
Kasr Al-Ainy International Publications

2015



Faculty of Medicine

Dept. of Anatomy

582. Age Related Alteration in the Lacrimal Gland of Adult Albino Rat: A Light and Electron Microscopic Study

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Annals of Anatomy, 196: 336-351 (2014) IF: 2.075

Background: Age related changes in the lacrimal gland are associated with alterations in the structural organization and functional response in the gland of diverse mammalian species. Dry eye syndrome is one of the most common ocular problems in the world especially in old age. It results when the lacrimal gland fails to secrete proteins and fluid in sufficient quantity or appropriate composition.

Aim of the work: The present study is designed to demonstrate the influence of aging on the structure of the lacrimal gland of albino rat and to provide a morphological basis to explain the pathogenesis of the dry eye syndrome with ageing. It also aims to carry out a comparative analysis of age-dependent changes in male and female rats and to address how the lacrimal gland ages in each sex.

Material and Methods: Eighty albino rats were used in this study. The animals were divided into two age groups, young adult and senile. Tear secretion was measured using a modified Schirmer test. Corneal impression cytology of the anesthetized rats was done. The glands were subjected to gross morphologic examination, microscopic examination using H&E, PAS, Masson's trichrome and Giemsa stains. Electron microscopic examination was done in addition to quantitative histomorphometric estimations included acinar density, ductal count and mast cell count.

Results: Light microscopic examination of the lacrimal glands of the senile rats revealed different pathological changes. These included acinar, ductal as well as stromal changes. Electron microscope examination of the lacrimal gland of the senile group showed a decrease in the electron dense secretory vesicles, mitochondrial swelling and lipofuscin-like inclusions were frequently seen in the cytoplasm of acinar cells in senile rats.

Conclusion: The structural changes in the lacrimal glands of senile rats were associated with reduction in tear secretion as well as alterations in corneal epithelium. Gender difference in lacrimal gland structure was recorded.

Keywords: Aging; cytology; Histology; Lacrimal gland; Pathology.

583. Effect of Glucocorticoids on Indomethacin-Induced Gastric Ulcer in the Adult Male Albino Rat – Histological, Morphometric and Electron Microscopy Study

Sherif Mohamed Zaki and Enas Ahmed Mohamed

Archives of Medical Science, 10(2): 381-388 (2014) IF: 1.89

Introduction: Indomethacin is a non steroidal anti-inflammatory drug (NSAID) which is capable of producing injury to gastric mucosa. To prevent of NSAID-induced gastropathy, it is important to evaluate the risk factors. One of them is steroid. The aim is to study time dependent effects of glucocorticoids (GC) on indomethacin induced gastric ulcer.

Material and Methods: Forty-nine albino rats were used. They were divided into control and experimental groups. The experimental group was subgroup I (rats were given indomethacin and were sacrificed 1 day after drug intake), subgroup II (rats were given indomethacin + dexamethasone and were sacrificed 1 day after drug intake), subgroup III (rats were given indomethacin + dexamethasone and were sacrificed 3 days after drug intake) and subgroup IV (rats were given indomethacin + dexamethasone and were sacrificed 7 days after drug intake). Histological, scanning electron microscopy and morphometric studies were used.

Results: Indomethacin induced gastric ulceration with shredding of the superficial epithelial cells. The fundic glands were dilated in the subgroups II, III, IV. The surface epithelial cells were shredded and the ulcer sizes were big in subgroup IV. All subgroups exhibited abnormal surface epithelial cells within the gastric ulcer area.

Conclusions: Indomethacin is capable of producing injury to gastrointestinal mucosa. With prolonged use of GC the surface epithelial cells became more affected and the ulcer sizes became bigger. Concomitant use of both medications will delay the healing of the indomethacin induced gastric ulcer and induce more gastric complication.

Keywords: Indomethacin; Glucocorticoids; Gastric ulcer.

584. Lung Damage After Long-Term Exposure of Adult Rats to Sodium Fluoride

Fayza Abdel-Raouf Abdel-Gawad, Maha Hussein Ashmawy, Sherif Mohamed Zaki and Gaber Hassan Abdel-Fatah

Archives of Medical Science, 10(5): 1035-1040 (2014) IF: 1.89

Introduction: Fluorides, when taken in amounts exceeding the standard therapeutic dosage, are regarded as toxic substances. Chronic fluorosis causes marked destruction of lung tissues. The study aimed to determine whether the effect of a chronic toxic dose of sodium fluoride on the lung of an adult male albino rat is reversible or irreversible. This was done through light and electron microscopic studies. Morphometric study was also done.

Material and methods: Forty adult male rats were used. The animals were divided into 3 groups: control group; group I (chronic fluorosis group) in which sodium fluoride was given daily for 3 months; and group II (recovery group) in which sodium fluoride was given daily for 3 months and after that the rats survived for another month.

Results: The lung of group I was characterized by presence of blood and lymph congestion. Thickening of alveolar septa was also observed with rupture of septa and widening of the air spaces. The area % of collagen (1.13 ± 0.5), septal wall thickness (13.47 ± 6.1), and number of macrophages (5 ± 2.5) increased in comparison to the control group ($p \leq 0.05$). With discontinuation of sodium fluoride (group II), no much improvement was observed.

Conclusions: Chronic fluorosis has many pathological effects on the lung which are irreversible.

Keywords: Chronic fluorosis; Lung damage.

585. Morphological and Morphometrical Study of the Nasal Opening of the Nasolacrimal Duct in Man

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Folia Morphologica, 73 (3): 321-330 (2014) IF: 0.524

Background: Epiphora constitutes one of the major and very common problems in all age groups. Recent developments in ophthalmology such as balloon dilatation, stent implantation, laser therapy and endoscopy of the lacrimal drainage system raise the need for a detailed anatomical knowledge of this system. It is also important for formulation of principles and techniques in the management of lacrimal problems.

Aim of the work: The aim of this study was to demonstrate variations in shape, size and location of the opening of the nasolacrimal duct and of the lacrimal fold.

Materials and methods: Twenty sagittal head sections were obtained, the nasal septum was removed and the lateral wall of the nasal cavity was exposed and examined. The opening of the nasolacrimal duct (NLD) was demonstrated and was subjected to anatomical observations for the shape, site, size, opening type and the presence of the lacrimal fold. The different measurements for the distances between the opening of NLD and anterior nasal spine, palate and inferior concha were made.

Results: The examined specimens showed that the opening of the NLD was variable in shape taking the form of sulcus in 70% and fissure in 30% of specimens. The sulcus was either vertical or oblique while the fissure was either vertical, oblique or in the form of anteroposterior one. Regarding the location, the opening of the NLD was located at anterior one third below line of attachment of the inferior concha in nearly half of cases (45%). The lacrimal fold was present in most of examined specimens (70%) and absent in 30%. The fold take 5 different forms.

Conclusions: The knowledge of the morphology and morphometry of the lacrimal drainage system enables the ophthalmologist to plan intervention on the lacrimal drainage system precisely and avoid unnecessary manipulations and also minimizing the risk of injury during intra-nasal surgery.

Keywords: Nasolacrimal duct (NLD) opening; Morphology of NLD; Morphometry of NLD.

586. Morphological and Radiometrical Study of the Human Intervertebral Foramina of the Cervical Spine

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Folia Morphologica, 73 (1): 7-18 (2014) IF: 0.524

Background: Degenerative changes of the cervical spine are an inevitable response to certain occupational status and aging processes. Compression of cervical nerve roots may result from disc degeneration, disc herniation or intervertebral foraminal stenosis. The precise and detailed anatomical knowledge of the intervertebral foramen of the cervical spine is essential for the diagnosis and management of cervical radiculopathy.

Aim of the work: The significance of the observations and findings of the present study was to elucidate the correlation between the morphology and disorders of the cervical intervertebral foramina in normal and pathological conditions especially at the level of C3-C4 to C6-C7 on both sides and in both sexes. Moreover, it will help greatly in the planning of both surgical and conservative strategies.

Materials and Methods: In the present study, 5 formalin-fixed adult cadavers and radiological specimens of the cervical region of the vertebral column of 28 normal and 209 subjects suffering from cervical disorder from both sexes and different age groups. They subjected for morphological and radiometrical analysis.

Results: All measurements of the present study of the cervical disorders in females were found to be 6% less than in males in all age groups, which is statistically significant ($p < 0.01$) as compared with the control group (2%). The mean intervertebral foraminal areas in the control group of C5-C6 and C6-C7 are significantly greater than those of C3-C4 and C4-C5.

Conclusions: The mean intervertebral foraminal area was greater in the lower cervical region than the upper in normal adult individuals. In pathological condition the affection of C3-C4 and C4-C5 intervertebral foramina was more due to narrower surface area. The pathology of cervical spine affecting the intervertebral foramina of female which complaint earlier than male due to narrower foramina.

Keywords: Cervical spine; Cervical radiology; Cervical radiometry.

587. Relationship Between Biochemical Bone Markers and Bone Mineral Density in Patients With Phenylketonuria Under Restricted Diet

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Iranian Journal of Pediatrics, 24(1): 23-28 (2014) IF: 0.344

Objective: Most of phenylketonuria (PKU) develops bone turnover impairment and low bone mineral density (BMD). Measurements of BMD reflect only bone mineral status but not the dynamics of bone turnover. Bone markers are a noninvasive tool useful for the assessment of bone formation and bone resorption processes. Our study was to assess the levels of bone markers in PKU in order to select a screen marker and detect the most specific marker which can be combined with BMD for appropriate follow up.

Methods: Thirty three classic PKU patients were studied. BMD and bone mineral content (BMC) were measured. Total alkaline phosphatase (ALP), osteocalcin (OC) and carboxy-terminal propeptide of type I collagen (CICP), osteoprotegerin (OPG), receptor activator of nuclear factor κ B ligand (RANKL) and Deoxypyridinoline (DPD) were measured.

Findings: Nineteen (57.6%) male and fourteen (42.4 %) female PKU patients were involved in the current study. Their mean age was 8.4 ± 4.6 yrs and the age range 3-19 yrs. The control group consisted of twenty two (52.4%) males and twenty (47.6%) females. Their mean age was 8.5 ± 3.3 yrs and th age range 2-17 yrs. Using the Z score values, there was a significant decrease of total BMC (TBMC-Z), BMD of the femoral neck BMD-FN-Z, BMD of lumbar vertebrae (BMD-L-Z), BMD-FN and DPD while RANKL increased. There was a negative correlation between CICP and TBMC and between CICP and BMD-L in these patients. Also, a negative correlation between ALP and TBMC and between ALP and BMD-L was observed. It was concluded that the ALP provides a good impression of the new bone formation in the PKU patients and it has a highly significant negative correlation with the many parameters of the bone mineral status beside the wide availability of inexpensive and simple methods. So a screening test and/or follow up for the PKU patients using ALP would be available. Once the level of ALP decrease is detected, one can combine it with BMD to explore the bone mineral status and with specific bone markers (OC, RANKL and DBD), to verify the dynamics of bone turnover.

Conclusion: This schedule will reduce the risk of exposure of these patients to the risk hazards of DXA and limit its use only to a limited number of the highly suspected cases.

Keywords: Phenylketonuria; PKU; Bone mineral density; RANKL; Osteocalcin; Bone mineral content.

Dept. of Andrology & Sexology

588. Seminal BAX and BCL2 Gene and Protein Expressions in Infertile Men With Varicocele

Taymour Mostafa, Laila Rashed, Nashaat Nabil and Rania Amin

Urology, 84 (3): 590-595 (2014) IF: 2.132

Objective: To assess seminal BAX and BCL2 gene and protein expressions in infertile men with varicocele (Vx).

Materials and Methods: A total of 111 men were investigated and divided into the following groups: healthy fertile men (n = 20), fertile men with Vx (n = 16), infertile oligoasthenoteratozoospermic men without Vx (n = 29), and infertile oligoasthenoteratozoospermic men with Vx (n = 46). They were subjected to history taking, clinical examination, and semen analysis. In their seminal plasma, BAX and BCL2 gene and protein expressions were estimated.

Results: The mean level of seminal BAX gene and protein was significantly decreased, and the mean level of seminal BCL2 gene and protein was significantly increased in fertile men compared with fertile men with Vx and in infertile men without Vx compared with infertile men with Vx. The mean level of seminal BAX gene and protein were significantly increased in men associated with bilateral Vx compared with men associated with unilateral Vx and in cases with Vx grade III compared with Vx grade I and II cases. Seminal BAX demonstrated significant negative correlation with sperm concentration, sperm motility, and sperm normal forms. Seminal BCL2 demonstrated significant positive correlation with sperm concentration, sperm motility, and sperm normal forms and significant negative correlation with seminal BAX.

Conclusion: Seminal BAX is significantly increased and seminal BCL2 is significantly decreased in men associated with Vx. Seminal BAX is significantly increased in men associated with bilateral Vx compared with unilateral Vx and in cases with Vx grade III compared with Vx grade I and II cases. Seminal BAX demonstrates significant negative correlation with sperm concentration, sperm motility, and sperm normal forms, whereas seminal BCL2 demonstrates significant reverse positive correlations.

Keywords: Male infertility; Semen; Varicocele; Apoptosis.

589. Seminal Helicobacter Pylori Treatment Improves Sperm Motility in Infertile Asthenozoospermic Men

Yehia El-Garem, Mohamed El-Sawy and Taymour Mostafa

Urology, 84 (6): 1347-1350 (2014) IF: 2.132

Objective: To assess the effect of treatment of seminal Helicobacter pylori in infertile asthenozoospermic men.

Methods: In all, 223 infertile asthenozoospermic men were consecutively selected. They were subjected to history taking, clinical examination, semen analysis, and estimation of H pylori IgA antibodies in their seminal fluid. Infertile men with high seminal H pylori IgA were subjected to triple drug treatment, omeprazole, 20 mg; tinidazole, 500 mg; and clarithromycin, 250 mg twice a day for 2 weeks. Semen analysis as well as H pylori IgA antibodies was estimated after 3 months.

Results: In all, 22 of 223 men (9.87%) demonstrated H pylori IgA antibodies in their seminal plasma. After treatment, mean seminal H pylori IgA levels demonstrated significant decrease (1.55 ± 0.4 vs 0.52 ± 0.26; 95% confidence interval, 0.83-1.21; P = .001) concomitant with improved progressive as well as nonprogressive sperm motility. H pylori IgA antibodies demonstrated significant negative correlation with progressive sperm motility, nonprogressive sperm motility, normal sperm morphology, and significant positive correlation with immotile sperm motility.

Conclusion: H pylori treatment significantly improves sperm motility in infertile asthenozoospermic men with elevated seminal H pylori IgA.

Keywords: Male infertility; Semen; Sperm motility; H. Pylori.

590. Female Sexual Dysfunction Across the Three Pregnancy Trimesters: An Egyptian Study

Samy Hanafy, Neveen E. Srour and Taymour Mostafa

Sexual Health, 11 (3): 240-243 (2014) IF: 1.576

Background: Pregnancy is a special period in the life of women characterised by physical, hormonal and psychological changes that, in conjugation with social and cultural influences, could affect women's sexuality as well as couples' sexual relationships. This cross-sectional study aimed to evaluate female sexual dysfunction (FSD) among the three pregnancy trimesters. **Methods:** A total of 300 healthy heterosexual pregnant Egyptian women with stable marital relationships were included. The Female Sexual Function Index (FSFI) questionnaire was used as a standard method for measuring female sexual function in each pregnancy trimester.

Results: There was no significant relationship between FSD and women's education, work, gravidity and parity. The incidence of FSD demonstrated significant alterations throughout pregnancy, being 68% in the first trimester, decreasing in the second trimester to 51% and increasing to 72% in the third trimester. Sexual desire decreased in the first trimester, was variable in the second trimester and decreased at the end of the third trimester (3.51.2, 3.71.2 and 3.41.1 respectively). Sexual satisfaction declined significantly in the first trimester compared with the second and the third trimesters (4.21.1, 4.80.8 and 4.61.0 respectively). Scores for the arousal, lubrication and orgasm domains were significantly decreased in the third trimester, where pain was increased in the second trimester compared with the first and third trimesters.

Conclusion: Female sexual function is affected during pregnancy, with a significant change in all Female Sexual Function Index domains, especially in the first and third trimesters.

Keywords: Desire; Female sexual function index; Satisfaction.

591. In Vitro Study of Cypermethrin on Human Spermatozoa and the Possible Protective Role of Vitamins C and E

A. Zalata, S. Elhanbly, H. Abdalla, M. S. Serria, A. Aziz3, S. A. El-Dakrooy, A. A. El-Bakary and T. Mostafa

Andrologia, 46(10): 1141-1147 (2014) IF: 1.172

Cypermethrin, a type II synthetic pyrethroid pesticide, is widely used in pest control programmes in agriculture and public health. This study aimed to assess the potential effect of cypermethrin on human spermatozoa and the possible ameliorative effects of

vitamins C and E. Semen samples of 20 healthy normozoospermic men were divided into six aliquots at room temperature. The first aliquot served as control not exposed to treatments, and the second was incubated with 20 mM vit. C and 2 mM vit. E where the third one was exposed to 10 IM cypermethrin for 6 h. The other three aliquots were incubated with vit. C, vit. E and both vitamins for 30 min before cypermethrin exposure. Semen aliquots were analysed for sperm motility, sperm viability, hypo-osmotic swelling test and modified alkaline comet assay. The results demonstrated a significant decrease in sperm motion, sperm function and increased sperm DNA damage in the cypermethrin group. Addition of vitamins C and E alone/combined led to significant improvement in sperm motion, sperm function and DNA damage, being maximal with both vitamins together. It is concluded that in vitro cypermethrin can alter sperm function and induce DNA damage in spermatozoa, which is improved after using vitamins C and E.

Keywords: Antioxidants; Cypermethrin; Male infertility; Pyrethroid; Spermatozoa.

592. Oestrogen Receptor Alpha Gene Polymorphisms Relationship With Semen Variables in Infertile Men

A. Zalata, H. A. Abdalla, Y. El-Bayoumy and T. Mostafa

Andrologia, 46(6): 618-624 (2014) IF: 1.172

This study aimed to assess the association of oestrogen receptor alpha (ER- α) gene polymorphisms and semen variables in infertile oligoasthenoteratozoospermic (OAT) men. In all, 141 men were grouped into fertile men ($n = 60$) and infertile OAT men ($n = 81$). They were subjected to assessment of semen analysis, acrosin activity, serum reproductive hormones and genotyping of ER- α gene. Frequencies of p and x alleles in ER- α gene PvuII and XbaI polymorphisms were more prevalent among fertile men compared with infertile OAT men. Presence of P and X alleles was associated with increased incidence of male infertility for genotypes PP, XX compared with genotypes pp and xx (OR = 2.8; 95% CI: 2.36–6.97; $P = 0.001$ and OR = 4.1, 95% CI: 1.49–11.39; $P = 0.001$, respectively). The mean of semen variables and sperm acrosin activity were significantly higher in cases associated with pp than PP and in xx than XX genotypes of ER- α gene. Mean levels of all serum reproductive hormones demonstrated nonsignificant differences in different ER- α genotypes except oestrogen that was elevated in PP and XX ER- α gene genotypes. It is concluded that as oestrogen is concerned in male gamete maturation, ER- α gene polymorphisms might play a role in the pathophysiology of male infertility.

Keywords: Hormones; Male infertility; Oestrogen; Polymorphism; Semen.

593. Seminal Androgens, Oestradiol and Progesterone in Oligoasthenoteratozoospermic Men With Varicocele

A. Zalata, M. El-Mogy, A. Abdel-Khabir, Y. El-Bayoumy, M. El-Baz and T. Mostafa

Andrologia, 46 (7): 761-765 (2014) IF: 1.172

This study aimed to assess seminal androgens, oestradiol, progesterone levels in oligoasthenoteratozoospermic (OAT) men with varicocele (Vx). In all, 154 men with matched age and body mass index were investigated that were divided into healthy

fertile controls ($n = 35$), OAT men with Vx ($n = 55$), OAT men without Vx ($n = 64$). They were subjected to assessment of semen parameters, seminal levels of testosterone (T), androstenedione (A), 5 α -androstane-3 α ,17 β -diol (3 α -diol), oestradiol (E2), 17-hydroxyprogesterone (17-OHP) and progesterone (P). Seminal levels of T and A were significantly decreased where seminal levels of 3 α -diol, E2, 17-OHP, P were significantly higher in OAT men with/without Vx compared with fertile controls. Sperm count, sperm motility and sperm normal forms percentage demonstrated significant positive correlation with seminal T and A and significant negative correlation with seminal 3 α -diol, E2, P. It is concluded that in fertile men, seminal T and A are significantly increased and seminal 3 α -diol, E2, 17-OHP, P are significantly decreased compared with infertile OAT men with/without Vx. Association of Vx demonstrated a nonsignificant influence on these hormonal levels in OAT cases. Sperm count, sperm motility and sperm normal forms demonstrated significant positive correlation with seminal T, A and significant negative correlation with seminal 3 α -diol, E2, P.

Keywords: Male infertility; Oestrogen; Progesterone; Semen; Testosterone; Varicocele

594. Smoking Influence on Sperm Vitality, DNA Fragmentation, Reactive Oxygen Species and Zinc in Oligoasthenoteratozoospermic Men With Varicocele

E. A. Taha, A. M. Ezz-Aldin, S. K. Sayed, N. M. Ghandour and T. Mostafa

Andrologia, 46 (6): 687-691 (2014) IF: 1.172

This study aimed to assess the influence of smoking duration and intensity on sperm vitality, sperm DNA fragmentation, reactive oxygen species (ROS) and zinc (Zn) levels in oligoasthenoteratozoospermic (OAT) men with varicocele (Vx). A total of 246 men were investigated who were divided into OAT nonsmokers, OAT smokers, OAT nonsmokers and OAT smokers with Vx. They were subjected to history taking, clinical examination and semen analysis. In their semen, sperm hypo-osmotic swelling (HOS) test, sperm DNA fragmentation test, seminal ROS and seminal Zn were assessed. The results demonstrated significantly decreased HOS test, seminal Zn level and significantly increased sperm DNA fragmentation, seminal ROS levels in OAT smokers with Vx more than OAT smokers compared with OAT nonsmokers. Smoking intensity, smoking duration and Vx grade demonstrated significant negative correlations with sperm motility, HOS test percentage and significant positive correlations with sperm DNA fragmentation, seminal ROS level. It is concluded that smoking has a negative impact on sperm progressive motility, HOS test, seminal Zn and positive impact on sperm DNA fragmentation, semen ROS level that are exaggerated if Vx is associated being correlated with smoking intensity, smoking duration and Vx grade.

Keywords: DNA fragmentation; Hos test; Male infertility; Semen; Smoking; Varicocele; Zinc.

595. Triorchidism: Two Case Reports

A. Hassan, S. Elhanbly, M. S. El-Mogy and T. Mostafa

Andrologia, 46 (9): 1073-1077 (2014) IF: 1.172

In this study, two cases of triorchidism are reported. The first case (29 years) had two right discrete ovoid nontender, firm, mobile lumps with testicular sensation. The second case (32 years) had

two left discrete ovoid nontender, firm, mobile lumps with normal testicular sensation. They were subjected to the estimation of serum follicle-stimulating hormone, luteinising hormone, free and total testosterone, alpha-fetoprotein, prostate-specific antigen, karyotyping and semen analysis. Imaging included ultrasonography, transrectal ultrasound, magnetic resonance imaging and intravenous pyelography. The first case had two testes in the right side. Each one had an epididymis where one vas deferens was palpated. The second case had two left testes with normal testicular sensation. The lower left lump represented normal-sized testis attached to its epididymis and a single palpated vas deferens. Diagnosis of the first case was triorchidism associated with left varicocele (grade I) with oligoasthenoteratozoospermic semen profile. Intracytoplasmic sperm injection was carried out resulting in a twin. Diagnosis of the second case was triorchidism with accessory testis on the left side associated with left varicocele (grade I) and asthenozoospermic semen profile that was submitted to medical treatment. It is concluded that triorchidism is an uncommon congenital anomaly that should be not overlooked in diagnosing scrotal masses.

