR after auxiliary extracorporeal shock wave lithotripsy (ESWL) were 77%, 85%, and 92%, respectively. Retreatment rate was 8%. Auxiliary ESWL was done in 11%. Complications were bleeding (8%), hematuria and blood transfusion (4%), renal pelvis perforation (4%), leakage (8%), and fever (15%). Operative time was significantly prolonged in multiple (>2) stones (P=.006), calyceal stones (P=.002), or stone size =30mm (P=.022). SFR was

significantly lower in children with >2 stones (P=.028) and increased stone size =30mm (P=.014).
Conclusion Miniperc is a safe and effective minimally invasive procedure for pediatric renal stones using 14Fr access sheath. SFR was significantly lower in children with >2 stones or increased stone size=30mm. This was overcome by retreatment and auxiliary ESWL.
Keywords: Mini-percutaneous nephrolithotomy; Renal stones; Infants; Preschool children.

1092. Surgeon-Tailored Polypropylene Mesh as A Tension-free Vaginal Tape-obturator Versus Original TVT-O for the Treatment of Female Stress Urinary Incontinence: A Long-term Comparative Study

Mohammed S. ElSheemy, Hesham Fathy, Hussein A. Hussein, Ragheb Elsergany and Eman A. Hussein

International Urogynecology Journal, 26: 1533-1540 (2015) IF: 1.961

Introduction and hypothesis The objective of the study was to compare the safety and efficacy of surgeon-tailored polypropylene mesh (STM) through tension-free vaginal tape-obturator (TVT-O) versus original TVT-O in the treatment of stress urinary incontinence (SUI) aiming to decrease the cost of treatment. This is important in developing countries due to limited health care resources.
Methods A retrospective cohort study was done at the Urology and Gynecology Departments (dual-center), Cairo University from May 2007 to June 2010. Women evaluated by cough stress test, Stress and Urge Incontinence and Quality of Life Questionnaire (SUIQQ), maximum flow rate (Qmax), and abdominal leak point pressure (ALPP) with follow-up for at least 48 months were included. Patients with post-void residual urine>100 ml, bladder capacity<300 ml, or impaired compliance were excluded.
The effect of different factors on outcome was compared between both groups pre- and postoperatively using the paired t, Wilcoxon signed rank, McNemar, chi-square, Fisher's exact, independent t, or Mann–Whitney tests.
Results STM and TVT-O were inserted in 79 and 66 women, respectively. Intrinsic sphincter deficiency, ALPP, previous surgeries, associated urgency, urgency urinary incontinence (UUI), and prolapse were comparable in both groups. Operative duration was longer in STM by 10 min. No significant difference was found between both groups in complications (p=0.462), cure (p=0.654), and different indices of SUIQQ. In STM, 74 (93 %) were cured and 3 (4 %) improved, while SUI persisted in 2 (2 %) patients. In TVT-O, 59 (89 %) were cured and 4 (6 %) improved, while failure was detected in 3 (4 %) patients.
Conclusions The 5-year outcome is comparable between STM and TVT-O. Furthermore, STM is more economical due to our resterilizable modified helical passers and the cheap polypropylene mesh.
Keywords: Female stress urinary incontinence; Surgeon-tailored mesh; Polypropylene mesh; TVT-O; TOT; Cost.

1093. Low-cost Transobturator Vaginal Tape Inside-Out Procedure for the Treatment of Female Stress Urinary Incontinence Using Ordinary Polypropylene Mesh

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International Urogynecology Journal, 26: 577-584 (2015) IF: 1.961