Keywords: Infertility; Polyorchidism; Testis; Triorchidism; ultrasonography.

Dept. of Anesthesiology

596. Acute Pain Services; An Egyptian Experience

Amany Ezzat Ayad Ibrahim

Pain Medicine, 15(2): 336-336 (2014) IF: 2.243

Inadequacies in postoperative pain relief have been evident for decades despite the availability of variable drugs and sophisticated techniques for management [1,2]. This is thought of due to lack of an appropriate service that deploys available expertise rather than the need for new medications or pain management modalities. Thus, establishing an acute pain service (APS) based on an evidence-based approach within the available resources sounds like a solution. Perineal Cancer-Related Pain Impair-Ganglion Neurolysis Lower End Block (Intrathecal Neurolysis)* Consider always a test dose.

597 Infection Complications and Pattern of Bacterial Resistance in Living-Donor Liver Transplantation: A Multicenter Epidemiologic Study in Egypt

Mukhtar A, Abdelaal A, Hussein M, Dabous H, Fawzy I, Obayah G, Hasanin A, Adel N, Ghaith D, Bahaa M, Abdelaal A, Fathy M and El Meteini M

Transplantation Proceedings, 46: 1444-7 (2014) IF: 0.984

Introduction: Data on the prevalence and pattern of infection after living-donor liver transplantation (LDLT) are scarce in Egypt. We therefore conducted this study to quantify the incidence, risk factors, and pattern of bacterial resistance post-LDLT in 3 hospitals in Egypt.

Patients and Methods: We conducted a retrospective, multicenter study of the medical records of 246 patients who underwent LDLT between January 2006 and April 2011 at 3 transplant centers in Egypt.

Results: Of 246 patients enrolled in this study, 127 (52%) developed infectious complications after LDLT, with 416 episodes of infection occurring within 3 months of transplantation. Biliary tract infection was the most common,

occurring in 169 (40.6%) patients. The rate of infection with Gram-negative bacteria was higher than that of infection with Gram-positive bacteria (310 [74%] vs 87 [21%]; $P < .001$). Overall, 75% of Gram-negative isolates were multidrug resistant. Significant independent risk factors for infection were portal vein thrombosis (odds ratio, 2.4; $P = .037$) and biliary complications (odds ratio, 5.4; $P < .001$).

Conclusions: Our data showed a high-resistance pattern of bacterial infection after LDLT in Egypt. Early biliary complications were an independent risk factor for bacterial infection.

Keywords: Liver transplantation; Infection; Egypt.

Dept. of Cardiology

598. TGF- β Signaling Mediates Endothelial-To-Mesenchymal Transition (EndMT) During Vein Graft Remodeling

Brian C. Cooley, Jose Nevado, Jason Mellad, Dan Yang, Cynthia St. Hilaire, Alejandra Negro, Fang Fang, Guibin Chen, Hong San, Avram D. Walts, Robin L. Schwartzbeck, Brandi Taylor, Jan D. Lanzer, Andrew Wragg, Abdalla Elagha, Leilani E. Beltran, Colin Berry, Robert Feil, Renu Virmani, Elena Ladich, Jason C. Kovacic and Manfred Boehm

Science Translational Medicine, 6: 227-234 (2014) IF: 14.414

Veins grafted into an arterial environment undergo a complex vascular remodeling process. Pathologic vascular remodeling often results in stenosed or occluded conduit grafts. Understanding this complex process is important for improving the outcome of patients with coronary and peripheral artery disease undergoing surgical revascularization. Using in vivo murine cell lineage-tracing models, we show that endothelial-derived cells contribute to neointimal formation through endothelial-to-mesenchymal transition (EndMT), which is dependent on early activation of the Smad2/3-Slug signaling pathway. Antagonism of transforming growth factor- β (TGF- β) signaling by TGF- β neutralizing antibody, short hairpin RNA-mediated Smad3 or Smad2 knockdown, Smad3 haploinsufficiency, or endothelial cell-specific Smad2 deletion resulted in decreased EndMT and less neointimal formation compared to controls. Histological examination of postmortem human vein graft tissue corroborated the changes observed in our mouse vein graft model, suggesting that EndMT is operative during human vein graft remodeling. These data establish that EndMT is an important mechanism underlying neointimal formation in interpositional vein grafts, and identifies the TGF- β -Smad2/3-Slug signaling pathway as a potential therapeutic target to prevent clinical vein graft stenosis.

Keywords: TGF- β ; Endothelial-to-mesenchymal transition; Vein graft remodeling.

599. Idiopathic Left Ventricular Outflow Tract Ectopy: A Single Focus With Extremely Divergent Breakouts

Sherif Gouda, Dan Wichterle, Petr Peichl and Josef Kautzner

Bmc Cardiovascular Disorders, 14: 1-5 (2014) IF: 1.5

Background: Idiopathic ventricular tachycardia (VT) and/or premature ventricular contractions (PVCs) arise most commonly from the right ventricular outflow tract and less frequently from

the left ventricular outflow tract (LVOT), either below or above the semilunar valves.

Case presentation: We report a case of 24-year-old man with idiopathic ventricular tachycardia from a single focus in the supraventricular left ventricular outflow tract with two extremely divergent breakouts observed during the ablation procedure.

Conclusion: Focal sources of ventricular arrhythmia in the aortic root may have different preferential exits and meticulous activation sequence mapping is the preferable strategy to delineate the site of origin.

Keywords: Ventricular tachycardia; Premature ventricular contractions; Left ventricular outflow tract; Preferential conduction; Non-coronary Aortic cusp; Catheter ablation.

Dept. of Chemical Pathology

600. Durable Diagnosis of Seminal Vesicle and Sexual Gland Diseases Using the Nano Optical Sensor Thin Film Sm-Doxycycline Complex

Attia M.S., Youssef A.O. and El-Sherif RH

Anal Chim Acta, 835 (2014): 56-64 (2014) IF: 4.517

A new method in which a nano optical sensor for diagnosis of different diseases of seminal vesicle and sexual gland was prepared. The working principle of the method depends on the determination of the fructose concentration in semen of different patients by using nano optical sensor thin film Sm-doxycycline doped in sol-gel matrix.

The assay is based on the quenching of the characteristic emission bands of Sm(3+) present in silica doped Sm-doxycycline nanooptode thin film by different fructose concentrations in acetonitrile at $\lambda_{ex} = 400$ nm.

This method was optimized for parameters, such as, solvent effect, operational stability, shelf life and interference parameters. Good and reproducible linearity (1×10^{-9} - 5.0×10^{-5} mol L⁻¹) with a detection limit of 9.0×10^{-10} mol L⁻¹ and quantification limit of detection (LOQ) 2.7×10^{-9} mol L⁻¹ were obtained. Seminal fructose determination in different patient samples after appropriate dilutions confirmed the reliability of this technique.

The method was successfully applied for routine fructose monitoring in human semen samples of different cases such as; obstructive and non-obstructive azoospermia, inflammation of male accessory glands, atrophy of seminal vesicle, congenital vas deferens and retrograde ejaculation.

Keywords: Luminescence intensity; Nano optical sensor thin film; Quenching; Seminal fructose; Seminal vesicle; Sm-doxycycline.

601. Increased DNA Damage in Hepatitis C Virus-Related Hepatocellular Carcinoma

Shereen M. Shawki, Safa S. Meshaal, Aliaa S. El Dash, Naglaa A. Zayed and Mariam Onsy F. Hanna

Dna and Cell Biology, 33: 884-890 (2014) IF: 1.991

One consequence of hepatitis C virus (HCV) infection is an elevated cancer risk. During chronic viral infection, deoxyribonucleic acid (DNA) damage is being induced by reactive oxygen and nitrogen species, which may play a pathogenic role in HCV-induced carcinogenesis. The study investigated DNA damage in peripheral blood lymphocytes from

patients with hepatocellular carcinoma (HCC) and those with HCV infection with and without associated cirrhosis and normal controls. As a measure for genomic damage, the comet assay (single cell gel electrophoresis) was applied, which detects single- and double-strand breaks and alkali-labile sites through electrophoretic mobility of the resulting fragments.

The levels of DNA damage were significantly higher in HCC and HCV-associated cirrhosis compared to HCV without cirrhosis and the control group. Patients presenting with DNA damage more than mean + two standard deviation of the controls had a 3.6-fold risk of having HCC more than those with undamaged DNA. HCV disease progression was the only discriminator predicting the extent of DNA damage. The accumulation of DNA damage is important in HCC evolution. DNA damage indicating intracellular oxidative and nitrate stress may lead to mutagenesis and consequently malignant transformation, which emphasizes the need to optimize the therapy for reducing the degree of genomic damage.

Keywords: Comet assay; HCV, HCC, DNA damage.

Dept. of Clinical & Chemical Pathology

602. Repeat Endocarditis: Analysis of Risk Factors Based on the International Collaboration on Endocarditis-Pro prospective Cohort Study

Alagna L, Park LP, Nicholson BP, Keiger AJ, Strahilevitz J, Morris A, Wray D, Gordon D, Delahaye F, Edathodu J, Miró JM, Fernández-Hidalgo N, Nacinovich FM, Shahid R, Woods CW, Joyce MJ, Sexton DJ and Chu VH.

Clinical Microbiology and Infection, 20: 566-575 (2014)
IF: 5.197

Repeat episodes of infective endocarditis (IE) can occur in patients who survive an initial episode. We analysed risk factors and 1-year mortality of patients with repeat IE. We considered 1874 patients enrolled in the International Collaboration on Endocarditis – Prospective Cohort Study between January 2000 and December 2006 (ICE-PCS) who had definite native or prosthetic valve IE and 1-year follow-up.

Multivariable analysis was used to determine risk factors for repeat IE and 1-year mortality. Of 1874 patients, 1783 (95.2%) had single-episode IE and 91 (4.8%) had repeat IE: 74/91 (81%) with new infection and 17/91 (19%) with presumed relapse.

On bivariate analysis, repeat IE was associated with haemodialysis (p 0.002), HIV (p 0.009), injection drug use (IDU) (p < 0.001), Staphylococcus aureus IE (p 0.003), healthcare acquisition (p 0.006) and previous IE before ICE enrolment (p 0.001).

On adjusted analysis, independent risk factors were haemodialysis (OR, 2.5; 95% CI, 1.2–5.3), IDU (OR, 2.9; 95% CI, 1.6–5.4), previous IE (OR, 2.8; 95% CI, 1.5–5.1) and living in the North American region (OR, 1.9; 95% CI, 1.1–3.4). Patients with repeat IE had higher 1-year mortality than those with single-episode IE (p 0.003).

Repeat IE is associated with IDU, previous IE and haemodialysis. Clinicians should be aware of these risk factors in order to recognize patients who are at risk of repeat IE.

Keywords: Complication of endocarditis; Recurrence of endocarditis; Relapse of endocarditis; Repeat endocarditis; Risk factors for endocarditis.

603. Clinical Utility of Chitotriosidase Enzyme Activity in Nephropathic Cystinosis

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Orphanet Journal of Rare Diseases, 9 (1): 155 (2014) IF: 3.958

Background: Nephropathic cystinosis is an inherited autosomal recessive lysosomal storage disorder characterized by the pathological accumulation and crystallization of cystine inside different cell types. WBC cystine determination forms the basis for the diagnosis and therapeutic monitoring with the cystine depleting drug (cysteamine).

The chitotriosidase enzyme is a human chitinase, produced by activated macrophages. Its elevation is documented in several lysosomal storage disorders. Although, about 6% of Caucasians have enzyme deficiency due to homozygosity of 24-bp duplication mutation in the chitotriosidase gene, it is currently established as a screening marker and therapeutic monitor for Gaucher's disease.

Methods: Plasma chitotriosidase activity was measured in 45 cystinotic patients, and compared with 87 healthy controls and 54 renal disease patients with different degrees of renal failure (CKD1-5). Chitotriosidase levels were also correlated with WBC cystine in 32 treated patients. Furthermore, we incubated control human macrophages in-vitro with different concentrations of cystine crystals and monitored the response of tumor necrosis factor-alpha (TNF-a) and chitotriosidase activity. We also compared plasma chitotriosidase activity in cystinotic knocked-out (n= 10) versus wild-type mice (n=10).

Results: Plasma chitotriosidase activity in cystinotic patients (0–3880, median 163 nmol/ml/h) was significantly elevated compared to healthy controls (0–90, median 18 nmol/ml/h) and to CKD patients (0–321, median 52 nmol/ml/h), $P < 0.001$ for both groups. Controls with decreased renal function had mild to moderate chitotriosidase elevations; however, their levels were significantly lower than in cystinotic patients with comparable degree of renal insufficiency.

Chitotriosidase activity positively correlated with WBC cystine content for patients on cysteamine therapy ($r=0.8$), $P < 0.001$. In culture, human control macrophages engulfed cystine crystals and released TNF-a into culture supernatant in a crystal concentration dependent manner. Chitotriosidase activity was also significantly increased in macrophage supernatant and cell-lysate. Furthermore, chitotriosidase activity was significantly higher in cystinotic knocked-out than in the wild-type mice, $P = 0.003$.

Conclusions: This study indicates that cystine crystals are potent activators of human macrophages and that chitotriosidase activity is a useful marker for this activation and a promising clinical biomarker and therapeutic monitor for nephropathic cystinosis.

Keywords: Lysosomal storage disorders; Nephropathic cystinosis; Cystine crystals; Macrophage activation; Chitotriosidase enzyme; Clinical screening; Cysteamine; Therapeutic monitoring.

604. Analysis of Oxidative Stress Status, Catalase Andcatechol-O-Methyltransferase Polymorphisms Inegyptian Vitiligo Patients

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Plos One, 9 (6): (2014) IF: 3.534

Vitiligo is the most common depigmentation disorder of the skin. Oxidative stress is implicated as one of the probable events involved in vitiligo pathogenesis possibly contributing to melanocyte destruction. Evidence indicates that certain genes including those involved in oxidative stress and melanin synthesis are crucial for development of vitiligo. This study evaluates the oxidative stress status, the role of catalase (CAT) and catechol-O-Methyltransferase (COMT) gene polymorphisms in the etiology of generalized vitiligo in Egyptians. Total antioxidant capacity (TAC) and malondialdehyde (MDA) levels as well as CAT exon 9 T/C and COMT 158 G/A polymorphisms were determined in 89 patients and 90 age and sex-matched controls. Our results showed significantly lower TAC along with higher MDA levels in vitiligo patients compared with controls. Meanwhile, genotype and allele distributions of CAT and COMT polymorphisms in cases were not significantly different from those of controls. Moreover, we found no association between both polymorphisms and vitiligo susceptibility. In conclusion, the enhanced oxidative stress with the lack of association between CAT and COMT polymorphisms and susceptibility to vitiligo in our patients suggest that mutations in other genes related to the oxidative pathway might contribute to the etiology of generalized vitiligo in Egyptian population.

Keywords: Vitiligo; Oxidative; Molecular.

605. Triple Test Screening for Down Syndrome: An Egyptian-Tailored Study

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Plos One, 9 (10): (2014) IF: 3.534

Background: The incidence of Down syndrome (DS) in Egypt varies between 1:555 and 1:770 and its screening by triple test is becoming increasingly popular nowadays. Results, however, seem inaccurate due to the lack of Egyptian-specific information needed for risk calculation and a clear policy for programme implementation. Our study aimed at calculation and validation of the triple marker medians used in screening Egyptian females as well as to recommend programme conventions to unify screening in this country.

Methods: The study was conducted on 668 Egyptian women, in weeks 15–20 of pregnancy as proven by sonar. Chorionic gonadotropin (CG), a-fetoprotein (AFP) and unconjugated oestriol (uE3) were measured on Siemens Immulite analyzer. Medians of the three parameters were calculated, regressed against gestational age (GA) and weighted by the number of participants/week. Equations were derived to adjust each parameter to the maternal weight and were centered on the median Egyptian weight. Prisca software was fed with the above data, multiples-of-median (MoM) and DS risks were calculated and the screening performance was evaluated at a mid-trimester risk cutoff of 1:270.

Results: Log-linear [$AFP/uE3 = 10^{(A+B*GA)}$] and exponential equations [$CG = A * e^{(B*GA)}$] were derived and the regressed medians were found to follow similar patterns to other Asian and

Western medians. Oestriol was always lowest (even halved) while CG and AFP were intermediate. A linear reciprocal model best fitted weight distribution among Egyptians and successfully adjusted each parameter to a weight of 78.2 kg. Epidemiological monitoring of these recommendations revealed satisfactory performance in terms of 6.7% initial positive rate and 1.00 grand MoM.

Conclusions: Adoption of the above recommendations is hoped to pave the way to a successful DS screening programme tailored to Egyptian peculiarities.

Keywords: Down syndrome.

606. the Clinical Relevance and Prognostic Significance of Adenosine Triphosphate ATP-Binding Cassette (ABCB5) and Multidrug Resistance (MDR1) Genes Expression in Acute Leukemia: An Egyptian Study

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J Cancer Res Clin Oncol., 93(11): 1859-1865 (2014) IF: 3.009

Aim: Multidrug resistance (MDR1) represents a major obstacle in the chemotherapeutic treatment of acute leukemia (AL). Adenosine triphosphate ATP-binding cassette (ABCB5) and MDR1 genes are integral membrane proteins belonging to ATP-binding cassette transporters superfamily.

Purpose: The present work aimed to investigate the impact of ABCB5 and MDR1 genes expression on the response to chemotherapy in a cohort of Egyptian AL patients. The study included 90 patients: 53 AML cases and 37 ALL cases in addition to 20 healthy volunteers as controls.

Methods: Quantitative assessment of MDR1 and ABCB5 genes expression was performed by quantitative real-time polymerase chain reaction. Additional prognostic molecular markers were determined as internal tandem duplications of the FLT3 gene (FLT3-ITD) and nucleophosmin gene mutation (NPM1) for AML cases, and mbc-*abl* fusion transcript for B-ALL cases.

Results: In AML patients, ABCB5 and MDR1 expression levels did not differ significantly between de novo and relapsed cases and did not correlate with the overall survival or disease-free survival. AML patients were stratified according to the studied genetic markers, and complete remission rate was found to be more prominent in patients having low expression of MDR1 and ABCB5 genes together with mutated NPM1 gene. In ALL patients, ABCB5 gene expression level was significantly higher in relapsed cases and MDR1 gene expression was significantly higher in patients with resistant disease.

Conclusion: In conclusion, the results obtained by the current study provide additional evidence of the role played by these genes as predictive factors for resistance of leukemic cells to chemotherapy and hence treatment outcome

Keywords: ABCB5; MDR1; AML; ALL; Egypt.

607. Evaluation of Squamous Cell Carcinoma Antigen-Immunoglobulin M Complex (SCCA-IGM) and Alpha-L-Fucosidase (AFU) as Novel Diagnostic Biomarkers for Hepatocellular Carcinoma

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Tumour Biol, 35: 11559-11564 (2014) IF: 2.84

Hepatocellular carcinoma (HCC) surveillance lacks a reliable biomarker. Alpha-fetoprotein (AFP) is the most widely used. However, not all HCCs secrete AFP.

AFP may be elevated with cirrhosis in the absence of HCC. Serum alpha-L-fucosidase (AFU) and squamous cell carcinoma antigen-immunoglobulin M complex (SCCA-IgM) were found to be useful markers in diagnosing HCC. SCCA-IgM and AFU were assessed by ELISA technique; AFP was measured by enzyme chemiluminescence in serum of 40 patients with HCC, 30 patients with liver cirrhosis, and 20 healthy control participants to compare their accuracy in early diagnosis of HCC.

Serum SCCA-IgM and AFU levels were significantly elevated in HCC group compared to cirrhotic group (P value < 0.001 and < 0.001, respectively). Receiver operating characteristic curve showed the optimal cutoff value for SCCA-IgM was 233 AU/ml with sensitivity 87.5% and specificity 66% and for AFU was 25 U/L with sensitivity 87.5% and specificity 98%. AFP cutoff value was 48 ng/mL with sensitivity of 70% and specificity of 53.3%. The simultaneous determination of AFP and SCCA-IgM activity increased the sensitivity to 92.5% and specificity to 62.1%. There were positive significant correlations between SCCA-IgM and each of AFU ($r=0.296$, $P=0.005$) and AFP ($r=0.284$, $P=0.007$) and no correlation between AFP and AFU. All markers did not correlate with the tumor size or affected by the Child score. The significant difference between SCCA-IgM and AFU levels among HCC and cirrhotic patients suggests their use as potential diagnostic tools and allows identifying a new group of HCC patients even in the absence of elevated AFP.

Keywords: SCCA; IGM; AFU; AFP; HCC.

608. Comparative Characteristics of Endothelial-like Cells Derived from Human Adipose Mesenchymal Stem Cells and Umbilical Cord Blood-Derived Endothelial Cells

Taghrid M. Gaafar, Hala A. Abdel Rahman, Wael Attia, Hala S. Hamza, Konrad Brockmeier and Rabab E. El Hawary

Clinical and Experimental Medicine, 14: 177-184 (2014) IF: 2.824

Adult peripheral blood contains a limited number of endothelial progenitor cells that can be isolated for treatment of ischemic diseases. The adipose tissue became an interesting source of stem cells for regenerative medicine. This study aimed to investigate the phenotype of cells obtained by culturing adipose-derived mesenchymal stem cells (ad-MSCs) in the presence of endothelial growth supplements compared to endothelial cells obtained from umbilical cord blood (UCB).

Passage 3 ad-MSCs and mononuclear layer from UCB were cultured in presence of endothelial growth media for 3 weeks followed by their characterization by flow cytometry and polymerase chain reaction. After culture in endothelial inductive media, ad-MSCs expressed endothelial genes and some endothelial marker proteins as CD31 and CD34, respectively. Adipose tissue could be a reliable source for easy obtaining, expanding and differentiating MSCs into endothelial-like cells for autologous cell-based therapy.

Keywords: Adipose tissue; Mesenchymal stem cells; Endothelial progenitor cells; Regenerative medicine.

609. Association of Cytotoxic T-Lymphocyte Antigen 4 Genetic Polymorphism, Hepatitis C Viral Infection and B-Cell Non-Hodgkin Lymphoma: An Egyptian Study

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Leukemia Lymphoma, 55(5): 1061-1066 (2014) IF: 2.605

Genetic and environmental factors are involved in the pathogenesis of non-Hodgkin lymphoma (NHL). The present study aimed to investigate the association between cytotoxic T-lymphocyte antigen 4 (CTLA-4) genetic polymorphism, hepatitis C virus (HCV) infection and B-cell NHL risk in Egypt. Genotyping of CTLA-4 single nucleotide polymorphisms (SNPs) was performed by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) assay for 181 adult patients with B-NHL and 200 controls. Our study revealed that CTLA-4 + 49 A/G polymorphism conferred increased risk of B-NHL (odds ratio [OR] = 1.7, 95% confidence interval [CI] = 1.36-2.565). The prevalence of HCV infection in individuals harboring the mutant genotype + 49 A/G and - 318 C/T SNPs was higher in patients with B-NHL and was associated with increased risk of B-NHL (OR = 2.79, 95% CI = 1.24-6.93 for + 49 A/G and OR = 3.9, 95% CI = 1.01-15.98 for - 318 C/T). In conclusion, some SNPs of CTLA-4 are genetic risk factors for B-NHL. Moreover, this study identified an association of CTLA-4 + 49 A/G and - 318 C/T promoter polymorphisms with HCV infection.

Keywords: CTLA-4; Genetic polymorphism; HCV; B-NHL; Egypt.

610. Genetic Polymorphisms of Surfactant Protein D Rs2243639, Interleukin (IL)-1 β Rs16944 and IL-1RN rs 2234663 in Chronic Obstructive Pulmonary Disease, Healthy Smokers, and Non-Smokers

Issac MS, Ashur W and Mousa H

Molecular Diagnosis and Therapy, 18: 343-354 (2014) IF: 2.589

Background and Objectives: Chronic obstructive pulmonary disease (COPD) is a complex chronic inflammatory disease that involves the activity of various inflammatory cells and mediators. It has been suggested that susceptibility to COPD is, at least in part, genetically determined. The primary aim of this study was to investigate the association between surfactant protein D (SFTPD) rs2243639, interleukin (IL)-1 β rs16944 and IL-1 receptor antagonist (IL-1RN) rs2234663 gene polymorphisms and COPD susceptibility, as well as examining the association between the various IL-1RN/IL-1 β haplotypes and pulmonary function tests (PFT). Secondly, we aimed to examine the influence of SFTPD rs2243639 polymorphism on serum surfactant protein D (SP-D) level.

Methods: A total of 114 subjects were recruited in this study and divided into three groups: 63 COPD patients, 25 asymptomatic smokers, and 26 healthy controls. Polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) was performed for the detection of SFTPD rs2243639 and IL-1 β rs16944 polymorphisms. Detection of variable numbers of an 86-bp tandem repeat (VNTR) of IL-1RN was done using PCR. Serum SP-D level was measured using enzyme linked-immunosorbent assay. PFTs were measured by spirometry.

Results: Carriers of the SFTPD AG and AA polymorphic genotypes constituted 71.4 % of COPD patients versus 48 % in

asymptomatic smokers, with a statistically significant difference between the two groups ($p = 0.049$). Smokers who were carriers of the polymorphic SFTPD rs2243639 A allele (AG and AA genotypes) have a 2.708 times risk of developing COPD when compared with wild-type GG genotype carriers [odds ratio (OR) 2.708 (95 % CI 1.041-7.047)]. Forced expiratory flow (FEF) 25-75 % predicted was higher in IL-1RN*1/*1 when compared with *1/*2 ($p = 0.013$). FEF25-75 % predicted in carriers of haplotype IL-1RN *1/IL-1 β T (49.21 ± 10.26) was statistically significantly higher than in carriers of IL-1RN *2/IL-1 β T (39.67 ± 12.64) [$p = 0.005$]. Forced expiratory volume in 1 s (FEV1)/forced vital capacity (FVC) in carriers of haplotype IL-1RN *1/IL-1 β T (64.09 ± 6.39) was statistically significantly higher than in carriers of IL-1RN *2/IL-1 β T (59.44 ± 7.71) [$p = 0.048$]. There was no association between SFTPD rs2243639 genotypes and serum SP-D level.

Conclusions: Smokers who are carriers of the SFTPD AG and AA polymorphic genotypes may be at a higher risk of developing COPD when compared with wild-type GG genotype carriers. IL-1RN rs2234663/IL-1 β rs16944 haplotypes influence FEF25-75 % predicted and FEV1/FVC. SFTPD rs2243639 polymorphism did not influence serum SP-D levels in our group of recruited subjects

Keywords: Surfactant Protein D, Interleukin -1 β , IL-1RN, Copd.

611. Is There A Role for MDR1, EPHX1 and Protein Z Gene Variants in Modulation of Warfarin Dosage? A Study on A Cohort of the Egyptian Population

Issac MS, El-Nahid MS and Wissa MY

Molecular Diagnosis and Therapy, 18: 73-83 (2014) IF: 2.589

Background: There is considerable inter-individual variability in warfarin dosages necessary to achieve target therapeutic anticoagulation. Polymorphisms in genes, which master warfarin pharmacokinetics and pharmacodynamics, might influence warfarin dose variation. Genes encoding drug transporters, such as human multidrug resistance (MDR1), as well as epoxide hydrolase 1 (EPHX1), which is a putative subunit of the vitamin K epoxide reductase, and Protein Z (PZ), which is a vitamin K-dependent plasma glycoprotein, are among those candidate genes. **Objective:** The purpose of this study was to investigate the contribution of MDR1 C3435T, EPHX1 H139R and PZ A-13G gene polymorphisms in warfarin dose variation in a cohort of the Egyptian population.

Methods: Eighty-four patients whose international normalized ratio (INR) was in the range of 2-3, 41 males and 43 females, with a mean (\pm SD) age of 40.9 (13.3) years were recruited into this study. MDR1 C3435T, EPHX1 H139R and PZ A-13G gene polymorphisms were detected by polymerase chain reaction-restriction fragment length polymorphism. Primarily, linear regression analysis, including the variables age, gender, MDR1 C3435T, EPHX1 H139R and combined MDR1 C3435T, EPHX1 H139R and PZ A-13G genotypes, was used to assess the effective factors for warfarin maintenance dose. Secondly, the previously examined cytochrome P450 (CYP) 2C9 A1075C and vitamin K epoxide reductase complex subunit 1 (VKORC1) C1173T were added to the regression analysis.

Results: Warfarin dose/week was not influenced by each of the MDR1 C3435T, EPHX1 H139R, and PZ A-13G gene polymorphisms when examined separately. However, when these single nucleotide polymorphisms (SNPs) were combined, MDR1 TT/EPHX1 RH,RR/PZ AA subjects showed statistically significant increase in warfarin dose/week when compared with

MDR1 CC/EPHX1 RH,RR/PZ AA subjects [median (25th-75th percentiles): 49.0 (42.0-59.5) vs. 35.0 (24.5-42.0) mg/week, respectively] ($p = 0.014$). In contrast, in the presence of wild-type EPHX1 HH, there was a decrease in warfarin dose/week in MDR1 TT subjects when compared with CT and CC subjects [median (25th-75th percentiles): 22.0 (17.5-30.6), 42.0 (35.0-49.0) and 42.0 (28.0-54.3) mg/week, respectively] ($p = 0.005$ and 0.030 , respectively). Age had a significant contribution ($p = 0.048$) to the overall variability in warfarin dose. Calculated weekly dose = $52.928 - (0.289 \times \text{age}) + (9.709 \times \text{combined genotype})$. The multivariate linear regression equation of warfarin maintenance dose accounted for about 8 % of variation in dose ($R(2) = 0.079$), age accounted for 5 % of variation, while combined genotypes added the extra 3 %. However, the new regression equation accounted for 20.9 % of variation in dose. Age accounted for 5 %, while VKORC1 C1173T accounted for an extra 13 % of variation and MDR1 C3435T accounted for the remaining 3 % of variation. Calculated dose = $64.909 - (0.282 \times \text{age}) - (13.390 \times \text{VKORC1}) - (7.164 \times \text{MDR1})$. Correlation analysis showed a close and significant relationship between the calculated and actual warfarin dose ($r = 0.457$; $p < 0.0005$).

Conclusion: Warfarin dose/week was significantly influenced by the combined MDR1 C3435T and EPHX1 H139R gene polymorphism since no polymorphism of PZ A-13G SNP was detected in our studied Egyptian population. Future studies with larger sample size will be needed to confirm our findings before definitive conclusions can be made.

Keywords: MDR1; EPHX1; Protein Z; Warfarin.

612. Association Between Matrix Metalloproteinase 2 (MMP2) Promoter Polymorphisms and the Susceptibility To Non-Hodgkin's Lymphoma in Egyptians

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Annals of Haematology, 93(8): 1313-1318 (2014) IF: 2.396

Matrix metalloproteinases (MMPs) are zinc-dependent endopeptidases capable of extracellular matrix degradation. MMP2 is the key molecule that control invasion, tumor growth, and metastasis, and has been associated with poor prognosis in several tumors. Several epidemiological studies have focused on the associations between MMP2 promoter polymorphisms and cancer susceptibility; however, little is known about their role in hematological malignancies. The present study aimed to investigate the association of MMP2 -735C/T and -1306C/T promoter polymorphisms with B-NHL susceptibility and their clinicopathological characteristics. The study included 100 B-NHL patients and 100 healthy controls. Genotyping of MMP2 -735C/T and MMP2 -1306C/T was done by polymerase chain reaction restricted fragment length polymorphism (PCR-RFLP) technique. MMP2 -735C/T heteromutant genotype (CT) was detected in 23 % of patients, and the homomutant genotype (TT) was detected in 7 % of patients. The polymorphic allele, T allele, was associated with susceptibility to B-NHL ($OR = 2.8$; 95 % $CI = 1.48-5.28$). For MMP2 -1306C/T, the frequencies of the polymorphic variants were 5 % for the heteromutant genotype (CT) and 3 % for the homomutant genotype (TT). The polymorphic allele, T allele, conferred almost fourfold increased risk of B-NHL ($OR = 3.8$, 95 % $CI = 1.05-13.9$), and the risk

elevated to be almost eight folds when confined to diffuse large B-cell lymphoma (DLBCL) ($OR = 7.9$, 95 % $CI = 1.67-32.27$). MMP2 -735C/T polymorphic genotypes were correlated with advanced clinical stages of the disease (stages III and IV). In conclusion, the study revealed that the variant alleles of MMP2 -735C/T and MMP2 -1306C/T can be considered as molecular risk factors for B-NHL among Egyptians.

Keywords: MMP2--735C/T M; MP2 -1306C/T; B-NHL; Egypt.

613. Toll-Like Receptor 2 and 9 Genetic Polymorphisms and the Susceptibility to B Cell Non-Hodgkin Lymphoma in Egypt

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Ann Hematol., 93(11): 1859-65 (2014) IF: 2.396

Non-Hodgkin lymphomas (NHL) entail considerable heterogeneity regarding their morphology, clinical course, etiological factors, or response to therapy. Increased incidence of NHL in immunocompromised individuals and after autoimmune diseases suggests that infections and immune dysregulation could play a role in the susceptibility to NHL. Accordingly, genetic variation in Toll-like receptor (TLR) genes might be considered as molecular risk factors for NHL. The aim of the current study was to investigate the possible association between genetic polymorphism of the TLRs genes and B cell NHL (B-NHL) risk in Egypt. The present study included 100 B-NHL patients and 100 healthy controls. Genotyping of TLR2-1350 T/C and TLR9-1237 T/C were done by polymerase chain reaction restricted fragment length polymorphism (PCR-RFLP) technique. The frequency of TLR2-1350 T/C polymorphic genotypes in B-NHL patients was 18 % for the heteromutant genotype (TC) and 1 % for the homomutant (CC). There was no statistical difference in the distribution of TLR2-1350 T/C genotypes between B-NHL patients and controls. As for TLR9-1237 T/C, the frequency of the heteromutant genotype (TC) was 58 % and the homomutant genotype (CC) was 1 % in B-NHL patients. Calculated risk estimation revealed that TLR9-1237 (TC) heterotype conferred almost fourfold increased risk of B-NHL (odds ratio (OR)= 3.93, 95% confidence interval (CI)= 2.16-7.14), and the risk was higher in patients with indolent subtypes ($OR=6.64$, 95% $CI=2.31-9.08$). In conclusion, the study revealed that TLR9-1237 T/C polymorphism can be considered as molecular risk factor for B-NHL among Egyptians.

Keywords: TLR2-1350 T/C; TLR9-1237 T/C; B-NHL; Egypt.

614. Gene Expression Profiling of Endometrium Versus Bone Marrow-Derived Mesenchymal Stem Cells: Upregulation of Cytokine Genes

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Moll Cell Biochem, 395: 29-43 (2014) IF: 2.388

Postulated Stem/progenitor cells involved in endometrium regeneration are epithelial, mesenchymal, and endothelial. Bone marrow (BM) has been implicated in endometrial stem cells. We aimed at studying gene expression profiling of endometrial mesenchymal stem cells compared to BM MSCs to better understand their nature and functional phenotype. Endometrial tissues were obtained from premenopausal hysterectomies ($n = 3$), minced and enzymatically digested as well as Normal BM

aspirates (n=3). Immunophenotyping, differentiation to mesoderm, and proliferation were studied. The expression profile of 84 genes relevant to mesenchymal stem cells was performed. Fold change calculations were determined with SA Biosciences data analysis software. VEGF, G-CSF, and GM-CSF in cultures supernatants of MSCs were assayed by Luminex immunoassay. Endo MSCs possess properties similar to BM MSCs. Cumulative population doubling was significantly higher in Endo MSCs compared to BM MSCs ($p < 0.001$). 52 core genes were shared between both generated MSCs including stemness, self-renewal, members of the Notch, TGFB, FGF, and WNT. 16 downregulated genes (VCAM, IGF1) and 16 upregulated in Endo MSCs compared to BM ($p < 0.05 \rightarrow$ fourfolds). They included mostly cytokine and growth factor genes G-CSF, GM-CSF, VWF, IL1b, GDF15, and KDR. VEGF and G-CSF levels were higher in Endo MSCs supernatants ($p < 0.0001$). Cells sharing MSC and endothelial cell characteristics could be isolated from the human endometrium. Endo MSCs share a core genetic profile with BM MSCs including stemness. They show upregulation of genes involved in vasculogenesis, angiogenesis, cell adhesion, growth proliferation, migration, and differentiation of endothelial cells, all contributing to endometrial function.

Keywords: Mesenchymal stem cells; self-renewal microarray; 1 gene expression profile; 1 endometrium; 1 bone marrow mesenchymal stem cells.

615. FAS and FAS Ligand Gene Polymorphisms in Egyptian Females With Preeclampsia

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Journal of Reproductive Immunology, 104-105: 63-67 (2014) IF: 2.373

with preeclampsia, investigating whether the G 670 Fas gene variant and the Fas Ligand IVS2nt 124 G variant had a differential distribution in patients with preeclampsia. The preeclamptic group consisted of 50 pregnant women who developed preeclampsia, while the control group consisted of 50 age-matched pregnant women with uncomplicated pregnancies.

Fas and Fas ligand gene polymorphisms were tested using polymerase chain reaction–restriction fragment length polymorphism. Regarding the Fas 670 A > G polymorphism, statistically significant differences were found between the two groups regarding the AA and GG/AG genotypes as well as the A, G allele frequency, while no statistically significant differences were found regarding AG or GG genotypes. Regarding the FasLG IVS2nt124 A > G polymorphism, no statistically significant differences were found between the two groups studied. Concerning the Fas 670 A > G gene, no statistically significant differences between the severe and mild preeclampsia groups regarding the A allele frequency were found. Concerning the FasLG IVS2nt 124 A > G gene, there were no statistically significant differences between the severe and mild preeclampsia groups regarding the A allele frequency or the G allele frequency. The presence of the Fas gene polymorphism Fas A670G is associated with an increased risk of preeclampsia, while the presence of FasLG IVS2nt124 A > G gene may be protective against preeclampsia.

Keywords: FAS; FAS ligand genes; Gene polymorphisms.

616. International Nosocomial Infection Control Consortium (INICC) Report, Data Summary of 43 Countries for 2007-2012. Device-Associated Module

Rosenthal VD, Maki DG, Mehta Y, Leblebicioglu H, Memish ZA, Al-Mousa HH, Balkhy H, Hu B, Alvarez-Moreno C, Medeiros EA, Apisarnthanarak A, Raka L, Cuellar LE, Ahmed A, Navoa-Ng JA, El-Kholy AA, Kanj SS, Bat-Erdene I, Duszynska W, Van Truong N, Pazmino LN, See-Lum LC, Fernández-Hidalgo R, Di-Silvestre G, Zand F, Hlinkova S, Belskiy V, Al-Rahma H, Luque-Torres MT, Bayraktar N, Mitrev Z, Gurskis V, Fisher D, Abu-Khader IB, Berechid K, Rodríguez-Sánchez A, Horhat FG, Requejo-Pino O, Hadjieva N, Ben-Jaballah N, García-Mayorca E, Kushner-Dávalos L, Pasic S, Pedrozo-Ortiz LE, Apostolopoulou E, Mejia N, Gamar-Elanbya MO, Jayatilke K, de Lourdes-Dueñas M and Aguirre-Avalos G

American Journal of Infection Control, 42 (9): 942-956 (2014) IF: 2.326

We report the results of an International Nosocomial Infection Control Consortium (INICC) surveillance study from January 2007-December 2012 in 503 intensive care units (ICUs) in Latin America, Asia, Africa, and Europe. During the 6-year study using the Centers for Disease Control and Prevention's (CDC) U.S. National Healthcare Safety Network (NHSN) definitions for device-associated health care-associated infection (DA-HAI), we collected prospective data from 605,310 patients hospitalized in the INICC's ICUs for an aggregate of 3,338,396 days. Although device utilization in the INICC's ICUs was similar to that reported from ICUs in the U.S. in the CDC's NHSN, rates of device-associated nosocomial infection were higher in the ICUs of the INICC hospitals: the pooled rate of central line-associated bloodstream infection in the INICC's ICUs, 4.9 per 1,000 central line days, is nearly 5-fold higher than the 0.9 per 1,000 central line days reported from comparable U.S. ICUs. The overall rate of ventilator-associated pneumonia was also higher (16.8 vs 1.1 per 1,000 ventilator days) as was the rate of catheter-associated urinary tract infection (5.5 vs 1.3 per 1,000 catheter days). Frequencies of resistance of *Pseudomonas* isolates to amikacin (42.8% vs 10%) and imipenem (42.4% vs 26.1%) and *Klebsiella pneumoniae* isolates to ceftazidime (71.2% vs 28.8%) and imipenem (19.6% vs 12.8%) were also higher in the INICC's ICUs compared with the ICUs of the CDC's NHSN.

Keywords: Antibiotic resistance; Bloodstream infection; Catheter-associated urinary tract infection; Central line-associated bloodstream infections; Developing countries; Device-associated infection; Health care-associated infection; Hospital infection; Limited resources countries; Low income countries; Network; Nosocomial infection; Urinary tract infection; Ventilator-associated pneumonia.

617. Blood Spot Versus Plasma Chitotriosidase: A Systematic Clinical Comparison

Mohamed A. Elmonem, Dalia I. Ramadan, Marianne S.M. Issac, Laila A. Selimb and Sara M. Elkateb

Clinical Biochemistry, 47: 38-43 (2014) IF: 2.229

Objectives: This study aimed to evaluate the agreement between blood spot and plasma chitotriosidase using the economic substrate 4-methylumbelliferyl - β -D-N,N',N"-triacetylchitotrioside, and to investigate the utility of the blood

spot assay for the wide scale screening for lysosomal storage disorders among the clinically suspected.

Design and Methods: Blinded blood spot samples were compared with the corresponding plasma levels in 199 children (56 with confirmed diagnoses of ten different lysosomal storage disorders, 73 normal controls and 70 pathological controls). Several performance criteria (limit of detection, linearity, within-run and day-to-day precision and sample stability) were also evaluated.

Results: Plasma assay performed better by most criteria; however, blood spot performance was quite satisfactory. Quantitative values of the two methods can't be used interchangeably based on their 95% limits of agreement. Diagnostic sensitivity and specificity derived from ROC curves were 75.0 and 85.3% for the plasma assay and 71.4 and 79.0% for the blood spot assay, respectively. Cohen's kappa was 0.72 (95% CI: 0.616–0.821) denoting a good categorical agreement between the two methods.

Conclusion: The clinical use of blood spot chitotriosidase for the screening of lysosomal storage disorders can be quite practical, provided proper cut-off values are determined for each lab.

Keywords: Chitotriosidase; Dried blood spot; Lysosomal storage disorder; Clinical agreement.

618. Factor V Leiden 1691G/A and Prothrombin Gene 20210G/A Polymorphisms as Prothrombotic Markers in Adult Egyptian Acute Leukemia Patients

Azza Hamdy El Sissy, Maha H. El Sissy and Shereef Elmoamly

Medical Oncology, 31(11): 1-7 (2014) IF: 2.058

Factor V Leiden 1691G/A and prothrombin gene 20210G/A mutations are the most common genetic defects leading to thrombosis. This work aimed to study the FV Leiden and the prothrombin gene polymorphism in adult Egyptian patients with acute leukemia and their importance in thrombophilia screening. The study included 76 patients with acute leukemia and 100 healthy controls. Genotyping was done by real-time polymerase chain reaction technique. For factor V Leiden, the frequency of G/A mutation conferred more than 2.5-fold of increased risk of (OR 2.639 95 % CI 1.045–6.669). The frequency of factor V Leiden combined (G/A +A/A) genotypes conferred 2.83-fold of increased risk (OR 2.828, CI 1.13–7.075), The A allele conferred almost threefold increased risk (OR 2.824, 95 % CI 1.175–6.785). Despite higher frequency in patients compared to controls, there was no risk of association between prothrombin gene mutation and acute leukemia in adult Egyptians nor was there between combined genotypes of prothrombin gene mutation and factor V Leiden.

Keywords: Factor V prothrombin leukemia egypt.

619. Methylene Tetrahydrofolate Reductase (MTHFR) Gene Polymorphisms in Chronic Myeloid Leukemia: An Egyptian Study

Mervat Mamdooh Khorshied, Iman Abdel Mohsen Shaheen, Reham E. Abu Khalil and Rania Elsayed Sheir

Medical Oncology, 31(1): 794-799 (2014) IF: 2.058

Methylenetetrahydrofolate reductase (MTHFR) gene plays a pivotal role in folate metabolism. Several genetic variations in MTHFR gene as MTHFR-C677T and MTHFR-A1298C result in decreased MTHFR activity, which could influence efficient DNA

methylation and explain susceptibility to different cancers. The etiology of chronic myeloid leukemia (CML) is obscure and little is known about individual's susceptibility to CML. In order to assess the influence of these genetic polymorphisms on the susceptibility to CML and its effect on the course of the disease among Egyptians, we performed an age-gender-ethnic matched case-control study. The study included 97 CML patients and 130 healthy controls. Genotyping of MTHFR-C677T and -A1298C was performed by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) technique. The results showed no statistical difference in the distribution of MTHFR-C677T and -A1298C polymorphic genotypes between CML patients and controls. The frequency of MTHFR 677-TT homozygous variant was significantly higher in patients with accelerated/blastic transformation phase when compared to those in the chronic phase of the disease. In conclusion, our study revealed that MTHFR-C677T and -A1298C polymorphisms could not be considered as genetic risk factors for CML in Egyptians. However, MTHFR 677-TT homozygous variant might be considered as a molecular predictor for disease progression.

Keywords: MTHFR; C677t; A1298c; CML; Pcr; Rflp.