Introduction and hypothesis The aim of this study is to describe the use of ordinary polypropylene mesh and our modified helical passers through a transobturator vaginal tape inside-out technique (TVT-O) as a low-cost alternative to available commercial kits in the treatment of stress urinary incontinence (SUI) with evaluation of its long-term safety and efficacy. This is important in developing countries due to limited health care resources.
Methods Tailored (11×1.5 cm) polypropylene tape was inserted in 59 women from June 2006 to June 2009 at the Urology Department, Cairo University Hospitals as an open prospective study. SUI was diagnosed by positive cough stress test (CST) and abdominal leak point pressure (ALPP). Patients with post-void residual urine (PVRU) >100 ml, bladder capacity<300 ml, or neurological lesions were excluded. The Stress and Urge Incontinence and Quality of Life Questionnaire (SUIQQ), urodynamic parameters, and other variables were compared pre- versus postoperatively with paired t, Wilcoxon signed rank, McNemar, or chi-square tests.
Results The mean age was 47.47±8.52 years. Twenty-one (35.6 %) patients had intrinsic sphincter deficiency (ISD). The mean operative time was 21.22±4.26 min (15–30). Procedures for prolapse were done in four (6 %) patients. Complications were vaginal discharge (6 %), dyspareunia (1 %), groin pain (20 %), urinary tract infection (3 %), obstructive symptoms (1 %), accidental cut of polypropylene suture (1 %) and felt subcutaneous polypropylene sutures (3 %). We had no cases of erosions or de novo urgency. SUIQQ indices improved significantly, while urodynamic parameters showed no significant difference postoperatively. Of the patients, 54 (91 %) were cured and 3 (5 %) improved, while failure was detected in 2 (3 %) patients.
Conclusions Our technique is safe with excellent 5-year Results. It should be considered as a low-cost alternative to available commercial kits in the treatment of SUI mainly for public health systems with few financial resources.
Keywords: Female stress urinary incontinence; Polypropylene Mesh; TVT-O TOT; Helical passers; Cost.

1094. Transurethral Holmium Laser Cystolithotripsy in Children: Single Center Experience

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Journal of Endourology, 29: 661-665 (2015) IF: 1.708

Purpose: To evaluate prospectively safety and efficacy of transurethral cystolithotripsy (CL) in children using holmium:yttrium-aluminum-garnet (Ho:YAG) laser. This is important in developing countries, because the risk of bladder stones in children is high. Open cystolithotomy (OC) was the main line of treatment. A gradual shift has occurred toward

endourologic treatment after improvement of pediatric endoscopes.
Patients and Methods: Between January 2010 and May 2011, 33 children <12 years old with vesical calculi were treated. Children with orthopedic deformities, urethral stricture, history of urethral operations or bladder reconstruction, or stones >4cm were excluded. Cystoscopies were performed under general anesthesia using 9 to 11F cystoscopes. Stones were completely fragmented under video guidance. Ho:YAG was applied at a power of 30W.
Results: Median age was 3 years (0.5–11). Mean stone size was 2.02±0.82cm (1–4cm). Mean operative duration was 31.21 minutes (20–50). All children were discharged within 24 hours. A single operative session was performed for each patient. No complications were detected. After a mean follow-up of 16.87±4.08 months, all children were stone free, without development of any urethral stricture or recurrence of stones. Operative duration was significantly longer in stones >20mm (P<0.001).
Conclusion: Ho:YAG laser CL is a safe and successful minimally invasive treatment option for bladder stones in children. Success rate was 100% without development of any complications or recurrence.
Keywords: Transurethral; Holmium laser; Cystolithotripsy; Children; Bladder stones.

1095. Surgeon-Tailored Polypropylene Mesh as A Needleless Single-incision Sling Versus TVT-O for the Treatment of Female Stress Urinary Incontinence: A Comparative Study

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International Urology and Nephrology, 47: 937-944 (2015) IF: 1.519