620. Interleukin 28B Polymorphisms and Therapy Response in Egyptian Hepatitis C Genotype-4 Patients

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DNA and Cell Biology, 33(9): 642-646 (2014) IF: 1.991

Hepatitis C infection represents a major health problem in Egypt; only 20% of patients undergo spontaneous clearance of the virus and around 25% of all patients progress to develop cirrhosis. More than 90% of Egyptian patients have hepatitis C virus (HCV) genotype-4. Combined pegylated interferon and oral ribavirin are the current standard therapies for HCV-4. The aim of the work is to evaluate the predictive power of the rs12979860IL28B SNP and rs12980275 IL28B SNP for treatment response in Egyptian patients infected with HCV genotype 4. One hundred eleven HCV patients receiving combined treatment were studied for rs12979860 and rs12980275 polymorphisms by the restriction fragment length polymorphism technique. The rs12979860 CC and rs12979860 AA genotypes were significantly associated with sustained virological response (p=0.001). Our results suggest that studying IL28B polymorphisms contribute to proper prediction of response to standard therapies in Egyptian patients, optimizing cost effectiveness, and minimizing unneeded adverse effect of therapy.

Keywords: IL28- Rs12980275-Rs12979860i.

621. Evaluation of Cytokines in Follicular Fluid and Their Effect on Fertilization and Pregnancy Outcome

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Immunological Investigations, 43: 572-584 (2014) IF: 1.903

Cytokines in follicular fluid (FF) are important for reproduction as they modulate oocyte maturation and ovulation which influence subsequent fertilization, development of early embryo and potential for implantation. We evaluated FF cytokines in women who underwent intracytoplasmic sperm injection (ICSI)

and their association with fertilized oocytes, embryo quality and pregnancy outcome. FF belonging to 38 patients including 18 polycystic ovary (PCO) and 20 male/unexplained infertility patients were investigated for granulocyte colony stimulating factor (G-CSF), regulated upon activation normal T cell expressed and presumably secreted (RANTES), tumour necrosis factor (TNF α), interferon gamma (IFN α) and interleukins (IL-4 and IL-2) by bead-based sandwich immunoassay. Our findings revealed that on the day of oocyte retrieval, G-CSF was positively correlated with the number of fertilized oocytes, while TNF α detection was associated with reduced number of fertilized oocytes. Only G-CSF showed significant positive effect to the pregnancy outcome although the cytokines studied were not associated with embryo quality. PCO as the cause of infertility did not show an association with cytokines in FF. The functions of cytokines in reproduction are likely to be complex, and cytokine evaluation may offer insight to the understanding of the mechanisms leading to success or failure of assisted reproduction.

Keywords: Follicular Fluid; G-Csf; Il-4; Intracytoplasmic sperm injection; Rantes; TNF.

622. Frequency of CYP2C9 and VKORC1 Gene Polymorphisms and Their Influence on Warfarin Dose in Egyptian Pediatric Patients

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Pediatric Drugs, 16(4): 337-341 (2014) IF: 1.721

Introduction: Warfarin is a widely used anticoagulant that shows a high inter-individual variability in the dose needed to achieve target anticoagulation. In adults, common genetic variants in the cytochrome P450-2C9 (CYP2C9) and vitamin K epoxide reductase complex (VKORC1) enzymes, in addition to non-genetic factors, explain this dose variability. In children, data about warfarin pharmacogenetics are limited and inconsistent.

Methods: CYP2C9 (*2 and *3) alleles and the VKORC1 (C1173T and G-1639A) polymorphisms were studied by multiplex real time polymerase chain reaction in 41 pediatric patients who received stable warfarin maintenance dose.

Results: The allele frequency of the studied genes was CYP2C9*2 (0.085), CYP2C9*3 (0.12), VKORC1 1173T (0.52), and VKORC1 -1639A (0.54). In univariate analysis, patients' age, weight, and height were significantly ($p < 0.0001$) associated with warfarin maintenance dose. However, CYP2C9 and VKORC1 gene polymorphisms did not affect warfarin dose. In multivariate analysis, age was found to be the only significant determinant of daily warfarin maintenance dose ($p = 0.045$).

Conclusion: Age was the most significant determinant of warfarin dosage in this preliminary study including Egyptian pediatric patients. Further studies involving larger numbers of children are warranted to determine the true impact of genetic factors on warfarin doses in pediatric patients.

Keywords: CYP2C9; VKORC1; Warfarin.

623. Tumor Necrosis Factor-A -308G/A Gene Polymorphism in Egyptian Children With Immune Thrombocytopenic Purpura

Maha H. El Sissy, A.H. El Sissy and Sherif Elanwary

Blood Coagulation and Fibrinolysis, 25(5): 458-463 (2014) IF: 1.38

Immune thrombocytopenic purpura (ITP) is an autoimmune disease characterized by increased platelet destruction. Although the cause of ITP remains unclear, it is accepted that both environmental and genetic factors play an important role in the development of the disease. Children with ITP have a T-helper 1-type cytokine pattern with elevated levels of tumor necrosis factor-alpha (TNF- α) as in most autoimmune diseases. Researchers have shown that polymorphism in the TNF- α gene at position S308 affects gene transcriptions with increased TNF- α production. The current case-control study aimed at detecting the frequency of TNF- α S308G/A gene polymorphism as genetic markers in Egyptian children with ITP, and to clear out their possible role in choosing the treatment protocols of therapy, using PCR restriction fragment length polymorphism assay. Ninety-two ITP patients and 100 age and sex-matched healthy controls were recruited in the study. The results obtained revealed that the frequency of TNF- α S308A/A homotype in ITP patients was significantly higher than that of the controls, and conferred almost six-fold increased risk of ITP acquisition. The polymorphic A allele frequency was significantly higher in ITP patients than in the controls, conferring almost two-fold increased ITP risk. In conclusion, our study suggests the possibility that TNF- α S308 gene polymorphism may contribute to the susceptibility of childhood ITP in Egyptian children. Blood Coagul Fibrinolysis 25:000-000 2014 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Keywords: ITP Egyptian Tumor Necrosis Factor-Alpha; Immune Thrombocytopenic Purpura.

624. Risk Factors of Prolonged Hospital Stay in Children With Viral Severe Acute Respiratory Infections

El Kholy AA, Mostafa NA, Ali AA, El-Sherbini SA, Ismail RI, Magdy RI, Soliman MS and Said MM.

Journal of Infection in Developing Countries, 15: 1285-93 (2014) IF: 1.267

Introduction: Severe acute lower respiratory infections (SARIs) are one of the major causes of morbidity and mortality in young children, especially in developing countries. The present study focused on detection of risk factors for prolonged hospital stays among children with viral SARIs.

Methodology: A sentinel surveillance study was conducted at Cairo University Hospital (CUH) between February 2010 and May 2011. Nasopharyngeal (NP) and oropharyngeal (OP) swabs were collected from all children admitted with SARIs. Viruses were identified using reverse transcription polymerase chain reaction (RT-PCR).

Results: Out of 1,046 children, 380 (36%) were positive for one or more viruses; these included respiratory syncytial virus (RSV) (22.9%), adenovirus (6.2%), parainfluenza viruses (PIVs1-3) (5.1%), human metapneumovirus (HMPV) (4.5%), influenza A (1.4%), and influenza B (0.6%). Viral etiology was mainly detected in children under one year of age (88.9%). Prolonged length of stay was independently associated with the presence of cyanosis and underlying chronic illness (OR 7.4, CI: 1.8-30.32 [$p = 0.005$], OR 2.5, CI: 1.36-4.64 [$p = 0.004$], respectively). Virus type did not affect the length of hospital stay ($p > 0.05$). Oxygen therapy was required in 91% of the patients. A total of 43 patients (11.6%) required intensive care admission. Twenty-one patients (5.5%) died, and 15 of them (71.4%) had an underlying chronic illness.

Conclusions: The study demonstrated the important burden of respiratory viruses as a cause of SARI in hospitalized children in a tertiary Egyptian hospital. Cyanosis and underlying chronic illness were significantly associated with prolonged length of stay.

Keywords: Respiratory Viruses; Children; SARI; Prolonged Stay.

625. Association of the Luteinizing Hormone/Choriogonadotropin Receptor Gene Polymorphism With Polycystic Ovary Syndrome

Yasmin Ahmed Bassiouny, Walaa Ahmed Rabie, Ayman Ahmed Hassan and Rania Kamal Darwish

Gynecological Endocrinology, 30: 428-430 (2014) IF: 1.136

This study aimed at evaluating possible associations of the single nucleotide polymorphism (SNP) in luteinizing hormone/choriogonadotropin receptor (LHCGR) gene G935A and polycystic ovary syndrome (PCOS) phenotype. The study included 100 PCOS female patients and 60 healthy female control subjects. The patients were recruited from the Gynecology outpatient clinic, Kasr Al-Aini Hospital, Cairo University. All candidates underwent full history taking and clinical examination with calculation of body mass index. Serum and EDTA samples were collected from each patient after a written consent. A hormonal profile was done for each patient as well as DNA analysis of the G935A polymorphism of LHCGR gene. In PCOS group, 26% were homozygous (AA), 27% were heterozygous (GA) and 47% were wild genotype (GG), while in controls 30% were heterozygous and 70% were wild genotype (OR: 2.25; CI: 1.16–4.386; p value: 0.012). The homozygous 935A individuals were at higher risk to develop PCOS than controls (OR: 1.80; CI: 1.54–2.09; p value 50.001). We found a genetic variant, which is associated with PCOS in a sample of the Egyptian population. These results may provide an opportunity to test this SNP at the LHCGR gene in fertile or infertile women with family history to assess their risk of PCOS.

Keywords: G935a Polymorphism; Genetic factors; Luteinizing hormone/choriogonadotropin receptor gene; Polycystic ovary syndrome; Polymerase chain reaction-restriction Fragment Length Polymorphism Technique; Single nucleotide polymorphism.

626. Detection of Trisomy 4 and 10 in Egyptian Pediatric Patients With Acute Lymphoblastic Leukemia

Somaia Mousa, Shady Mostafa, Iman Shaheen and Esam Elnoshokaty

Clinical Laboratory, 60 (4): 609-614 (2014) IF: 1.084

Background: Improvement in cure rates for children with acute lymphoblastic leukemia (ALL) has focused attention on better methods of identifying patients with increased or decreased risk of treatment failure. Chromosome aberrations have a major role in pediatric ALL risk assessment. The aim of this work is to detect the frequency of trisomy 4 and 10 in Egyptian pediatric ALL patients and to analyze their possible prognostic significance.

Methods: Forty newly diagnosed pediatric ALL patients were subjected to bone marrow aspirate morphological examination and immunophenotyping. Detection of copy number of chromosome 4 and 10 was done using Fluorescence In Situ

Hybridization (FISH) technique using whole chromosome painting probes.

Results: Combined trisomy 4 and 10 was detected in 7 cases (17.5%), all of them were of B-ALL type. Single trisomy 4 or 10 was not detected in any case. Trisomy positive patients had a statistically significant lower total leucocytic count (p = 0.041), higher platelet count (p = 0.018), and lower blast percentage in peripheral blood (p = 0.016) at diagnosis.

Conclusions: Combined trisomy 4 and 10 identifies a group of ALL patients that have good prognostic indicators. Screening of Egyptian pediatric ALL patients for trisomy 4 and 10 may help in "patients' stratification" aiming to develop a risk-adapted therapy in order to minimize therapy related morbidities particularly in children.

Keywords: Acute Lymphoblastic Leukemia, Trisomy 4, Trisomy 10, FISH, Prognosis.

627. Plasma Annexin A5, Anti-Annexin A5 Antibodies and Annexin A5 Polymorphism in Egyptian Female Patients With Systemic Lupus Erythematosus and Antiphospholipid Syndrome

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Clinical Laboratory, 60 (1): 133-137 (2014) IF: 1.084

Background: Annexin A5 exhibits anticoagulant properties that appear to be defective in patients with antiphospholipid syndrome (APS) resulting in repeated thrombosis and recurrent pregnancy loss (RPL). APS occurs frequently in association with systemic lupus erythematosus (SLE). The present study aimed to find out a possible relationship between annexin A5 (gene polymorphism, antibodies or plasma level) and the pathophysiology of SLE, APS and RPL.

Methods: 47 female patients divided into 3 groups (SLE, APS and RPL) and 20 healthy controls are included in the study. Detection of annexin A5 (-1C/T) gene polymorphism was done by Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) assay. Anti-annexin A5 antibodies (IgG and IgM) and annexin A5 plasma level were measured by Enzyme Linked Immunosorbent Assay (ELISA).

Results: The frequency of annexin A5 (-1C/T) polymorphism was significantly higher in SLE related groups (p = 0.02), but it did not correlate with RPL (p = 0.57) or annexin A5 level (p = 0.5). Anti-annexin A5 IgM level was significantly higher among APS patients and was associated with RPL (p = 0.005, odds ratio = 23.75, 95% confidence interval = 2.15 - 262.48).

Conclusions: Annexin A5 (-1C/T) gene mutation may play a role in the pathophysiology of SLE. Anti-annexin A5 IgM was the antibody associated with RPL in this group of APS patients. Annexin A5 plasma levels are not affected by the presence of annexin A5 (-1C/T) polymorphism.

Keywords: Annexin A5; Annexin A5 (-1C/T) Polymorphism; Systemic Lupus Erythematosus; Antiphospholipid Syndrome; Recurrent Pregnancy Loss.

628. Low Incidence of Adamts13 Missense Mutation R1060w in Adult Egyptian Patients With thrombotic Thrombocytopenic Purpura

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Acta Haematol - Basel, 132: 30-35 (2014) IF: 0.994

Thrombotic thrombocytopenic purpura (TTP) is an acute life-threatening disorder, characterized by thrombocytopenia, microangiopathic hemolytic anemia, widespread microvascular thrombi and consequent clinical sequelae due to ischemic organ damage. TTP is most commonly associated with deficiency or inhibition of von Willebrand factor-cleaving protease (ADAMTS13) activity. ADAMTS13 mutations and polymorphisms have been reported in childhood congenital TTP, but their significance in adult-onset TTP is still under investigation. Two mutations stand out: the single base insertion 4143insA in exon 29 and the missense mutation R1060W in exon 24 have both been observed in several unrelated families, mainly in adult-onset TTP, and over a wide geographic area. Our objective in this study is to identify the prevalence of R1060W missense mutation in exon 24 ADAMTS13 in a sample of adult Egyptian TTP patients. Thirty-one adult-onset TTP patients were included in this study, with a male/female ratio of 1: 4. Twenty-six cases (84%) presented with acute idiopathic TTP, 2 cases were drug abusers and 3 cases were pregnant. None of the study cases provided a history of suspicious TTP symptoms during childhood (2 cases gave a history of episodes of thrombocytopenia during childhood). All cases showed statistically significant decreased ADAMTS13 activity compared to normal controls ($p < 0.001$). The study revealed a high statistical difference regarding the ADAMTS13 inhibitor level in primary versus secondary cases ($p = 0.003$). None of our Egyptian cases or of the healthy normal controls are positive for exon 24 missense mutation. Larger studies and regional and national TTP registries are recommended.

Keywords: ADAMTS13; Missense mutation R1060W; Thrombotic thrombocytopenic Purpura.

629. Glutathione S-Transferase Gene Polymorphisms (GSTM1, GSTT1, and GSTP1) in Egyptian Pediatric Patients With Sickle Cell Disease

Hala Fathy Shiba, Mona Kamal El-Ghamrawy, Iman Abd El-Mohsen Shaheen, Rasha Abd El-Ghani Ali and Somaia Mohammed Mousa

Pediatric and Developmental Pathology, 17(4): 265-270 (2014) IF: 0.857

Sickle cell disease (SCD) complications are associated with oxidative stress. Glutathione S-transferases (GSTs) are a group of enzymes that protect against oxidative stress. The aims of this study was to evaluate the prevalence of GSTM1, GSTT1, and GSTP1 gene polymorphisms among homozygous sickle cell anemia patients and to investigate the possible association between the presence of these polymorphisms and SCD severity and complications. Genotyping the polymorphisms in GSTT1 and GSTM1 genes was performed using the multiplex polymerase chain reaction (PCR) method. The GSTP1 Ile105Val polymorphism was determined using PCR-restriction fragment length polymorphism. GSTM1 null genotype was significantly associated with increased risk of severe vaso-occlusive crises (VOC) (odds ratio 5.152, 95% confidence interval = 0.42–5.56, $P = 0.005$). We found no significant association between GST genotypes and frequency of sickle cell-related pain, transfusion frequency, disease severity, or hydroxyurea treatment. GSTM1 gene polymorphism may be associated with risk of severe VOC among Egyptian SCD patients.

Keywords: Egypt; Glutathione S-Transferase; Polymorphism.

630. Association of Interferon- γ Inducible Protein-10 Pretreatment Level and Sustained Virological Response in Hcv-Positive Egyptian Patients

Omran D., Hamdy S., Tawfik S., Esmat S., Saleh D.A. and Zayed R.A.

Annals of Clinical & Laboratory Science, 44(2): 169-174 (2014) IF: 0.839

Background: The response to antiviral therapy in HCV infected patients depends on several predictive factors; however, the ability to achieve sustained virological response is still limited to around 60% of the patients infected with the HCV-4 genotype. Increased serum and intrahepatic interferon- γ inducible protein 10 (IP-10) levels in patients with chronic hepatitis C have been described. The aim of the work was to study the impact of pretreatment serum IP-10 level on the antiviral treatment outcome in a group of Egyptian patients infected with HCV.

Materials and Methods: The study included 80 treatment naive HCV patients. Serum IP-10 levels were determined by an enzyme linked immunosorbent assay before therapy was introduced. Serum samples were examined twice by Real-Time PCR after complete

course of therapy for detection of HCV RNA; at the end of the antiviral therapy and six months later to detect sustained virological response (SVR). Results. 57 patients (71%) achieved SVR while 23 (29%) patients were non-responders (NR). Pretreatment serum IP-10 levels were significantly lower in patients who achieved SVR than in NR ($p=0.000$).

Conclusion: Low pretreatment serum IP-10 is a favorable predictive of response to antiviral HCV therapy in Egyptian patients.

Keywords: HCV; Predictors, Response, Therapy, Ip-10

631. Mesenchymal Stem Cells from Pediatric Patients With Aplastic Anemia: Isolation, Characterization, Adipogenic, and Osteogenic Differentiation

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Fetal and Pediatric Pathology, 33(1): 9-15 (2014) IF: 0.398

Aplastic anemia is a syndrome of bone marrow (BM) failure characterized by peripheral pancytopenia and marrow hypoplasia. Its exact pathophysiology is still not clear. Mesenchymal stem cells (MSCs) play an important role in providing the specialized BM microenvironment for hematopoietic stem cells survival and differentiation. MSCs were isolated from BM of five patients with aplastic anemia and five controls. MSCs were characterized by morphology and immunophenotyping. Their viability, proliferative capacity, and adipogenic as well as osteogenic differentiation potentials were assessed. MSCs from aplastic anemia patients and controls shared similar spindle-shaped morphology and surface marker expression. MSCs derived from patients with aplastic anemia showed lower viability ($74.2 \pm 4.44\%$ vs. 97.0 ± 1.58 , $p < 0.0001$) and slower expansion rate as indicated by smaller population doubling and smaller cumulative population doubling from passages 1 to 4 (0.70 ± 0.22 vs. 2.34 ± 0.84 ; $p = 0.009$). Besides, aplastic anemia MSCs had poor capacity to differentiate into adipocytic and osteocytic lineages.

Keywords: Aplastic anemia; Hematopoiesis; Mesenchymal stem cells; Bone marrow microenvironment.

Dept. of Clinical Oncology and Nuclear Medicine

632. Second Cancer Risk After 3D-CRT, IMRT and VMAT for Breast Cancer

Abo-Madyan Y, Aziz MH, Aly MM, Schneider F, Sperk E, Clausen S, Giordano FA, Herskind C, Steil V, Wenz F and Glatting G

Radiotherapy and Oncology, 110 (3):471-476 (2014) IF: 4.857

Purpose: Second cancer risk after breast conserving therapy is becoming more important due to improved long term survival rates. In this study, we estimate the risks for developing a solid second cancer after radiotherapy of breast cancer using the concept of organ equivalent dose (OED).

Materials and Methods: Computer-tomography scans of 10 representative breast cancer patients were selected for this study. Three-dimensional conformal radiotherapy (3D-CRT), tangential intensity modulated radiotherapy (t-IMRT), multibeam intensity modulated radiotherapy (m-IMRT), and volumetric modulated arc therapy (VMAT) were planned to deliver a total dose of 50 Gy in 2 Gy fractions. Differential dose volume histograms (dDVHs) were created and the OEDs calculated. Second cancer risks of ipsilateral, contralateral lung and contralateral breast cancer were estimated using linear, linear-exponential and plateau models for second cancer risk.

Results: Compared to 3D-CRT, cumulative excess absolute risks (EAR) for t-IMRT, m-IMRT and VMAT were increased by $2 \pm 15\%$, $131 \pm 85\%$, $123 \pm 66\%$ for the linear-exponential risk model, $9 \pm 22\%$, $82 \pm 96\%$, $71 \pm 82\%$ for the linear and $3 \pm 14\%$, $123 \pm 78\%$, $113 \pm 61\%$ for the plateau model, respectively.

Conclusion: Second cancer risk after 3D-CRT or t-IMRT is lower than for m-IMRT or VMAT by about 34% for the linear model and 50% for the linear-exponential and plateau models, respectively.

Keywords: Breast cancer; Intensity modulated radiation therapy (IMRT); Organ equivalent dose (OED); Second cancer risk.

633. INTRAGO: Intraoperative Radiotherapy in Glioblastoma Multiforme—A Phase I/II Dose Escalation Study

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BMC Cancer, 14: (2014) IF: 3.319

Background: Glioblastoma multiforme (GBM) is the most frequent primary malignant brain tumor in adults. Despite multimodal therapies, almost all GBM recur within a narrow margin around the initial resected lesion. Thus, novel therapeutic intensification strategies must target both, the population of dispersed tumor cells around the cavity and the postoperative microenvironment. Intraoperative radiotherapy (IORT) is a pragmatic and effective approach to sterilize the margins from persistent tumor cells, abrogate post-injury proliferative stimuli and to bridge the therapeutic gap between surgery and radiochemotherapy. Therefore, we have set up INTRAGO, a phase I/II dose-escalation study to evaluate the safety and tolerability of IORT added to standard therapy in newly diagnosed GBM. In contrast to previous approaches, the study

involves the application of isotropic low-energy (kV) x-rays delivered by spherical applicators, providing optimal irradiation properties to the resection cavity.

Methods/Design: INTRAGO includes patients aged 50 years or older with a Karnofsky performance status of at least 50% and a histologically confirmed (frozen sections) supratentorial GBM. Safety and tolerability (i.e., the maximum tolerated dose, MTD) will be assessed using a classical 3 + 3 dose-escalation design. Dose-limiting toxicities (DLT) are wound healing deficits or infections requiring surgical intervention, IORT-related cerebral bleeding or ischemia, symptomatic brain necrosis requiring surgical intervention and early termination of external beam radiotherapy (before the envisaged dose of 60 Gy) due to radiotoxicity. Secondary end points are progression-free and overall survival.

634. Differentiated Thyroid Carcinoma: An Analysis of 249 Patients Undergoing Therapy and Aftercare At A Single Institution

Amin A, Badwey A and El-Fatah S.

Clin Nucl Med, 39 (2): 142-146 (2014) IF: 2.857

Purpose: Well-differentiated thyroid cancer (WDTC) is rising in incidence across the world over the past 3 decades. We aimed to evaluate the natural history and clinical outcome of differentiated thyroid carcinoma by a retrospective analysis of 249 patients treated at a single institution.

Methods: A cohort of 249 patients who underwent thyroidectomy for WDTC in the last 10 years in Maadi Military Hospital was studied. Main outcome measures were clinical management at the diagnosis, survival, morbidity, and prognostic risk factors.

Results: Mean age at diagnosis was 44.7 (SD, 14.6) years, where 52.2% were 45 years or older. Females represent 70.7% ($P = 0.01$), with female-to-male ratio of 4.1:1. Near-total thyroidectomy was done in 70.7% of the cases where papillary cancer was found in 80.8% and node metastasis in 10.5%. Radioactive ^{131}I (RA ^{131}I) was given in all cases (dose range, 80Y150 mCi) with ablation success rate of 79.2%. Locoregional recurrence and metastasis (lungs and bones) were found in 2% and 6.8%, respectively. Multivariate Cox regression analysis showed that the mean ablation dose of RA ^{131}I (odds ratio, 1.045; 95% confidence interval, 0.936Y1.1189; $P = 0.01$) and presence of remote deposits (odds ratio, 1.049; 95% confidence interval, 0.836Y1.1189; $P = 0.01$) are the significant influential factor in ablation success rate and survival, respectively.

Conclusions: Our data suggest that proper ablation dose of RA ^{131}I and absence of remote metastasis are the powerful predictors for excellent outcome in WDTC patients.

Keywords: Radioactive ^{131}I ; Well-differentiated thyroid Carcinoma; Prognosis; Survival.

635. Response Rate and Factors Affecting the Outcome of A Fixed Dose of Rai-131 Therapy in Graves' Disease: A 10-Year Egyptian Experience

El-Kareem MA, Derwish WA and Moustafa HM.

Nuclear Medicine Communications, 35: 900-907 (2014) IF:1.371

The aim of this study was to evaluate response and compare the success rate of two different doses of iodine-131 (^{131}I) therapy in the treatment of Graves' disease and investigate the factors that may affect outcome. A retrospective analysis was carried out on

321 patients treated with ^{131}I for Graves' disease. Group 1 (155 patients) received 8 mCi and group 2 (166 patients) received 12 mCi. The therapy was considered successful if euthyroidism or hypothyroidism was achieved within 1 year of therapy. The outcome was compared with multiple parameters. A significant difference in the outcome between the two groups was found in favor of the second group ($P < 0.001$). Logistic regression analysis showed that lower dose, technetium-99m pertechnetate thyroid uptake greater than 20.9%, and moderate and marked goiter were independent variables associated significantly with a lower response rate (odds ratio 2.601, 4.023, and 3.309, respectively), whereas previous surgical treatment was associated with a higher response rate (odds ratio 3.071). No correlation was found between outcome and age, presence of exophthalmos, previous treatment with methimazole, and its duration. The response rate to the second dose was significantly increased compared with the first one by 27.8%; there was no correlation among the above-mentioned factors and its outcome. The third dose controlled the disease in 81.3% of the remaining patients and control was achieved in the rest after the fourth dose. ^{131}I is a very effective therapy for Graves' disease, with a cure rate of 100% after four doses. Higher first dose activity is recommended in the presence of poor prognostic factors. The second dose is not necessarily increased in the nonresponders.

Keywords: Fixed dose; Graves' disease; Radioactive iodine therapy; Tc-99 Pertechnetate Thyroid Uptake.

636. A Novel Approach for Superficial Intraoperative Radiotherapy (IORT) Using A 50 kV X-ray Source: A Technical and Case Report

Frank Schneider, Sven Clausen, Johannes Thölking, Frederik Wenz and Yasser Abo-Madyan

Journal of Applied Clinical Medical Physics, 15 (1): (2014) IF: 1.11

The use of IORT as a treatment modality for patients with close or positive margins has increased over the past decade. For situations where a flat area (up to 6 cm in diameter) has to be treated intraoperatively, new applicators for superficial treatment with a miniature X-ray source (INTRABEAM system) were developed. Here we report our evaluation of the dosimetric characteristics of these new applicators and their first clinical use. Each of these flat and surface applicators consists of a radiation protective metal tube and a flattening filter, which converts the spherical dose distribution of the X-ray source into a flat one. The homogeneity of each dose distribution and depth-dose measurements were evaluated using film dosimetry in a solid water phantom and a soft X-ray ionization chamber in a water tank. The first patient was treated with 5 Gy delivered in 5 mm using a 4 cm FLAT applicator over 21 minutes. The flat applicators show the maximum homogeneity, with a uniformity ratio of 1.02–1.08 in certain depths. In 1 mm depth surface applicators show a uniformity ratio of 1.15–1.28. They also show a higher dose rate and a steeper dose gradient compared to the flat applicators. The results of this investigation demonstrated that the flat and surface applicators have unique dosimetric characteristics that need to be considered during the treatment planning stages. This work also showed that it is possible to perform a superficial localized IORT which provides new application possibilities for use of the INTRABEAM system.

Keywords: Intraoperative radiotherapy; Electronic brachytherapy; X-ray; INTRABEAM radiotherapy system; Superficial radiotherapy.

Dept. of Clinical Pathology

637. Detection of Expression of IL 18 and Its Binding Protein in Egyptian Pediatric Immune Thrombocytopenic Purpura

Shahira Kamal Anis Botros

Platelets, 25: 193-196 (2014) IF: 2.627

Immune thrombocytopenic purpura (ITP) is an autoimmune disorder, characterized by dysfunctional cellular immunity including the presence of activated platelet specific autoreactive T cells that recognize and respond to autologous platelet antigens. Autoreactive T cells drive the generation of platelet reactive autoantibodies by B cells as well as T-cytotoxic cell-mediated lysis of platelets. Interleukin-18 (IL-18) is a mediator of T helper type 1 cell responses synergistically with IL-12 that initiate and promote host defense and inflammation. IL-18 has a specific binding protein (IL-18BP) which belongs to the immunoglobulin superfamily. In the present study, serum level and messenger RNA (mRNA) expression of IL-18 as well as IL-18BP mRNA expression were measured in peripheral blood mononuclear cells (PBMCs) of 100 Egyptian pediatric patients with ITP (70 acute and 30 chronic). In addition to this, we recruited 80 healthy volunteers in order to investigate the possible association between the imbalance of IL-18 and IL-18 BP expressions and the pathogenesis of ITP. IL-18 serum level and mRNA expression were not elevated in cases more than in the control group, but IL-18 mRNA was higher in chronic cases when compared to the acute ones ($p = 0.031$) and there was a good negative correlation between the platelet count and serum IL-18. IL-18 BP mRNA was slightly elevated in cases more than in the control group (95% Confidence interval 1.15–2.01). Our results were not supportive for previous findings of elevated IL18/BP mRNA ratio in ITP patients.

This could be referred to the fact that autoimmune diseases are complex genetic disorders, therefore further studies on polymorphisms affecting IL-18 gene expression as well as kinetics of IL-18 expression are required to evaluate the role of interleukin 18 and its binding protein in the pathogenesis of ITP.

Keywords: ITP, IL-18, Peripheral Blood Mononuclear Cells.

638. Immunoregulatory Cytokines Gene Polymorphisms in Egyptian Patients Affected With Acquired Aplastic Anemia

Iman R. El Mahgoub, Reham A. Aleem Afify, Shahira K. A. Botros and Rania Fawzy

Ann Hematol, 93: 923-929 (2014) IF: 2.396

The immune system is thought to play an important role in aplastic anemia (AA) in light of recent findings of hematologic reconstitution after immunosuppressive therapy. T cell activation, apoptosis, and the cytokines interferon- and TNF- α are suspected to play a role in the suppression of growth of progenitor cells and induced apoptosis in CD34 target cells, TGF β is a multifunctional peptide, usually produced in latent form and requiring activation to produce a biological response. Also, TGF- β 1 has been described as an important negative regulator of haemopoiesis.

Over production of IL-6 is described in AA but is of unknown pathophysiological significance. To investigate the role of cytokine gene polymorphisms (IL-6/-174, TNF- α -308, IFN- γ /+874, and TGF β 1/-509) in patients with acquired AA to assess if genotypes associated with higher or lower production were more prevalent than in established control population and to study the possible association of these genotypes with the disease severity. Fifty AA patients were included in this study. Polymerase chain reaction–amplification refractory mutation system (PCR–ARMS) technique was used to detect INF- γ single nucleotide polymorphism –874A/T, and polymerase chain reaction–restriction fragment length polymorphism (PCR–RFLP) was used to assess IL-6-174 C/G, TNF- α -308G/A, and TGF β 1-509C/T gene polymorphisms. Genotypes associated with high production of TNF- α , TGF- β and IFN- γ , and IL-6 were more frequent in patients than in control; no association was found between the presence of hypersecretory genotypes and the disease severity.

Keywords: Aplastic anemia; TNF- α ; INF- γ ; IL-6; TGF- β 1; Cytokine gene polymorphism.

639. Evaluation of Broad-Range 16S rRNA PCR for the Diagnosis of Bloodstream Infections: Two Years of Experience

Hassan RM, El Enany MG and Rizk HH

Journal of Infections In Developing Countries, 8 (10): 1252-1258 (2014) IF: 1.267

Introduction: Diagnosis of bloodstream infections using bacteriological cultures suffers from low sensitivity and reporting delay. Advanced molecular techniques introduced in many laboratories provide rapid results and may show improvements in patient outcomes. This study aimed to evaluate the usefulness of a molecular technique, broad-range 16S rRNA PCR followed by sequencing for the diagnosis of bloodstream infections, compared to blood culture in different patient groups.

Methodology: Conventional PCR was performed, using broad-range 16S rRNA primers, on blood cultures collected from different patients with suspected bloodstream infections; results were compared with those of blood culture.

Results: Though blood culture is regarded as the gold standard, PCR evaluation showed sensitivity of 86.25%, specificity of 91.25%, positive predictive value of 76.67%, negative predictive value of 95.22%, and accuracy of 88.8%.

Conclusions: Molecular assays seem not to be sufficient to replace microbial cultures in the diagnosis of bloodstream infections, but they can offer a rapid, good negative test to rule out infection due to their high negative predictive value.

Keywords: Blood stream infection; Blood cultures; 16S rRNA; PCR.

640. Stromal Cell Derived Factor-1 (CXCL12) Chemokine Gene Variant in Myeloid Leukemias

Hoda Mohamed A. El-Ghany, Zainab Ali El-Saadany, Nevien Mohamed Bahaa, Noha Yehia Ibrahim and Salwa Mahmoud Hussien

Clinical Laboratory, 60: 735-741 (2014) IF: 1.084

Background: Acute and chronic myeloid leukemia are initiated and sustained by a small, self-renewing population of leukemic stem cells, which produce progeny of a heterogeneous population

of progenitor cells. CXCL12, a chemokine abundantly produced by the bone marrow microenvironment, and its receptor CXCR4 have crucial roles in malignant cell trafficking. We set out to determine the CXCL12 gene polymorphism at codon G801A and evaluate its influence on malignant cell dissemination and tissue infiltration in myeloid leukemias. Methods: Genotyping for CXCL12 was done by restriction PCR-RFLP for 48 myeloid leukemia patients: 38 de novo AML and 10 CML. Fifty age and gender matched volunteers were evaluated as controls.

Results: Regarding AML patients, the frequency of wild genotype was 50% and the heterozygous genotype was 50%. In CML patients, the frequency of wild genotype was 30% while the heterozygous genotype was 70%. In the control group, 57.2% had wild genotype while 42.8% had heterozygous genotype with no significant difference detected between myeloid leukemia patients and the control group. There was a statistically insignificant association between wild and heterozygous genotypes regarding clinical, laboratory data and extramedullary dissemination.

Conclusions: CXCL12 polymorphism is not associated with either increased myeloid leukemia risk or extramedullary blast dissemination.

Keywords: CXCL12; AML; CML; RFLP-PCR.

641. MDM2 SNP309 and P53 Codon 72 Genetic Polymorphisms and Risk of AML: An Egyptian Study

Nabil Mohsen El-Danasouri, Shadia Hassan Ragab, Maha Ameen Rasheed, Zainab Ali El-Saadany and Safa Nabil Abd El-Fattah

Annals of Clinical and Laboratory Science, 44: 449-454 (2014) IF: 0.839

Background: Acute myeloid leukemia (AML) is a heterogeneous disease with numerous genetic abnormalities corresponding to a variety of subtypes. p53 is involved in multiple cellular pathways including apoptosis, transcriptional control, and cell cycle regulation. A single nucleotide polymorphism (SNP) at codon 72 of the p53 gene is associated with the risk for development of various neoplasms. MDM2 SNP309 is a single nucleotide T to G polymorphism located in the MDM2 gene promoter, which enhances the expression of MDM2 protein and thereby leads to attenuation of the p53 stress response.

Objective: The current study aimed to define the roles of MDM2 and p53 genetic polymorphisms with the risk of AML.

Methodology: Genotyping for MDM2 was done by AS-PCR technique while p53 codon 72 genotyping was done by PCR-RFLP for 50 patients and 50 controls.

Results: The study did not detect any significant differences regarding MDM2 or p53 polymorphisms in AML cases, as compared to controls. A borderline significance was found between cases and controls regarding combined MDM2 T/G and p53 genotyping. MDM2 variant genotype was significantly associated with a younger age group and lower Hb level, while the P53 variant was significantly associated with less frequent CD117 expression.

Keywords: MDM2; P53 codon 72; AML; AS-PCR; RFLP-PCR.

Dept. of Dermatology**642. Olopatadine Hydrochloride Decreases Tissue Interleukin-31 Levels in An Atopic Dermatitis Mouse Model**

Murota H, El-latif MA, Tamura T and Katayama I

Acta Dermato-Venereologica, 94: 78-79 (2014) IF: 4.244

Atopic dermatitis (AD) is an inflammatory skin disease characterized by an intensely pruritic skin rash (1). A variety of mediators, including histamine and neuropeptides, are involved in pruritus. We previously reported that olopatadine hydrochloride (olopatadine), a histamine H1 receptor antagonist, significantly suppresses the number of scratching events associated with a decreasing number of intraepidermal nerve fibres via increased semaphoring 3A expression and decreased nerve growth factor (NGF) levels in NC/Nga mice (2). Oral olopatadine (Kyowa Hakko Kirin, Tokyo, Japan) has been prescribed in Japan and Korea for treatment of allergic rhinitis, urticarial, pruritus, eczema, prurigo, psoriasis vulgaris, and erythema multiforme, which was covered by insurance. Recently, interleukin (IL)-31 was found to play a role in pruritus and skin barrier function in AD (3–5). It was reported that transgenic mice overexpressing IL-31 exhibit spontaneous pruritus and develop severe dermatitis (6). Moreover, serum and tissue IL-31 levels in patients with AD were increased compared with levels in control subjects, and IL-31 levels correlated with both disease activity and severity of AD (3, 7–9). Thus, we evaluated the effect of olopatadine on tissue IL-31 levels in an AD model using NC/Nga mice.

Keywords: Olopatadine; Interleukin; 31; Atopic dermatitis.**643. Beyond Vitiligo Guidelines: Combined Stratified/Personalized Approaches for the Vitiligo Patient**

Anbar TS, Hegazy RA, Picardo M and Taieb A.

Experimental Dermatology, 23: 219-223 (2014) IF: 4.115

‘Vitiligo’ is a word that bears endless possibilities and no promises. Each vitiligo patient has a different story that demands a different therapeutic approach. Even though great efforts have been made to evaluate, study, compare and document the different therapeutic modalities available for vitiligo, clearly handling their modes of actions as well as their side effects and establishing clear stratified guidelines, numerous dilemmas are frequently met on practical grounds. ‘Stabilize’, ‘repigment’, ‘depigment’ or ‘camouflage’? ‘for whom and how do we achieve the best results’? ‘Separately or in combination?’ – questions that need to be answered and decisions need to be taken in the appropriate timing and altered when the necessity arises. In the current viewpoint, we have utilized the available knowledge and exploited years of experience in an attempt to go beyond the guidelines to set the rationale for an optimal and personalized therapy, within the framework of a stratified approach.

Keywords: Guidelines; Repigmentation; Stabilization; Treatment; Vitiligo.**644. T Helper 17 and Tregs: A Novel Proposed Mechanism for NB-UVB in Vitiligo**

Hegazy RA, Fawzy MM, Gawdat HI, Samir N and Rashed LA.

Experimental Dermatology, 23: 283-286 (2014) IF: 4.115

Narrowband ultraviolet (NB-UV)B is accepted as corner stone therapy for vitiligo. Its influence on the expression of IL-17, IL-22 and FoxP3 as markers for the Th17 and Tregs lineages has not been studied before in the context of non-segmental vitiligo (NSV). The study included 20 active NSV patients who received 36 NB-UVB sessions and 20 controls. Clinical evaluation Vitiligo Area Scoring Index (VASI) and determination of tissue expression of IL-17, IL-22 and FoxP3 by qRT-PCR (lesional, perilesional) were carried out before and after therapy. Baseline levels of IL-17 and IL-22 were significantly higher in patients, whereas FoxP3 was significantly lower. After therapy, IL-17 and IL-22 significantly dropped, whereas FoxP3 significantly increased (lesional, perilesional). Baseline and post-treatment VASI showed significant positive correlations with IL-17 and IL-22 and significant negative correlation with FoxP3 expression. Restoration of the balance between Th17 and Tregs might represent a novel pathway for the improvement that NB-UVB exerts in vitiligo patients.

645. Topical Application of Rapamycin Ointment Ameliorates Dermatophagoides Farina Body Extract-Induced Atopic Dermatitis in NC/NGA Mice

Fei Yang, Mari Tanaka, Mari Wataya-Kaneda, Lingli Yang, Ayumi Nakamura, Shoji Matsumoto, Mostafa Attia, Hiroyuki Murota and Ichiro Katayama

Experimental Dermatology, 23: 568-572 (2014) IF: 4.115

Atopic dermatitis (AD), a chronic inflammatory skin disease characterized by relapsing eczema and intense prurigo, requires effective and safe pharmacological therapy. Recently, rapamycin, an mTOR (mammalian target of rapamycin) inhibitor, has been reported to play a critical role in immune responses and has emerged as an effective immunosuppressive drug. In this study, we assessed whether inhibition of mTOR signalling could suppress dermatitis in mice. Rapamycin was topically applied to inflamed skin in a murine AD model that was developed by repeated topical application of Dermatophagoides farina body (Dfb) extract antigen twice weekly for 7 weeks in NC/Nga mice. The efficacy of topical rapamycin treatment was evaluated immunologically and serologically. Topical application of rapamycin reduced inflammatory cell infiltration in the dermis, alleviated the increase of serum IgE levels and resulted in a significant reduction in clinical skin condition score and marked improvement of histological findings. In addition, increased mTOR phosphorylation in the lesional skin was observed in our murine AD model. Topical application of rapamycin ointment inhibited Dfb antigen-induced dermatitis in NC/Nga mice, promising a new therapy for atopic dermatitis.

Keywords: Atopic dermatitis; mTOR; Rapamycin.**646. Expression of Osteopontin Genotypes (T-4754-C and A-9138-C) in Psoriasis and their Relation to Metabolic Syndrome**

Rania Abdel Hay, Faisal Nour-Edin, Rehab Hegazy, Sayed Khadiga and Laila Rashed

Journal of Dermatological Science, 75: 150-153 (2014) IF: 3.335

Osteopontin (OPN) is a multifactorial molecule with a postulated key role in several T helper (Th) 1- and Th17-mediated diseases including psoriasis.

Genetic variants in the OPN gene have shown to be involved in susceptibility to immune-mediated diseases, and several OPN haplotypes were found to be associated with Crohn's disease (CD) susceptibility including (T-4754-c) and (A-9138-C) genotypes.

Owing to the common pathways linking between both psoriasis and CD [5], in the present study, we aimed to analyze the role of those particular OPN gene variants on psoriasis susceptibility as well as the association with metabolic syndrome (MetS) in such patients.

Keywords: Metabolic syndrome; Osteopontin; Psoriasis.

647. Homocysteine and Other Cardiovascular Risk Factors in Patients With Lichen Planus

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Journal of European Academy of Dermatology and Venereology, 28: 1507-1513 (2014) IF: 3.105

Background: Chronic inflammation was found to play an important role in the development of cardiovascular risk factors. Homocysteine (Hcy) and fibrinogen have been identified as a major independent risk factor for cardiovascular disease. Lichen planus is assumed to be closely related to dyslipidaemia. Several cytokines involved in lichen planus pathogenesis, could explain its association with dyslipidaemia. Also chronic inflammation with lichen planus has been suggested as a component of the metabolic syndrome.

Objective: The aim of this study was to detect a panel of cardiovascular risk factors in patients of lichen planus.

Patients and Methods: This study was done on 40 patients of lichen planus and 40 healthy controls. All patients and controls were subjected to clinical examination. Serum levels of homocysteine, fibrinogen and high-sensitive C-reactive protein (hs-CRP) were measured by enzyme-linked immunosorbent assay technique (ELISA). Metabolic syndrome parameters including anthropometric measures, lipid profiles, blood sugar and blood pressure were studied.

Results: Patients with lichen planus showed significant association with metabolic syndrome parameters than controls ($P < 0.001$). Serum homocysteine, fibrinogen and hs-CRP were significantly higher in lichen planus patients than controls ($P < 0.001$). Serum homocysteine correlated with both serum hs-CRP and serum fibrinogen. However, there was no correlation between serum levels of homocysteine and fibrinogen with any metabolic syndrome criteria and related disorders except for a negative correlation of fibrinogen with high-density lipoprotein (HDL).

Conclusion: In the present work, patients with lichen planus were found to have higher makers of both metabolic and cardiovascular risk factors in relation to controls most probably due to long standing inflammation.

Keywords: Lichen planus; Homocysteine; Fibrinogen; Metabolic syndrome.

648. Does Fluorescence Diagnosis Have A Role in Follow Up of Response to Therapy in Mycosis Fungoides?

Manal Bosseila, Doaa Mahgoub, Abeer El-Sayed, Dina Salama, Marwa Abd El-Moneim and Fatma Al-Helf

Photodiagnosis and Photodynamic Therapy, 11(4): 595-602 (2014) IF: 2.524

Background: Monitoring of tumor burden during mycosis fungoides (MF) treatment, is crucial to adjust therapy accordingly. This is usually achieved through combined by clinical assessment with histopathological and immunohistochemical evaluation.

Aim: To assess the validity of fluorescence diagnosis (FD) in the measurement of response to therapy in early MF, using in comparison flow cytometric technique of skin biopsies for CD4+/CD7- malignant T-cell count before and after therapy.

Patients and Methods: Twenty-two patients of histologically proven early MF (stages Ia, Ib, IIa) were subjected to fluorescence diagnosis of their most affected skin lesion before and after 12 weeks of phototherapy with or without combination therapy. In comparison flow cytometric assessment of skin biopsies for CD4+/CD7- malignant T-cell count was evaluated before and after therapy from skin biopsy of the same lesion.

Results: All tested MF lesions showed varying degrees of fluorescence by FD at week zero, with a mean accumulation factor (AF), which is the fluorescence ratio between the tumor tissue and normal skin, of 2.2. After 12 weeks of therapy, the mean AF showed significant reduction to 1.94 ($p = 0.009$). The percent of CD4+/CD7- cells dropped significantly after treatment ($p = 0.029$). No correlation between CD4+/CD7- cell counts and the mean AF could be deduced.

Conclusion: In cases of mycosis fungoides, fluorescence diagnosis can represent an effective tool for evaluating the response to therapy. Changes in accumulation factor values can be used for follow-up of therapy in the same patient, but it should not be used as an absolute value.