Purpose To compare safety and efficacy of surgeon-tailored polypropylene mesh through needleless single-incision technique (STM) versus tension-free vaginal tape-obturator (TVT-O) aiming to decrease cost of treatment of stress urinary incontinence (SUI). This is important in developing countries due to limited healthcare resources.
Patients and Methods A retrospective cohort study was done at Urology and Gynecology Departments (dual-center), Cairo University, from January 2011 to August 2013. STM was inserted in 72 females, while TVT-O was inserted in 48 females. Females evaluated by cough stress test, stress and urge incontinence quality of life questionnaire (SUIQQ), Q max and abdominal leak point pressure (ALPP) were included. Different factors were compared between both groups using paired t, Wilcoxon's signed rank, McNemar, Chi-square, Fisher's exact, independent t or Mann–Whitney tests.
Results Age, parity, previous surgeries, ALPP, intrinsic sphincter deficiency (ISD), associated prolapse and associated prolapse repair were comparable in both groups. No significant difference was found between both groups in postoperative complications (except groin pain), cure, SUIQQ indices improvement and Q max decline. In total, 65 (90 %) cured, 6 (8 %) improved while failure was detected in one (1 %) patient in STM group, while 42 (87 %) cured, 4 (8 %) improved and failure was detected in two (4 %) patients in TVT-O group. Presence of ISD (p = 0.565), urgency (p = 0.496), UUI (p = 0.531), previous surgeries (p = 0.345), associated urogenital prolapse (p = 0.218) or associated prolapse repair (p = 0.592) did not lead to any significant difference in outcome between both groups. Cost of mesh decreased from US$500 (TVT-O) to US$10 (STM).
Conclusion Outcome of STM is comparable to TVT-O. Furthermore, STM is more economic
Keywords: Female stress urinary incontinence; Surgeon-tailored mesh; Polypropylene; Contasure-needleless; Single incision; TVT-O.

1096. Use of Surgeon-Tailored Polypropylene Mesh as A Needle-Less Single-Incision Sling for Treating Female Stress Urinary Incontinence: Preliminary Results

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Arab Journal of Urology, 13: 191-198 (2015)

Objective To evaluate the safety and efficacy of a procedure using surgeon-tailored polypropylene mesh (STM) through a needle-less single-incision technique for treating stress urinary incontinence (SUI), aiming to decrease the cost of treatment, which is important in developing countries.
Patients and Methods In all, 43 women diagnosed using a cough stress test were treated from January 2011 to June 2013 at the Urology and Gynaecology Departments (dual-centre), Cairo University Hospitals. Previous surgery was not a contra-indication. Patients with a postvoid residual urine volume of >100 mL, a bladder capacity of <300 mL, impaired compliance or neurological lesions were excluded. The Stress and Urge incontinence Quality of life Questionnaire (SUIQQ) and urodynamic variables were compared before and after surgery. The variables were compared between the baseline and postoperative follow-up values using a paired t-test, a Wilcoxon signed-rank test or McNemar's test.
Results The mean age was 42.7 years and 20 (47%) patients had associated urgency UI (UUI), whilst 21 (49%) had intrinsic sphincter deficiency. The median (range) operative duration was 14 (5–35) min. There were no complications during surgery. The mean (SD, range) follow-up was 28.1 (5.1, 18–36) months. Postoperative complications were vaginal discharge (5%), failure of wound healing (5%), dyspareunia (5%) and UTI (5%). The sling was removed in one case. SUI, UUI and quality-of-life indices improved significantly after surgery. There were no significant differences in pressure-flow studies before and after surgery. In all, 38 (88%) patients were cured, four (9%) improved and in one only the treatment failed (2%).
Conclusion This technique is simple, safe, effective, reproducible and economical for treating SUI. The STM was easy to insert in a short operation.
Keywords: Female; Stress urinary incontinence; Polypropylene mesh; Single incision.