Keywords: Mycosis fungoides; Fluorescence diagnosis; Flowcytometry; CD4+/CD7- T Cells.

649. Autologous Platelet Rich Plasma: Topical Versus Intradermal After Fractional Ablative Carbon Dioxide Laser Treatment of Atrophic Acne Scars

Heba I. Gawdat, Rehab A. Hegazy, Marwa M. Fawzi and Marwa Fathy

Dermatologic Surgery, 40: 152-161 (2014) IF: 2.467

Background A proposal has recently been made regarding the potential adjuvant use of platelet-rich plasma (PRP) with fractional carbon dioxide laser (FCL) for the correction of acne scars.

Objective To compare the efficacy and safety of two administration modes of autologous PRP (intradermal injection (ID) and topical application) after FCL with that of FCL alone in the treatment of atrophic acne scars.

Patients and Methods Thirty patients were randomly divided into two groups. Both underwent split-face therapy. Group 1 was administered FCL followed by ID PRP on one side and FCL followed by ID saline on the other. In group 2, one cheek was treated with FCL followed by ID PRP, and the other received FCL followed by topical PRP. Each patient received 3 monthly sessions. The final assessment took place at 6 months.

Results Combined PRP- and FCL-treated areas had a significantly better response ($p = .03$), fewer side effects, and shorter downtime ($p = .02$) than FCL-treated areas, but there were no significant differences in ID-and topical PRP-treated areas in degree of response and downtime ($p = .10$); topically treated areas had significantly lower pain scores.

Conclusion The current study introduces the combination of topical PRP and FCL as an effective, safe 2 modality in the treatment of atrophic acne scars with shorter down-time and better tolerability.

Keywords: Autologous platelet rich plasma (PRP); Fractional Co2, Atrophic Acne Scars, Downtime, Side Effects.

650. Fractional Co2 Laser is An Effective Therapeutic Modality for Xanthelasma Palpebrarum: A Randomized Clinical Trial

Samia M. Esmat, Amany Z. Elramly, Dalia M. Abdel Halim, Heba I. Gawdat and Hanaa I. Taha

Dermatologic Surgery, 40: 1349-1355 (2014) IF: 2.467

Background Xanthelasma palpebrarum (XP) is a common cosmetic concern. Although there is a wide range of therapeutic modalities for XP, there is no general consensus on the optimal treatment for such condition.

Objective Compare the efficacy and safety of super pulsed (SP) and fractional CO2 lasers in the treatment of XP.

Patients and Methods This prospective randomized comparative clinical study included 20 adult patients with bilateral and symmetrical XP lesions. Xanthelasma palpebrarum lesions were randomly assigned to treatment by either single session of ablative SP CO2 laser or 3 to 5 sessions of ablative fractional CO2 laser with monthly intervals. All patients were assessed using digital photography and optical coherence tomography images.

Results Xanthelasma palpebrarum lesions on both sides were successfully removed with significant improvement in size, color, and thickness. Although lesions treated by SP CO2 laser showed significantly better improvement regarding color and thickness of the lesions, downtime and patient satisfaction were significantly better for lesions treated with fractional CO2 laser. Scarring and recurrence were significantly higher in lesions treated by SP CO2 laser.

Conclusion Ablative fractional CO2 laser is an effective and safe therapeutic option for XP with significantly shorter downtime and higher patient satisfaction compared with SP CO2 laser.

Keywords: Xanthelasma palpebrarum; Fractional Co2; Superpulsed Co2; Efficacy; Safety.

651. Efficacy and Safety of Fractional Carbon Dioxide Laser for Treatment of Unwanted Facial Freckles in Phototypes II-IV: A Pilot Study

El Zawahry B, Zaki N, Hafez V, Hay RA and Fahim A

Lasers Med Sci, 29: 1937-1942 (2014) IF: 2.419

Facial freckles are a cosmetic concern to Egyptians, particularly young females. Several therapeutic lines exist with variable response rates and limitations. Fractional carbon dioxide (FCO2) laser provides minimal ablation and therefore less down time and less side effects. The efficacy and safety of this laser technology have still not been studied in freckles. The aim of this study is to assess the efficacy and safety of FCO2 laser in the treatment of unwanted facial freckles in Egyptians. Twenty patients undergone a single session of FCO2 laser and then were followed up clinically a month later. Photographs were taken before treatment and at follow-up visit and were assessed by three blinded investigators. Percent of global improvement was measured on a 4-point grading scale. Patient's satisfaction and adverse events

were recorded. Two patients (10 %) showed grade 1 improvement, while eight patients (40 %) showed grade 2 improvement. Nine patients (45 %) showed grade 3 improvement, and only one patient (5 %) showed grade 4 improvement. FCO2 laser resurfacing is effective and safe in treatment of facial freckles in skin phototypes II-IV. It can offer a more practical alternative to topical treatments, and a cheaper alternative to Q-switched lasers.

Keywords: Freckles; Ablative laser; Fractional carbon dioxide laser; Efficacy; Safety; Pigmentation.

652. Mutational Spectrum of Xeroderma Pigmentosum Group A in Egyptian Patients

Amr K, Messaoud O, El Darouti M, Abdelhak S and El-Kamah G.

Gene, 533: 52-56 (2014) IF: 2.082

Xeroderma pigmentosum (XP) is a rare autosomal recessive hereditary disease characterized by hyperphotosensitivity, DNA repair defects and a predisposition to skin cancers. The most frequently occurring type worldwide is the XP group A (XPA). There is a close relationship between the clinical features that ranged from severe to mild form and the mutational site in XPA gene. The aim of this study is to carry out the mutational analysis in Egyptian patients with XP-A. This study was carried out on four unrelated Egyptian XP-A families. Clinical features were examined and direct sequencing of the coding region of XPA gene was performed in patients and their parents. Direct sequencing of the whole coding region of the XPA gene revealed the identification of two homozygous nonsense mutations: (c.553C>T; p.(Gln185*)) and (c.331G>T; p.(Glu111*)), which create premature, stop codon and a homodeletion (c.374delC: p.Thr125Ilefs*15) that leads to frameshift and premature translation termination. We report the identification of one novel XPA gene mutation and two known mutations in four unrelated Egyptian families with Xeroderma pigmentosum. All explored patients presented severe neurological abnormalities and have mutations located in the DNA binding domain. This report gives insight on the mutation spectrum of XP-A in Egypt. This would provide a valuable tool for early diagnosis of this severe disease.

Keywords: Xeroderma pigmentosum-group A; Novel mutation; Clinical correlation to mutation location.

653. Does Increasing the Pulse Duration Increase the Efficacy of Long Pulsed Nd:YAG Laser Assisted Hair Removal? A Split-Chin Clinical Trial

Samia Esmat, Mona R. E. Abdel-Halim, Amira El-Tawdy, Marwa M. Fawzy, Asmaa Ragheb and Nabila Hasan

European Journal of Dermatology, 24 (3): 391-392 (2014) IF: 1.953

Apart from immediate transient side effects; perifollicular erythema, edema and pain, no chronic adverse side effects developed. High overall satisfaction with the results was reported by 20 patients (83.33%).

To the best of our knowledge, this is the first split chin. controlled trial to study the effects of increasing the pulse duration of long pulsed Nd:YAG and to evaluate the A/T ratio and hair shaft thickness following laser hair removal. It appears that increasing the pulse duration of long pulsed Nd:YAG significantly decreases hair thickness and induces more telogen hair but does not affect

the percentage of hair reduction or the onset of hair re-growth. Various manipulations in the pulse duration and fluence are recommended until reaching the best parameters to achieve permanent hair loss.

654. Study of T Helper (17) and T Regulatory Cells in Psoriatic Patients Receiving Live Attenuated Varicella Vaccine Therapy in A Randomized Controlled Trial

Mohammad Aly Abdel Qader El Darouti

European Journal of Dermatology, 24: 464-469 (2014) IF: 1.953

Background: The use of live attenuated varicella vaccine (Varilrix®) as an adjuvant treatment in severe cases of psoriasis has recently been postulated. Its efficacy raised questions regarding its possible mechanisms of action.

Objective: To compare the efficacy and safety of combining Varilrix® and cyclosporine to cyclosporine alone in the treatment of severe psoriasis. Furthermore, to study the expression of T helper (Th)17 and T regulatory (Tregs) cells before and after therapy.

Materials and Methods: This randomized controlled trial included 24 psoriatic patients, randomly divided into 2 groups (A and B). All patients received cyclosporine at a daily dose of 2.5 mg/kg/day. In addition, group A received 4 doses of Varilrix® once/3 weeks, and group B received 4 doses of subcutaneous saline. Skin biopsies were obtained from all patients before and after therapy and from all controls for estimation of interleukin (IL)-17, IL-22 and Forkhead boxP3 (FoxP3) using RT-PCR.

Results: Group A patients showed a significantly higher % of clinical improvement ($P = 0.011$), which occurred earlier than group B. At baseline, levels of IL-17 and IL-22 were significantly higher while the level of FoxP3 was significantly lower in patients ($P < 0.001$) compared to controls. After therapy, both groups showed significant reductions in both IL-17 and IL-22 levels, and significant elevation in FoxP3 ($P < 0.001$). This change was significantly more evident in group A patients.

Conclusion: Live attenuated varicella vaccine could play a role in the treatment of psoriasis when combined with low dose cyclosporine through accentuating the influence on the Th17/Treg balance.

Keywords: Cyclosporine; Live attenuated varicella vaccine; Psoriasis; T Helper 17; T Regulatory cells.

655. Deep Peeling Using Phenol Versus Percutaneous Collagen Induction Combined With Trichloroacetic Acid 20% in Atrophic Post-Acne Scars; A Randomized Controlled Trial

Tahra Mohamed Leheta, Rania Mounir Abdel Hay and Yehia Farouk El Gareem

J. of Dermatological Treatment, 25: 130-136 (2014) IF: 1.764

Background: Deep peeling using phenol and percutaneous collagen induction (PCI) are used in treating acne scars. Aim: To compare deep peeling using phenol and PCI combined with trichloroacetic acid (TCA) 20% in treating atrophic acne scars.

Methods: 24 patients with post-acne atrophic scars were randomly divided into two groups; group 1 was subjected to one session of deep peeling using phenol, and group 2 was subjected to four sessions of PCI combined with TCA 20%. As a secondary outcome measure, side effects were recorded and patients were

asked to assess their % of improvement by a questionnaire completed 8 months after the procedure.

Results: Scar severity scores improved by a mean of 75.12% ($p < 0.001$) in group 1 and a mean of 69.43% ($p < 0.001$) in group 2. Comparing the degree of improvement in different types of scars, within the same group after treatment, revealed a significant highest degree of improvement in the rolling type ($p = 0.005$) in group 2.

Conclusion: Deep peeling using phenol and PCI with TCA 20% were effective in treating post-acne atrophic scars.

Keywords: Acne; Collagen induction; Peeling; TCA.

656. Do Combined Alternating Sessions of 1540 Nm Nonablative Fractional Laser and Percutaneous Collagen Induction With Trichloroacetic Acid 20% Show Better Results Than Each Individual Modality in the Treatment of Atrophic Acne Scars? A Randomized Controlled Trial

Tahra M. Leheta, Rania M. Abdel Hay, Rehab A. Hegazy and Yehia F. El Gareem

J. of Dermatological Treatment, 25: 137-141 (2014) IF: 1.764

Background: There have been no well-controlled studies evaluating the efficacy of combining 1540 nm nonablative fractional laser with percutaneous collagen induction (PCI) and trichloroacetic acid (TCA) 20% in the treatment of atrophic acne scars. Objective: We hypothesized that combined alternating sessions of both modalities would show better results than each individual modality.

Methods and materials: Thirty-nine patients with post acne atrophic scars were included in this study. Patients were randomly equally divided into three groups; group 1 was subjected to six sessions of PCI combined with TCA 20% in the same session, group 2 was subjected to six sessions of 1540 nm fractional laser and group 3 was subjected to combined alternating sessions of the previously mentioned two modalities.

Results: Scar severity scores improved by a mean of 59.79% (95% CI 47.38–72.21) ($p < 0.001$) in group 1, a mean of 61.83% (95% CI 54.09–69.56) ($p < 0.001$) in group 2 and a mean of 78.27% (95% CI 74.39–82.15) ($p < 0.001$) in group 3. The difference in the degree of improvement was statistically significant when comparing the three groups using ANOVA test ($p = 0.004$).

Conclusion: The current work recommends combining 1540 nm nonablative fractional laser in alternation with PCI and TCA 20% in the treatment of atrophic acne scars.

Keywords: Acne Scars, Fractional Laser, Percutaneous Collagen Induction.

657. The Pro12ala Polymorphism of the Gene for Peroxisome Proliferator Activated Receptor-Gamma Is Associated With A Lower Global Acne Grading System Score in Patients With Acne Vulgaris

K. Amr, M. Abdel-Hameed, K. Sayed, F. Nour-Edin and R. Abdel Hay

Clinical and Experimental Dermatology, 39: 741-5 (2014) IF: 1.234

Background: Acne vulgaris is a multifactorial disease of the skin. Several studies have shown that sebocyte proliferation and/or

lipogenesis, as well as inflammatory reactions, may be regulated by peroxisome proliferator-activated receptor (PPAR) γ -mediated pathways.

Aim: To investigate whether the Pro12Ala polymorphism of the PPAR γ gene might be associated with the risk of acne, and to assess the effect of this polymorphism on acne severity.

Methods: This case-control study enrolled 100 patients with acne and 100 apparently healthy subjects. The clinical grade of acne was assessed using the Global Acne Grading System. We used PCR to identify the presence of the Pro12Ala polymorphism in exon 2 of PPAR γ .

Results: Our results revealed a statistically significant difference ($P = 0.001$) in the genotype distribution between patients and controls, with higher incidence of the Pro/Ala genotype in controls (51%) than in patients (28%). A statistically significant association ($P < 0.001$) between disease severity and genotype distribution was found, indicating that the Pro/Ala genotype is less prevalent in patients with severe acne.

Conclusions: Our results suggest that that the Ala allele might be a protective factor against acne development or may attenuate acne severity.

Keywords: Acne; Gene polymorphism; PPAR γ .

Dept. of Diagnostic Radiology

658. High-Intensity Focused Ultrasound for Potential Treatment of Polycystic Ovary Syndrome: Toward A Noninvasive Surgery

Islam A. Shehata, John R. Ballard, Andrew J. Casper, Leah J. Hennings, Erik Cressman and Emad S. Ebbini

Fertility and Sterility, 101: 545-551 (2014) IF: 4.295

Objective: To investigate the feasibility of using high-intensity focused ultrasound (HIFU), under dual-mode ultrasound arrays (DMUAs) guidance, to induce localized thermal damage inside ovaries without damage to the ovarian surface.

Design: Laboratory feasibility study.

Setting: University-based laboratory.

Animal(S): Ex vivo canine and bovine ovaries.

Intervention(S): DMUA-guided HIFU.

Main Outcome Measure(S): Detection of ovarian damage by ultrasound imaging, gross pathology, and histology.

Result(S): It is feasible to induce localized thermal damage inside ovaries without damage to the ovarian surface. DMUA provided sensitive imaging feedback regarding the anatomy of the treated ovaries and the ablation process. Different ablation protocols were tested, and thermal damage within the treated ovaries was histologically characterized.

Conclusion(S): The absence of damage to the ovarian surface may eliminate many of the complications linked to current laparoscopic ovarian drilling (LOD) techniques. HIFU may be used as a less traumatic tool to perform LOD.

Keywords: Polycystic ovary syndrome (PCOS); Dual-mode ultrasound arrays (DMUA); High-intensity focused ultrasound (HIFU); Infertility; Laparoscopic ovarian drilling (LOD)

659. Biotin-Responsive Basal Ganglia Disease: Neuroimaging Features Before and After Treatment

H. Kassem, A. Wafaie, S. Alshuhbani and T. Farid

American J. of Neuroradiology, 35: 1990-1995 (2014) IF: 3.675

Background and Purpose: Biotin-responsive basal ganglia disease is an autosomal recessive neurometabolic disorder presenting with subacute encephalopathy that can cause death if left untreated. The purpose of this study is to assess the neuroimaging and clinical features of the disease before and after treatment with biotin.

Materials and Methods: We retrospectively reviewed the clinical, laboratory, and neuroimaging features of 15 genetically-proved Middle Eastern cases of biotin-responsive basal ganglia disease. BrainMR imaging was done at the onset of symptoms in all cases and within 2-8 weeks after biotin and thiamine therapy in 14 patients. The MR imaging datasets were analyzed according to lesion location, extent, and distribution.

Results: Brain MR imaging showed bilateral lesions in the caudate nuclei with complete or partial involvement of the putamen and sparing of the globus pallidus in all cases. In 80%, discrete abnormal signals were observed in the mesencephalon, cerebral corticallsubcortical regions, and thalami. In 53%, when the disease was advanced, patchy deep white matter affection was found. The cerebellum was involved in 13.3%. The signal abnormality of the mesencephalon, cortex, and white matter disappeared after treatment whereas the caudate and putamen necrosis persisted in all patients, including those who became asymptomatic.

Conclusions: Biotin-responsive basal ganglia disease is a treatable underdiagnosed disease. It should be suspected in pediatric patients with unexplained encephalopathy whose brainMR imaging shows bilateral and symmetric lesions in the caudate heads and putamen, with or without involvement of mesencephalon, thalami, and cortical-subcortical regions, as the therapeutic trial of biotin and thiamine can be lifesaving.

Keywords: Biotin-Responsive Basal Ganglia Disease; Biotin; Encephalopathy.

660. Prenatal Diagnosis of Isolated Butterfly Vertebra

Youssef A, Zagonari S, Salsi G, Saleem SN, Krsmanovic J, Pacella G, Ghi T, Rizzo N and Pilu G

Ultrasound Obstet Gynecol, 44: 725-726 (2014) IF: 3.14

A 37-year-old low-risk woman, gravida 2 para 1, attended our hospital at 21 weeks' gestation for a routine mid-trimester scan. During the scan, the operator suspected a vertebral malformation in the thoracolumbar region (Figure 1a). No gross deformities of the fetal spine were noted in the mid-sagittal view. A detailed twoand three-dimensional (2D/3D) spinal examination was undertaken in sagittal, coronal and transverse planes. On transverse view, a thin complete cleft in one vertebra in the thoracolumbar region was noted, extending obliquely from the right anterolateral angle throughout the whole thickness of the vertebral body into the left posterolateral edge (Figure 2). Using the 3D technique, volumes acquired in the axial view confirmed the presence of the cleft at vertebral body T-12, on both transverse and coronal projections (Figure 3). The parents were counseled on the rarity of the finding, and on its likely benignity in the light of the absence of spinal mal-alignment or other associated malformations. The couple decided to continue with the pregnancy and declined further assessment, including fetal magnetic resonance imaging. A healthy boy was born at term. Neonatal frontal X-ray showed a small focal depression and interruption at the center of the superior endplate of vertebra T-12 with a subtle irregular linear vertical lucency running in the midline of the vertebral body (Figure 4). At the time of writing

the child was 6 months old and showed no spinal deformity. Radiological re-assessment of the spine was recommended at the age of 1 year to evaluate development of the spine. Butterfly vertebra is a rare congenital spinal anomaly^{1,2}. Very few cases of prenatal diagnosis have been reported, and when this has occurred it has typically been during the assessment of more complex spinal malformation.

Keywords: Spine; Fetal; Ultrasound.

661. Fetal MRI: An Approach To Practice: A Review

Sahar N. Salem

Journal of Advanced Research, 5: 507-523 (2014) IF: 3

MRI has been increasingly used for detailed visualization of the fetus in utero as well as pregnancy structures. Yet, the familiarity of radiologists and clinicians with fetal MRI is still limited. This article provides a practical approach to fetal MR imaging. Fetal MRI is an interactive scanning of the moving fetus owed to the use of fast sequences. Single-shot fast spin-echo (SSFSE) T2-weighted imaging is a standard sequence. T1-weighted sequences are primarily used to demonstrate fat, calcification and hemorrhage. Balanced steady-state free-precession (SSFP), are beneficial in demonstrating fetal structures as the heart and vessels. Diffusion weighted imaging (DWI), MR spectroscopy (MRS), and diffusion tensor imaging (DTI) have potential applications in fetal imaging. Knowing the developing fetal MR anatomy is essential to detect abnormalities. MR evaluation of the developing fetal brain should include recognition of the multilayered-appearance of the cerebral parenchyma, knowledge of the timing of sulci appearance, myelination and changes in ventricular size. With advanced gestation, fetal organs as lungs and kidneys show significant changes in volume and T2-signal. Through a systematic approach, the normal anatomy of the developing fetus is shown to contrast with a wide spectrum of fetal disorders. The abnormalities displayed are graded in severity from simple common lesions to more complex rare cases. Complete fetal MRI is fulfilled by careful evaluation of the placenta, umbilical cord and amniotic cavity. Accurate interpretation of fetal MRI can provide valuable information that helps prenatal counseling, facilitate management decisions, guide therapy, and support research studies.

Keywords: Fetal; MRI; Anomalies; Prenatal.

662. Leukoencephalopathy With Brainstem and Spinal Cord Involvement and Lactate Elevation (LBSL): Assessment of the Involved White Matter Tracts by MRI

Hassan Kassem, Ahmed Wafaie, Sherif Abdelfattah and Tarek Farid

European Journal of Radiology, 83: 191-196 (2014) IF: 2.16

Background and purpose: Leukoencephalopathy with brain stem and spinal cord involvement and lactate elevation (LBSL) is a recently identified autosomal recessive disorder with early onset of symptoms and slowly progressive pyramidal, cerebellar and dorsal column dysfunction. LBSL is characterized by distinct white matter abnormalities and selective involvement of brainstem and spinal cord tracts. The purpose of this study is to assess the imaging features of the involved white matter tracts in cases of LBSL by MRI.

Patients and Methods: We retrospectively reviewed the imaging features of the selectively involved white matter tracts in sixteen genetically proven cases of leukoencephalopathy with brainstem and spinal cord involvement and elevated brain lactate (LBSL). All patients presented with slowly progressive cerebellar sensory ataxia with spasticity and dorsal column dysfunction. MRI of the brain and spine using 1.5 T machine and proton magnetic resonance spectroscopy (1H MRS) on the abnormal white matter were done to all patients. The MRI and MRS data sets were analyzed according to lesion location, extent, distribution and signal pattern as well as metabolite values and ratios in MRS. Laboratory examinations ruled out classic leukodystrophies.

Results: In all cases, MRI showed high signal intensity in T2-weighted and FLAIR images within the cerebral subcortical, periventricular and deep white matter, posterior limbs of internal capsules, centrum semiovale, medulla oblongata, intraparenchymal trajectory of trigeminal nerves and deep cerebellar white matter. In the spine, the signal intensity of the dorsal column and lateral cortico-spinal tracts were altered in all patients. The subcortical U fibers, globi pallidi, thalami, midbrain and transverse pontine fibers were spared in all cases. In 11 cases (68.8%), the signal changes were inhomogeneous and confluent whereas in 5 patients (31.2%), the signal abnormalities were spotty. MRI also showed variable signal abnormalities in the sensory and pyramidal tracts in addition to the brainstem and cerebellar connections. Proton MRS showed consistent elevation of the lactate within the abnormal white matter.