1097. Predictive Factors of Bladder Outlet Obstruction Following the Tension-Free Vaginal Tape Obturator (TVTO) Procedure in Females Treated Surgically for Stress Urinary Incontinence

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Objectives: To identify patients at risk for postoperative outlet obstruction after the tension-free vaginal tape obturator (TVTO) procedure in order to allow for better counseling and possible treatment alternatives.
Subjects and Methods: This prospective study was carried out on 85 women who underwent the TVTO procedure for treatment of stress urinary incontinence (SUI). Preoperatively, a detailed medical history was taken from all patients, and all were subjected to physical examination, routine labs, abdominal and pelvic ultrasound and urodynamic studies (cystometry and assessment of the detrusor leak point pressure (DLPP), abdominal leak point pressure (ALPP), pressure flow and post-void residual (PVR) urine). The TVTO procedure was carried out by the same surgeon in all cases. Postoperative voiding dysfunction in this study was defined as the subjective feeling of difficult voiding, a weak stream and/or incomplete evacuation, and a PVR urine volume >100 ml, a urine flow rate <15 ml/s or urinary retention on examination. The following risk factors for postoperative bladder outlet obstruction were evaluated: age, history of previous incontinence surgery, parity, menopausal status, type of SUI, grade of SUI, residual urine, Qmax and PdetQmax. Statistical analysis was done using the SPSS package version 1.5.
Results: 75% of our patients were cured. Denovo urgency or urge incontinence developed in 5.8% of the patients. Voiding dysfunction according to our definition developed in 24.7% of the patients. On multivariate analysis, Qmax was the only risk factor that could predict postoperative bladder outlet obstruction ($p = 0.002$, odds ratio = 0.658, 95% C.I.).
Conclusion: Preoperative Qmax is the only independent risk factor for postoperative bladder outlet obstruction in women undergoing TVTO surgery.
Brief Summary: TVTO is an effective surgical option for genuine stress incontinence in females. Preoperative Qmax is the only independent risk factor for postoperative bladder outlet obstruction.
Keywords: Urethral hypermobility; SUI; Voiding dysfunction; Vaginal tapes.

Faculty of Oral Dental Medicine

Dept. of Dental Material

1098. Chemical and Biological Evaluation of Egyptian Nile Tilapia (Oreochromis Niloticas) Fish Scale Collagen

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Collagen is considered to be one of the most useful biomaterials with different medical applications. However, collagen properties differ from one source to another. The aim of this study was to extract,purify, characterize and perform preliminary biological evaluation of type I collagen from scales of Egyp-tian Nile Tilapia. Pepsin-solubilized collagen (PSC) was successfully prepared from Nile Tilapia fish scalewaste. Lyophilized collagen was dissolved in dilute HCl to form acidic collagen solutions (ACS) which wasneutralized to form gel. To confirm the biocompatibility of the produced gel, baby hamster kidney (BHK-21) fibroblast cells were seeded onto a 3D collagen gel (0.3% and 0.5%, w/v). The results of an SDS-PAGEtest showed that the extracted collagens were type I collagen, with α chain composition of (1)22.Thermal analysis showed that the denaturation temperature was 32°C. X-ray diffraction (XRD) analy-sis and Fourier-transform infrared spectra (FTIR) showed that the extracted collagen had a triple helixstructure. Active proliferation of BHK-21 cells with no signs of toxicity was evident with both collagengel concentrations tested. The results show that Nile Tilapia scales can be an effective source of collagenextraction that could be used as a potential biomaterial in biomedical applications.
Keywords: Nile tilapia; Fish scale; Type I collagen; Characterization; BHK-21 (Baby hamster kidney).

Dept. of Oral and Maxillofacial Surgery

1099. Does Prolonged Reconstruction of Disarticulation Defect with Bone Plate Affect the Electromyography Records of Masticatory Muscles?

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Objectives: For medical or socioeconomic reasons, the primary reconstruction of disarticulation defects with bone plates stays for many years. This study was performed to assess the effect of this delay on EMG records of masticatory muscles.
Materials and Methods: 25 patients treated by insertion of reconstruction plates in disarticulation defects were prospectively participated in this study. EMG records for masticatory muscles were obtained before surgery and three months, six months, one year, two years and three years afterwards. Paired t-test was used to determine whether there was significant difference between the EMG values or not.
Results: At three years after surgery, the amplitude values of masseter and temporalis muscles, on the resected side, have decreased by 39% and 60% respectively while; on the non-operated side they have increased by 35% and 29%. The peak decrease, on the resected sides, has occurred at three months for