Conclusion: Distinct MRI findings in the form of selective affection of subcortical and deep white matter tracts of the brain (involving the posterior limb of internal capsules and sparing the subcortical U fibers), dorsal column and lateral cortico-spinal tracts of the spinal cord should lead to the diagnosis of LBSL supported by the presence of lactate peak in 1H MRS. The disease can be confirmed by the analysis of the disease gene DARS2.

Keywords: Leukoencephalopathy; Brainstem; Spinal cord; Lactate.

663. Pneumatosis Intestinalis Following Pediatric Live-Related Liver Transplant: A Case Report and Successful Conservative Approach

Omer Abdel-Aziz, Ahmed H. Elaffandi, Mostafa El Shazly, Adel Hosny and Hanaa El-Karakasy

Pediatric Transplantation, 18: 18-21 (2014) IF: 1.63

PI has been rarely reported following pediatric live-related liver transplantation. Such a disorder is characterized by accumulation of gas in the bowel wall. The cause of PI has not been yet established; however, it has been strongly linked with steroid therapy. In this report, we present a case of PI following pediatric live-related liver transplantation that has been successfully managed conservatively.

Keywords: Pneumatosis intestinalis; Ldltpediatric.

664. Multidetector Computed Tomographic Study of Amulets Jewelry, and Other Foreign Objects in Royal Egyptianmummies Dated from the 18Th to 20Th Dynasties

Sahar N. Salem and Zahi Hawass

J. Comput Assist Tomogr, 38(2): 153-158 (2014) IF: 1.602

Objective: The objective of this study was to study the role of multidetector computed tomography (MDCT) in the analysis of foreign objects found within or on the royal Egyptian mummies.

Methods: We studied MDCT images of 15 royal Egyptian mummies (1493-1156 BC) for the presence of foreign objects. We studied each found object for its location, morphology, dimensions, and density in correlation with the archeologic literature.

Results: We detected 14 objects in 6 mummies: a heart amulet, 3 Eye of Horus, 4 Sons of Horus, a crowned-Osiris amulet, 2 bracelets, 2 sets of beads/stones, and an arrowhead that may be linked to injury. The MDCT images suggested the material of the objects to be metal (n = 6), semiprecious stone (n = 1), quartzlike (faience) (n = 2), and fired clay (n = 5). Placement of an amulet within the heart supports our knowledge that its funeral purpose was meant for the purpose of protection.

Conclusions: Multidetector computed tomography offers a detailed noninvasive analysis of objects on/in mummies and differentiates funerary objects from those that may be related to cause of death.

Keywords: Mummy; CT; Amulet; Funeral; Royal; Egypt.

665. Holoprosencephaly Spectrum Among Egyptian Patients: Clinical and Cytogenetic Study

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Genetic Counseling, 25(4): 369-381 (2014) IF: 0.537

Summary: Holoprosencephaly spectrum among Egyptian patients: clinical and cytogenetic study: We report 24 patients with holoprosencephaly (HPE) spectrum screened for Del 7q36 and subtelomere 13q. They were divided according to the type of HPE into: 6 alobar, 15 semilobar, 1 lobar and 2 middle interhemispheric variant (MIH). All patients presented with global developmental delay. Microcephaly was in 83.3% and midfacial developmental defects were in the form of; cyclopia, arrhinia and agnathia in 2 patients (8.3%), premaxillary agenesis in 2 patients (8.3%), cleft lip and palate in 7 patients (29.2%), hypotelorism in 8 patients (33.3%) and hypertelorism in 9 patients (37.5%). The neurological deficits were as follows: abnormal tone and spasticity were present in all of them with exceptional of a single patient with MIH who presented with hypotonia and was able to walk independently at the age of 3 years, athetoid and/or dystonic movements of limbs in 22 patients, seizures in twelve patients (50%) and abnormal EEG in 15 patients (62.5%). Poor temperature regulation was found in 50% of patients and diabetes insipidus was documented in 3 patients (12.5%). The MRI showed complete or partial fusion of basal ganglia and thalami in 21 patients (87.5%) and 19 patients (79.2%) respectively, fused mesencephalon in 8 patients (33.3%), incomplete separation of mesencephalon from diencephalon in 4 patients (16.7%), dorsal cyst in 10 patients (41.7%), abnormal gyral pattern anteriorly in 15 patients (62.5%), anterior located sylvian fissures in 22 patients (99.7%), complete or partial agenesis of the corpus callosum (ACC) in all patients and Dandy-Walker malformation (DWM) in three patients (12.5%). A small occipital cephalocele was detected clinically and radiological as atretic type in MIH patient. Karyotype analysis demonstrated 47, XY,+13 in a patient with alobar holoprosencephaly, 46, XY,t (12;13) (q13q24.1;q14q33) in a semilobar case associated with DWM, 46, XY, del(13)(q34) in one semilobar case and three cases had del 7q36 using FISH technique in two semilobar cases and one lobar case. **Conclusion:** This study highlights the clinical spectrum in

patients with HPE and report a case of HPE and DWM associated with t(12;13). Neuroimaging delineated the pathogenesis underlying developmental defects in HPE. Accurate molecular diagnosis is crucial for further understanding of the pathogenesis of HPE.

Keywords: Holoprosencephaly; MRI Translocation 12; 13 - Deletion 7Q36 Del 13(Q); Dandy-Walker Malformation

666. Ankylosing Spondylitis or Diffuse Idiopathic Skeletal Hyperostosis in Royal Egyptian Mummies of the 18Th–20Th Dynasties? Computed Tomography Andarchaeology Studies

Sahar N. Saleem and Zahi Hawass

Arthritis & Rheumatology, 66(12): 3311-3316 (2014)

Objective: To study the computed tomography (CT) images of royal Ancient Egyptian mummies dated to the 18th to early 20th Dynasties for the claimed diagnoses of ankylosing spondylitis (AS) and diffuse idiopathic skeletal hyperostosis (DISH) and to correlate the findings with the archaeology literature.

Methods: We studied the CT images of 13 royal Ancient Egyptian mummies (1492–1153 BC) for evidence of AS and DISH and correlated our findings with the archaeology literature.

Results: The findings of the CT scans excluded the diagnosis of AS, based on the absence of sacroiliac joint erosions or fusion of the facet joints. Four mummies fulfilled the diagnostic criteria for DISH: Amenhotep III (18th Dynasty), Ramesses II, his son Merenptah, and Ramesses III (19th to early 20th Dynasties). The diagnosis of DISH, a commonly asymptomatic disease of old age, in the 4 pharaohs is in concordance with their longevity and active lifestyles.

Conclusion: CT findings excluded the diagnosis of AS in the studied royal Ancient Egyptian mummies and brought into question the antiquity of the disease. The CT features of DISH during this ancient period were similar to those commonly seen in modern populations, and it is likely that they will also be similar in the future. The affection of Ramesses II and his son Merenptah supports familial clustering of DISH. The process of mummification may induce changes in the spine that should be considered during investigations of disease in ancient mummies.

Keywords: Spine; Mummy; Ankylosing Spondylitis.

Dept. of Ear Nose & Throat

667. Otolaryngologic Manifestations of Diffuse Idiopathic Skeletal Hyperostosis

Mosaad Abdel-Aziz, Noha A. Azab, Mohammed Rashed and Ahmed Talaat

Eur Arch Otorhinolaryngol, 271(6): 1785-1790 (2014) IF: 1.608

Diffuse idiopathic skeletal hyperostosis (DISH) is characterized by formation of large cervical osteophytes that may compress the posterior wall of the aerodigestive tract. It is a rare cause of dysphagia in the elderly. The aim of this study was to investigate the various otolaryngologic manifestations of DISH. Eleven elderly patients with DISH were included in the study. All patients presented with dysphagia that was graded on the swallowing screening tool (EAT-10), and the diagnosis of DISH was based on computed tomographic criteria. The patients were subjected to otolaryngologic examination and flexible laryngoscopy. Polysomnography was used for patients with excessive daytime sleepiness for detection of obstructive sleep

apnea (OSA). In addition to dysphagia of varying severity, OSA was found in nine patients, change of voice in six, globus sensation in seven, aspiration in three, and cervical pain in seven. Flexible laryngoscopy showed bulging of the posterior pharyngeal wall in all patients. DISH may be an unrecognized contributory factor to both dysphagia and OSA in the elderly. Change of voice, aspiration, globus sensation, and cervical pain are other otolaryngologic manifestations that may be encountered symptoms of the disease. An otolaryngologist should be aware of the disease that may be overlooked, and computed tomography is a confirmatory diagnostic method.

Keywords: Dysphagia Obstructive Sleep Apnea Cervical Osteophytes DISH Cervical Pain.

668. Trans-Oral Endoscopic Cerclage Pharyngoplasty for Treatment of Velopharyngeal Insufficiency

Mohammed Rashed, Nader Naguib and Mosaad Abdel-Aziz

International Journal of Pediatric Otorhinolaryngology, 78: 934-937 (2014) IF: 1.319

Objectives: Velopharyngeal insufficiency (VPI) is a common problem after cleft palate repair, it leads to speech distortion with consequent affection of speech intelligibility. Many techniques have been used in the treatment of VPI with varying results and complications. The aim of this study was to evaluate the efficacy of trans-oral endoscopic cerclage pharyngoplasty in the treatment of VPI.

Methods: Eighteen patients with hypernasality after palatoplasty were subjected to trans-oral endoscopic cerclage pharyngoplasty. Pre and postoperative evaluation of velopharyngeal function were performed by using auditory perceptual assessment, nasometric assessment, and flexible nasopharyngoscopy.

Results: Significant postoperative improvement of speech parameters measured with auditory perceptual assessment were achieved, and the overall postoperative nasalance score was improved significantly for nasal and oral sentences. Also, flexible nasopharyngoscopy showed significant improvement of velopharyngeal closure. No marked postoperative complications were reported apart from throat pain and dysphagia that disappeared with time.

Conclusions: Trans-oral endoscopic cerclage pharyngoplasty is an effective method for the treatment of VPI.

Keywords: Velopharyngeal insufficiency; Cleft palate; Pharyngoplasty; Hypernasality.

669. Eosinophilic Granuloma of the Temporal Bone in Children

Abdel-Aziz M, Rashed M, Khalifa B, Talaat A and Nassar A.

The Journal of Craniofacial Surgery, 25(3): 1076-1078 (2014) IF: 0.676

Eosinophilic granuloma (EG) is a bony destructive disease that frequently occurs in children; it is a subtype of Langerhans cell histiocytosis. The aims of this study were to detect the presenting features of temporal bone lesions in children and to evaluate the efficacy of surgery combined with radiotherapy in treatment of the disease. A retrospective study on 12 children with EG of the temporal bone was done. Computed tomography and hearing assessment were performed for all patients. All patients were treated with cortical mastoidectomy followed by postoperative

radiotherapy. Follow-up was carried out for at least 2 years. The patients' presenting symptoms were external ear canal mass in 10 patients (83.3%), postauricular swelling in 8 patients (66.7%), and persistent otorrhea in 4 patients (33.3%). Ten patients (83.3%) showed conductive hearing loss, whereas 2 patients (16.7%) showed mixed hearing loss on the affected side. Computed tomography showed osteolytic defects without sclerotic margins filled with soft tissue masses involving the mastoid bone. Histopathologic examination showed eosinophils and Langerhans cells that were immune reactive for CD1 antigen and S-100 protein. Postoperative follow-up showed complete cure of the disease in 10 children (83.3%), with recurrence detected in 2 patients (16.7%) who needed second surgical intervention. We concluded that temporal bone EG in children may present with features that mimic the features of chronic suppurative otitis media. However, computed tomography and histopathologic examination are diagnostic. Cortical mastoidectomy together with postoperative radiotherapy is an achievable treatment in most cases.

Keywords: Eosinophilic granuloma; Temporal bone; Cortical mastoidectomy; Otorrhea.

Dept. of Endemic

670. Effectiveness and Cost-Effectiveness of Immediate Versus Delayed Treatment of Hepatitis C Virus-Infected Patients in A Country With Limited Resources: the Case of Egypt

Obach D, Deuffic-Burban S, Esmat G, Anwar WA, Dewedar S, Canva V, Cousien A, Doss W, Mostafa A, Pol S, Buti M, Siebert U, Fontanet A, Mohamed MK and Yazdanpanah Y.

Lancet Global Health, 58 (8): 1064-1071 (2014) IF: 9.416

Background: Because of logistical and economic issues, in Egypt, as in other resource-limited settings, decision makers should determine for which patients hepatitis C virus (HCV) treatment should be prioritized. We assessed the effectiveness and cost-effectiveness of different treatment initiation strategies.

Methods: Using a Markov model, we simulated HCV disease in chronically infected patients in Egypt, to compare lifetime costs, quality-adjusted life expectancy (QALE), and the incremental cost-effectiveness ratio (ICER) of different treatment initiation strategies.

Results: Immediate treatment of patients at stages F1/F2/F3 was less expensive and more effective than delaying treatment until more severe stages or not providing treatment (in patients diagnosed at F1: QALE = 18.32 years if treatment at F1 vs 18.22 if treatment at F2). Treatment of F4 patients was more effective than no treatment at all (QALE = 10.33 years vs 8.77 years) and was cost-effective (ICER = \$1915/quality-adjusted life-year [QALY]). When considering that affordable triple therapies, including new direct-acting antivirals, will be available starting in 2016, delaying treatment until stage F2, then treating all patients regardless of their disease stage after 2016, was found to be cost-effective (ICER = \$33/QALY).

Conclusions: In Egypt, immediate treatment of patients with fibrosis stage F1-F3 who present to care is less expensive and more effective than delaying treatment. However, immediate treatment at stage F1 is only slightly more effective than waiting for disease to progress to stage F2 before starting treatment and is sensitive to the forthcoming availability of new treatments. Treating patients at stage F4 is highly effective and cost-effective.

In Egypt, decision makers should prioritize treatment for F4 patients and delay treatment for F1 patients who present to care.

Keywords: HCV; Cost-Effectiveness; Resource-Limited Countries; Egypt; Antiviral Treatment.

671. Peginterferon Alpha-2A Versus Peginterferon Alpha-2B for Chronic Hepatitis C (Review)

Goran Hauser, Tahany Awad, Kristian Thorlund, Davor Štimac, Mahasen Mabrouk and Christian Gluud

Cochrane Database Systematic Review, 28 (2): (2014) IF: 5.939

Background A combination of weekly pegylated interferon (peginterferon) alpha and daily ribavirin still represents standard treatment of chronic hepatitis C infection in the majority of patients. However, it is not established which of the two licensed peginterferon products, peginterferon alpha-2a or peginterferon alpha-2b, is the most effective and has a better safety profile.

Objectives To systematically evaluate the benefits and harms of peginterferon alpha-2a versus peginterferon alpha-2b in head-to-head randomized clinical trials in patients with chronic hepatitis C.

Search methods We searched the Cochrane Hepato-Biliary Group Controlled Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library, MEDLINE, EMBASE, Science Citation Index Expanded, and LILACS until October 2013. We also searched conference abstracts, journals, and grey literature.

Selection criteria We included randomised clinical trials comparing peginterferon alpha-2a versus peginterferon alpha-2b given with or without cointervention(s) (for example, ribavirin) for chronic hepatitis C. Quasi-randomised studies and observational studies as identified by the searches were also considered for assessment of harms. Our primary outcomes were all-cause mortality, liver-related morbidity, serious adverse events, adverse events leading to treatment discontinuation, other adverse events, and quality of life. The secondary outcome was sustained virological response in the blood serum.

Data collection and analysis Two authors independently used a standardised data collection form. We meta-analysed data with both the fixed-effect and the random-effects models. For each outcome we calculated the relative risk (RR) with 95% confidence interval (CI) based on intention-to-treat analysis. We used domains of the trials to assess the risk of systematic errors (bias) and trial sequential analyses to assess the risks of random errors (play of chance). Intervention effects on the outcomes were assessed according to GRADE.

Main results We included 17 randomised clinical trials which compared peginterferon alpha-2a plus ribavirin versus peginterferon alpha-2b plus ribavirin in 5847 patients. All trials had a high risk of bias. Very few trials reported data on very few patients for the patient-relevant outcomes all-cause mortality, liver-related morbidity, serious adverse events, and quality of life. Accordingly, we were unable to conduct meta-analyses on all-cause mortality, liver-related morbidity, and quality of life. Twelve trials reported on adverse events leading to discontinuation of treatment without clear evidence of a difference between the two peginterferons (197/2171 (9.1%) versus 311/3169 (9.9%); RR 0.84, 95% CI 0.57 to 1.22; I² = 44%; low quality evidence). A trial sequential analysis showed that we could exclude a relative risk reduction of 20% or more on this outcome. Peginterferon alpha-2a significantly increased the number of patients who achieved a sustained virological response

in the blood serum compared with peginterferon alpha-2b (1069/2099 (51%) versus 1327/3075 (43%); RR 1.12, 95% CI 1.06 to 1.18; I² = 0%, 12 trials; moderate quality evidence). Trial sequential analyses supported this result. Subgroup analyses based on risk of bias, viral genotype, and treatment history yielded similar results. Trial sequential analyses supported the results in patients with genotypes 1 and 4, but not in patients with genotypes 2 and 3.

Authors' conclusions There is lack of evidence on patient-important outcomes and paucity of evidence on adverse events. Moderate quality evidence suggests that peginterferon alpha-2a is associated with a higher sustained virological response in serum than with peginterferon alpha-2b. This finding may be affected by the high risk of bias of the included studies. The clinical consequences of peginterferon alpha-2a versus peginterferon alpha-2b are unknown, and we cannot translate an effect on sustained virological response into comparable clinical effects because sustained virological response is still an unvalidated surrogate outcome for patient-important outcomes. The lack of evidence on patient-important outcomes and the paucity of evidence on adverse events means that we are unable to draw any conclusions about the effects of one peginterferon over the other.

Keywords: Peginterferon Alpha-2A - Peginterferon Alpha-2B- Chronic Hepatitis C.

672. Peginterferon Plus Ribavirin Versus Interferon Plus Ribavirin for Chronic Hepatitis C

Hauser G, Awad T, Brok J, Thorlund K, Štimac D, Mabrouk M, Gluud C and Gluud LL.

Cochrane Database Systematic Review -the Cochrane Library - Hepato-Biliary Group, 28 (2): (2014) IF: 5.939

Background: Pegylated interferon (peginterferon) plus ribavirin is the recommended treatment for patients with chronic hepatitis C, but systematic assessment of the effect of this treatment compared with interferon plus ribavirin is needed.

Objectives: To systematically evaluate the benefits and harms of peginterferon plus ribavirin versus interferon plus ribavirin for patients with chronic hepatitis C.

Search Methods: We searched the Cochrane Hepato-Biliary Group Controlled Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, Science Citation Index-Expanded, and LILACS. We also searched conference abstracts, journals, and grey literature. The last searches were conducted in September 2013.

Selection Criteria: We included randomised clinical trials comparing peginterferon plus ribavirin versus interferon plus ribavirin with or without co-intervention(s) (e.g., other antiviral drugs) for chronic hepatitis C. Quasi-randomised and observational studies retrieved through the searches for randomised clinical trials were also considered for reports of harms. Our primary outcomes were liver-related morbidity, all-cause mortality, serious adverse events, adverse events leading to treatment discontinuation, other adverse events, and quality of life. Our secondary outcome was sustained virological response in serum, that is, undetectable hepatitis C virus RNA in serum by sensitive tests six months after the end of treatment.

Data Collection and Analysis: Two review authors independently used a standardised data collection form. We meta-analysed data with both fixed-effect and random-effects models. For each outcome, we calculated the odds ratio (OR) (for liver-related morbidity or all-cause mortality) or the risk ratio (RR) along with 95% confidence interval (CI) based on intention-to-

treat analysis. We used domains of the trials to assess the risk of systematic errors (bias) and trial sequential analyses to assess the risk of random errors (play of chance). For each outcome, we calculated the RR with 95% CI based on intention-to-treat analysis. Effects of interventions on outcomes were assessed according to GRADE.

Main Results: We included 27 randomised trials with 5938 participants. All trials had high risk of bias. We considered that the risk of bias did not impact on the quality of evidence for liver-related mortality and adverse event outcomes, but it did for virological response. All trials compared peginterferon alpha-2a or peginterferon alpha-2b plus ribavirin versus interferon plus ribavirin for participants with chronic hepatitis C. Three trials administered co-interventions (amantadine hydrochloride 200 mg daily to both intervention groups), and 24 trials were conducted without co-interventions. The effect observed between the two intervention groups regarding liver-related morbidity plus all-cause mortality (5/907 (0.55%) versus 4/882 (0.45%) was imprecise: OR 1.14 (95% CI 0.38 to 3.42; five trials; low quality of evidence), as was the risk of adverse events leading to treatment discontinuation (332/2692 (12.3%) versus 409/2176 (18.8%); RR 0.86, 95% CI 0.68 to 1.09; 15 trials; low quality of evidence) or regarding adverse events leading to treatment discontinuation (332/2692 (12.3%) versus 409/2176 (18.8%); RR 0.86, 95% CI 0.66 to 1.12; 17 trials; low quality of evidence). However, peginterferon plus ribavirin versus interferon plus ribavirin significantly increased the risk of neutropenia (332/2202 (15.1%) versus 117/1653 (7.1%); RR 2.15, 95% CI 1.76 to 2.61; 13 trials), thrombocytopenia (65/1113 (5.8%) versus 23/1082 (2.1%); RR 2.63, 95% CI 1.68 to 4.11; 10 trials), arthralgia (517/1740 (29.7%) versus 282/1194 (23.6%); RR 1.19, 95% CI 1.05 to 1.35; four trials), injection site reaction (627/1168 (53.7%) versus 186/649 (28.7%); RR 1.71, 95% CI 1.50 to 1.93; four trials), and nausea (606/1784 (34.0%) versus 354/1239 (28.6%); RR 1.13, 95% CI 1.01 to 1.26; four trials). The most frequent adverse event was fatigue, which occurred in 57% of participants (2024/3608). No significant difference was noted between peginterferon plus ribavirin versus interferon plus ribavirin in terms of fatigue (1177/2062 (57.1%) versus 847/1546 (54.8%); RR 1.01, 95% CI 0.96 to 1.07; 12 trials). No significant differences were reported between the two treatment groups regarding anaemia, headache, rigours, myalgia, pyrexia, weight loss, asthenia, depression, insomnia, irritability, alopecia, pruritus, skin rash, thyroid malfunction, decreased appetite, or diarrhoea. We were unable to identify any data on quality of life. Peginterferon plus ribavirin versus interferon plus ribavirin seemed to significantly increase the number of participants achieving sustained virological response (1673/3300 participants (50.7%) versus 1081/2804 patients (36.7%); RR 1.39, 95% CI 1.25 to 1.56; I² = 64%; 27 trials; very low quality of evidence). However, the risk of bias in the 13/27 (48.1%) trials reporting on this outcome was high and was considered only 'lower' in the remainder. Because the conventional meta-analysis did not reach its required information size (n = 14,486 participants), we used trial sequential analysis to control for risks of random errors. Again, in this analysis, the estimated effect was statistically significant in favour of peginterferon. Subgroup analyses according to risk of bias, viral genotype, baseline viral load, past treatment history, and type of intervention yielded similarly significant results favouring peginterferon over interferon on the outcome of sustained virological response.

Authors' Conclusions: Peginterferon plus ribavirin versus interferon plus ribavirin seems to significantly increase the

proportion of patients with sustained virological response, as well as the risk of certain adverse events. However, we have insufficient evidence to recommend or reject peginterferon plus ribavirin for liver-related morbidity plus all-cause mortality compared with interferon plus ribavirin. The clinical consequences of achieved sustained virological response are unknown, as sustained virological response is still an unvalidated surrogate outcome. We found no evidence of the potential benefits on quality of life in patients with achieved sustained virological response. Further high-quality research is likely to have an important impact on our confidence in the estimate of patient-relevant outcomes and is likely to change our estimates. There is very low quality evidence that peginterferon plus ribavirin increases the proportion of patients with sustained virological response in comparison with interferon plus ribavirin. There is evidence that it also increases the risk of certain adverse events.

Keywords: Peginterferon; Ribavirin; Interferon; Chronic hepatitis C.

673. Nitazoxanide Plus Pegylated Interferon and Ribavirin in the Treatment of Genotype 4 Chronic Hepatitis C, A Randomized Controlled Trial

Shehab HM, Elbaz TM and Deraz DM.

Liver International, 34: 259-265 (2014) IF: 4.447

Background and Aims: Nitazoxanide has been proposed as a novel therapeutic agent for chronic hepatitis C virus (HCV) potentiating the effect of interferon and improving sustained virological response rates to up to 80% in genotype 4. This is an independent randomized trial to confirm the efficacy of nitazoxanide in the treatment of chronic hepatitis C genotype 4.

Methods: This was an open-label trial. Treatment-naive genotype 4 HCV patients were recruited: Group 1 received weekly subcutaneous pegylated interferon 160 µg in addition to weight-based ribavirin (1200 mg if ≥ 75 kg and 1000 mg if <75 kg) for 48 weeks, Group 2 received 4 weeks lead-in therapy by nitazoxanide alone (500 mg bid) followed by triple therapy including nitazoxanide, pegylated interferon and ribavirin for a further 48 weeks.

Results: Fifty patients were recruited in each group. Baseline characteristics were similar except for a higher BMI in group 1 (28.5 vs. 26.5, P = 0.01). SVR rates were similar (24/50 (48%) vs. 25/50 (50%) in groups 1 and 2 respectively, P: 0.84). RVR, cEVR and ETR rates were also similar (61% vs. 53% - P:0.4, 70% vs. 72% - P:0.8 and 62% vs. 58% - P:0.6 in groups 1 and 2 respectively). Biochemical response at week 12 was also similar (57% vs. 46% in groups 1 and 2 respectively, P:0.26). Complications were similar except for a higher rate of dyspepsia in the group receiving nitazoxanide (32% vs. 14%, P:0.03).

Conclusion: The addition of nitazoxanide to pegylated interferon and ribavirin does not improve the virological or biochemical response rates in chronic HCV genotype 4.

Keywords: Nitazoxanide; Interferon; HCV.

674. Optimizing Treatment for HCV Genotype 4: PEG-IFN Alfa 2A Vs. PEG-IFN Alfa 2B; the Debate Continues

Esmat G, El Kassas M, Hassany M, Gamil M and El Raziky M.

Liver International, 34(1): 24-28 (2014) IF: 4.447

Hepatitis C virus (HCV) remains one of the leading causes of morbidity and mortality worldwide. Combined therapy with pegylated interferon (PEG-IFN) and ribavirin is the current standard of care treatment for HCV genotype 4. Two types of PEG-IFN are commercially available. The limited number of trials that were conducted for HCV genotype 4 and the few head to head comparisons make it impossible to know which is the best option? In this article we review all available PEG-IFN trials performed worldwide for HCV genotype 4 since 2004. Unless another molecule is developed as a standalone for the treatment of HCV, PEG-IFN will continue to be a source of debate.

Keywords: HCV genotype 4; PEG-IFN alfa-2a; PEG-IFN alfa-2b.

675. The Efficacy of A Hansenula-Derived 20 KDa Pegylated Interferon Alpha-2A in the Treatment of Genotype 4 Chronic Hepatitis C

Shehab H, Elbaz T, Deraz D, Hafez A and Elattar I.

Journal of Interferon & Cytokine Research, 34: 727-733 (2014) IF: 3.899

Pending the emergence and approval of an effective interferon-free regimen, pegylated interferon will remain an integral part of the treatment of genotype 4 hepatitis C virus (HCV). A new 20 kDa pegylated interferon has been developed in a cost-saving fungal-based system and is commercialized in Egypt at a quarter to a third of the price of conventional pegylated interferon. We hereby test the efficacy and safety of this novel cost-saving interferon. One hundred ninety-three consecutive treatment-naive patients with genotype 4 HCV were treated using the following regimen: subcutaneous 20 kDa pegylated interferon 160 µg once weekly plus oral ribavirin 1,000 or 1,200 mg daily (based on body weight <75 kg or ≥75 kg, respectively) for 48 weeks. A sustained virological response (SVR) of 51% was achieved. Interim responses included rapid virological response (RVR): 54%, early virological response (EVR): 78% (complete EVR: 71%, partial EVR: 7%), and end of treatment response: 63%. The most common adverse events were flu-like symptoms, dyspepsia, anorexia, and pruritus. Treatment-related serious adverse events were encountered in only 2 patients (1%). Discontinuation of treatment due to adverse events occurred in only 13 patients (7%). Multiple logistic regression analyses revealed the following factors as predictors of SVR: RVR (P<0.001), alpha-fetoprotein < upper limit of normal (ULN) (P=0.007), and early biochemical response (alanine aminotransferase < ULN at week 12, P=0.018). Hansenula-derived 20 kDa pegylated interferon alpha-2a is an effective and safe treatment for genotype 4 chronic HCV. These results highlight the presence of a less costly treatment for chronic HCV, pending the emergence of an effective inexpensive interferon-free regimen. A direct comparison with 40 kDa interferon remains essential to adequately compare the efficacy and safety.

Keywords: Interferon; HCV Hansenula.

676. Efficacy and Survival Analysis of Percutaneous Radiofrequency Versus Microwave Ablation for Hepatocellular Carcinoma: An Egyptian Multidisciplinary Clinic Experience

Abdelaziz A, Elbaz T, Shousha HI, Mahmoud S, Ibrahim M, Abdelmaksoud A and Nabeel M.

Surgical Endoscopy, 28(12):3429-3434 (2014) IF: 3.313

Background: Hepatocellular carcinoma (HCC) is a primary tumor of the liver with poor prognosis. For early stage HCC, treatment options include surgical resection, liver transplantation, and percutaneous ablation. Percutaneous ablative techniques (radiofrequency and microwave techniques) emerged as best therapeutic options for nonsurgical patients.

Aims: We aimed to determine the safety and efficacy of radiofrequency and microwave procedures for ablation of early stage HCC lesions and prospectively follow up our patients for survival analysis.

Patients and Methods: One Hundred and 11 patients with early HCC are managed in our multidisciplinary clinic using either radiofrequency or microwave ablation. Patients are assessed for efficacy and safety. Complete ablation rate, local recurrence, and overall survival analysis are compared between both procedures.

Results: Radiofrequency ablation group (n = 45) and microwave ablation group (n = 66) were nearly comparable as regards the tumor and patients characteristics. Complete ablation was achieved in 94.2 and 96.1% of patients managed by radiofrequency and microwave ablation techniques, respectively (p value 0.6) with a low rate of minor complications (11.1 and 3.2, respectively) including subcapsular hematoma, thigh burn, abdominal wall skin burn, and pleural effusion. Ablation rates did not differ between ablated lesions ≤ 3 and 3-5 cm. A lower incidence of local recurrence was observed in microwave group (3.9 vs. 13.5% in radiofrequency group, p value 0.04). No difference between both groups as regards de novo lesions, portal vein thrombosis, and abdominal lymphadenopathy. The overall actuarial probability of survival was 91.6% at 1 year and 86.1% at 2 years with a higher survival rates noticed in microwave group but still without significant difference (p value 0.49).

Conclusion: Radiofrequency and microwave ablations led to safe and equivalent ablation and survival rates (with superiority for microwave ablation as regards the incidence of local recurrence).

677. CUFA Algorithm: Assessment of Liver Fibrosis Using Routine Laboratory Data

Shehab H, Elattar I, Elbaz T, Mohey M and Esmat G.

Journal of Viral Hepatitis, 21: 956-964 (2014) IF: 3.307

Staging of liver fibrosis is an integral part of the management of HCV. Liver biopsy is hampered by its invasiveness and possibility of sampling error. Current noninvasive methods are disadvantaged by their cost and complexity. In this study, we aimed at developing a noninvasive method for the staging of liver fibrosis based only on routine laboratory tests and clinical data. Basic clinical and laboratory data and liver biopsies were collected from 994 patients presenting for the evaluation of HCV. Logistic regression was used to create a model predictive of fibrosis stages. A sequential test was then developed by combining our new model with APRI. In the training set (497) a model was created by logistic regression for the prediction of significant fibrosis (≥F2), it included platelets, AST and age

(PLASA). The areas under the curve (AUC), sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 0.753, 66.8, 71.4, 69.8, 68.4, respectively, while in the validation set (497), they were 0.777, 66.7, 72.8, 68.6 and 71, respectively. These were the best performance indicators when compared to APRI, FIB-4, King's score, platelets, fibrosis index, age-platelet index and Lok index in the same set of patients. A sequential test was then developed including APRI followed by PLASA [Cairo University Fibrosis Assessment (CUFA) algorithm], this allowed saving 20% and 34% of liver biopsies for patients being tested for significant fibrosis and cirrhosis, respectively. In conclusion, the CUFA algorithms at no cost allow saving a significant proportion of patients from performing a liver biopsy or a more complex costly test. These algorithms could be used as the first step in the assessment of liver fibrosis before embarking on the more costly advanced serum markers, Fibroscan or liver biopsy.

Keywords: CUFA algorithm; HCV; PLASA score.; chronic hepatitis C; fibrosis; liver; noninvasive.

678. World Gastroenterology Organisation Global Guidelines: Diagnosis, Management And Prevention Of Hepatitis C

Umar M, Khan AG, Abbas Z, Arora S, Asifabbas N, Elewaut A, Esmat G, Foster G, Fried M, Goh KL, Hamama TB, Imawari M, Isakov V, Krabshuis J, LaBrecque D, Lemair A, Malferteiner P, Ryder S, Schiedermaier P, Stimac D, Tandon R, Villamil F, Zapata R and Ferenci P

Journal of Clinical Gastroenterology, 48 (3): 204-217 (2014) IF: 3.186

This guideline will be of interest to all health professionals in primary and secondary care involved in the management of people with hepatitis C infection in different countries of the world. It covers all stages of the disease management pathway: screening, testing, diagnosis, referral, treatment, care, and follow-up of children and adults with, or exposed to, hepatitis C virus (HCV) infection.

Numerous guidelines produced annually by prestigious medical bodies outline "gold standard" practices and are aimed at physicians in resource-rich environments. (See the full version of this guideline for links to the main international guidelines on the management of hepatitis C.) As such, they are inaccessible and irrelevant for many clinicians in developing countries. Any Western guidelines that fail to acknowledge this may be preventing the dissemination of knowledge and evidence to the full global audience. The WGO has developed the concept of "cascades" to make guidelines more applicable to differing resource environments, by providing a collection of related diagnostic and treatment options arranged hierarchically in terms of conditions and available resources.

Keywords: WGO Guidelines Include Alternatives for Clinicians.

679. Promotor Methylation: Does It Affect Response to Therapy in Chronic Hepatitis C (G4) Or Fibrosis?

N Zekri AR, Raafat AM, Elmasry S, Bahnassy AA, Saad Y, Dabaon HA, El-Kassas M, Shousha HI, Nassar AA, El-Dosouky MA and Hussein N.

Ann Hepatol., 13(5): 518-524 (2014) IF: 2.193

Background and Aim: DNA methylation plays a critical role in the control of important cellular processes. The present study assessed the impact of promoter methylation (PM) of some genes on the antiviral response to antiviral therapy and its relation to the presence of fibrosis in HCV-4 infected patients from Egypt.

Material and Methods: Clinical, laboratory and histopathological data of 53 HCV-4 infected patients who were subjected to combined antiviral therapy were collected; patients were classified according to their response to treatment and the fibrosis status. The methylation profiles of the studied groups were determined using the following genes: APC, P14ARF, P73, DAPK, RASSF1A, and O6MGMT in patients' plasma.

Results: O6MGMT and P73 showed the highest methylation frequencies (64.2 and 50.9%) while P14 showed the lowest frequency (34%). Sustained virological response (SVR) was 54.7% with no significant difference in clinico-pathological or laboratory features between the studied groups. PM of O6MGM was significantly higher in non-responders (p value 0.045) while DAPK showed high methylation levels in responders with no significance (p value: 0.09) and PM of RASSF1A was significantly related to mild fibrosis (p value: 0.019). No significant relations were reported between PM of any of the studied genes and patients' features.

Conclusion: PM of some Tumor Suppressor genes increases in chronic active HCV-4. However, only O6MGMT can be used as a predictor of antiviral response and RASSF1A as a marker of marked fibrosis in this small set of patients. An extended study, including more patients is required to validate the results of this preliminary study.

Keywords: Promotor methylation; HCV.

680. Predictors of Disease Recurrence Post Living Donor Liver Transplantation in End Stage Chronic HCV Patients

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Disease Markers, 2014; 1-9 (2014) IF: 2.174

HCV recurrence represents a universal phenomenon after liver transplantation. In this study Fifty HCV patients who underwent living donor liver transplantation were enrolled and factors that may accelerate HCV reinfection of the allograft such as donor's age and degree of liver steatosis, recipient's age, gender, BMI, MELD score, liver functions, HCV viral load, type of immunosuppressive drug, and genetic polymorphisms of IL28B, OAS, and IL1B were studied. The results of disease-free survival (DFS) rates showed inverse correlation with the recipient's postoperative levels of ALT, AST, ALP (P < 0.001, < 0.001, and 0.006 resp.) as well as pre- and postoperative titers of HCV RNA (P < 0.003 and < 0.001 resp.). Recipient's IL28B SNP was a significant factor in predicting postoperative DFS (p < 0.025). However, SNPs in OAS and IL1B genes had no apparent correlation with DFS. Cox proportional hazards model revealed that patients with elevated levels of ALT, preoperative viral titers, IL28B CT, and IL28B TT were 8.28, 4.22, 3.35, and 1.36 times, respectively, more likely to develop recurrence. In conclusion IL28B SNP, ALT level, and preoperative HCV titer besides proper choice of immunosuppressant are helpful for predicting posttransplant HCV recurrence and DFS.

Keywords: HCV; Transplantation; Recurrence.

681. Is Expert Opinion Reliable When Estimating Transition Probabilities? the Case of HCV-Related Cirrhosis in Egypt

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Bmc Medical Research Methodology, 14:39: 1-6 (2014)
IF: 2.168

Background: Data on HCV-related cirrhosis progression are scarce in developing countries in general, and in Egypt in particular. The objective of this study was to estimate the probability of death and transition between different health stages of HCV (compensated cirrhosis, decompensated cirrhosis and hepatocellular carcinoma) for an Egyptian population of patients with HCV-related cirrhosis.

Methods: We used the "elicitation of expert opinions" method to obtain collective knowledge from a panel of 23 Egyptian experts (among whom 17 were hepatologists or gastroenterologists and 2 were infectiologists). The questionnaire was based on virtual medical cases and asked the experts to assess probability of death or probability of various cirrhosis complications. The design was a Delphi study: we attempted to obtain a consensus between experts via a series of questionnaires interspersed with group response feedback.

Results: We found substantial disparity between experts' answers, and no consensus was reached at the end of the process. Moreover, we obtained high death probability and high risk of hepatocellular carcinoma. The annual transition probability to death was estimated at between 10.1% and 61.5% and the annual probability of occurrence of hepatocellular carcinoma was estimated at between 16.8% and 58.9% (depending on age, gender, time spent in cirrhosis and cirrhosis severity).

Conclusions: Our results show that eliciting expert opinions is not suited for determining the natural history of diseases due to practitioners' difficulties in evaluating quantities. Cognitive bias occurring during this type of study might explain our results.

Keywords: Delphi method; Expert knowledge elicitation; Methodological bias; Risk perception; Cognitive bias; HCV in Egypt.

682. Impact of Nutritional Status of Egyptian Patients With End-Stage Liver Disease on Their Outcomes After Living Donor Liver Transplantation

Yosry A, Omran D, Said M, Fouad W and Fekry O.

Journal Of Digestive Diseases, 15: 321-326 (2014)
IF: 1.924

Objective: Malnutrition is prevalent among patients with end-stage liver disease (ESLD) awaiting liver transplantation. Our aim was to examine prospectively the impact of patients' nutritional status on their outcomes after living donor liver transplantation (LDLT).

Methods: In all, 30 patients scheduled for LDLT were subjected to a preoperative nutritional status assessment through subjective global assessment (SGA), nutritional risk screening (NRS 2002) and anthropometric measurements. All patients were followed up for 3 months after LDLT for mortality, graft rejection, number of clinically significant infective episodes, time spent in hospital

(ward and intensive care unit [ICU]) and graft failure or dysfunction.

Results: All patients were nutritionally compromised (evaluated by SGA and NRS 2002), and were divided into two groups: moderately and severely malnourished. Compared with moderately malnourished patients, severely malnourished patients showed significant postoperative hyperbilirubinemia, higher number of infective episodes and longer ICU stay. Preoperative triceps skinfold and mid-arm circumference were negatively correlated with the number of infective episodes ($r = -0.33$, $P = 0.03$ and $r = -0.377$, $P = 0.04$, respectively). Moreover, skeletal muscle mass was negatively correlated with postoperative serum alanine aminotransferase level ($r = -0.52$, $P = 0.003$) and the number of postoperative infective episodes ($r = -0.3$, $P = 0.04$).

Conclusion: Poor nutritional status of Egyptian patients with ESLD negatively affects the patients' outcomes after LDLT.

Keywords: Anthropometry; End Stage Liver Disease; Liver Transplantation; Nutritional Risk Screening 2002; Subjective Global Assessment.

683. Survival and Prognostic Factors for Hepatocellular Carcinoma: An Egyptian Multidisciplinary Clinic Experience

Abdelaziz AO, Elbaz TM, Shousha HI, Ibrahim MM, Rahman El-Shazli MA, Abdelmaksoud AH, Aziz OA, Zaki HA, Elattar IA and Nabeel MM.

Asian Pacific Journal of Cancer Prevention, 15: 3915-3920 (2014) IF: 1.5

Background: Hepatocellular carcinoma (HCC) is a dismal tumor with a high incidence, prevalence and poor prognosis and survival. Management of HCC necessitates multidisciplinary clinics due to the wide heterogeneity in its presentation, different therapeutic options, variable biologic behavior and background presence of chronic liver disease. We studied the different prognostic factors that affected survival of our patients to improve future HCC management and patient survival.

Materials and Methods: This study is performed in a specialized multidisciplinary clinic for HCC in Kasr El Eini Hospital, Cairo University, Egypt. We retrospectively analyzed the different patient and tumor characteristics and the primary mode of management applied to our patients. Further analysis was performed using univariate and multivariate statistics.

Results: During the period February 2009 till February 2013, 290 HCC patients presented to our multidisciplinary clinic. They were predominantly males and the mean age was 56.5 ± 7.7 years. All cases developed HCC on top of cirrhosis that was mainly due to HCV (71%). Most of our patients were Child-Pugh A (50%) or B (36.9%) and commonly presented with small single lesions. Transarterial chemoembolization was the most common line of treatment used (32.4%). The overall survival was 79.9% at 6 months, 54.5% at 1 year and 22.4% at 2 years. Serum bilirubin, site of the tumor and type of treatment were the significant independent prognostic factors for survival.

Conclusions: Our main prognostic variables are the bilirubin level, the bilobar hepatic affection and the application of specific treatment (either curative or palliative). Multidisciplinary clinics enhance better HCC management.

Keywords: Hepatocellular Carcinoma; Multidisciplinary; Prognosis; Survival.

684. Fungal Infections in Liver Transplant Patients Admitted To the Intensive Care Unit

Marzaban R, Salah M, Mukhtar AM, Dwedar RA, Abdel-Latif W and Mahmoud I

Annals of Transplantation, 19: 667-673 (2014) IF: 1.43

Background: Fungal infections have a significant impact on patient survival after liver transplantation, mostly caused by *Candida* and *Aspergillus*. The clinical manifestations vary, and range from colonization, active local infection, to severe invasive form. A high degree of suspicion is required for the early diagnosis and, accordingly, the optimal management of these infections. This study aimed to evaluate fungal infection in the Intensive care Unit (ICU) in admitted liver transplant patients, focussing of etiologic agent, clinical/laboratory presentation (including mortality), and risk factors.

Material/Methods: This retrospective study included living related liver transplanted patients admitted to the ICU. Clinical data was collected, thorough clinical evaluation was done, and laboratory tests were performed. Microbiological examination detecting the presence of fungus in various samples, using cultures and serology, and imaging investigations were carried out in all patients.

Results: This study included 23 cases of ICU-admitted liver transplant patients who were diagnosed with fungal infection. *Candida* was the most common fungal infection and occurred at a mean of 2 months after transplantation; while *Aspergillus* was less common and occurred later with worse laboratory findings. Invasive fungal infection constituted 43% of the diagnosed cases. Difference in mortality between *Aspergillus* and *Candida* was insignificant, as was difference between patients with and without fungal infection.

Conclusions: Fungal infection among LT patients was common, including the invasive forms.

Keywords: Aspergillosis; *Candida*; Liver Transplantation.

685. Egy-Score as A Noninvasive Score for the Assessment of Hepatic Fibrosis in Chronic Hepatitis C: A Preliminary Approach

Mohamed Alborai, Marwa Khairy, Aisha Elsharkawy, Marwa Elsharkawy, Noha Asem, Amany R. Abo El-Seoud, Fathy G. Elghamry and Gamal Esmat

The Saudi Journal of Gastroenterology, 20(3): 170-174 (2014) IF: 1.221

Background and Aims: Egy-Score is a new noninvasive score for prediction of severe hepatic fibrosis in patients with chronic liver diseases. The aim of this study was to validate Egy-Score as a noninvasive score for predicting stage of hepatic fibrosis in a group of Egyptian chronic hepatitis C patients.

Patients and Methods: One hundred Egyptian patients with chronic hepatitis C were enrolled. Mean age was 40.25 ± 9.39 years. They were subjected to CA19-9, alpha-2-macroglobulin, total bilirubin, platelet count and albumin, liver biopsy, and histopathological staging of hepatic fibrosis according to METAVIR scoring system as part of their assessment for treatment. Egy-Score was calculated according to the following formula: $\text{Egy-Score} = 3.52 + 0.0063 \times \text{CA19-9} + 0.0203 \times \text{age} + 0.4485 \times \text{alpha-2-macroglobulin} + 0.0303 \times \text{bilirubin} - 0.0048 \times \text{platelet} - 0.0462 \times \text{albumin}$. Egy-Score results were correlated to the stage of hepatic fibrosis.

Results: Egy-Score correlates positively with the stage of hepatic fibrosis (F0-F4). Egy-Score was able to differentiate significant hepatic fibrosis, severe hepatic fibrosis, and cirrhosis accurately. Cutoff values of Egy-Score were 2.91850 (for significant fibrosis), 3.28624 (for severe fibrosis), and 3.67570 (for cirrhosis). Sensitivity, specificity, and areas-under-ROC curve (AUROCs) were 75.8%, 68.42%, and 0.776 (for significant fibrosis " $\geq F2$ "), 91.67%, 77.63%, and 0.875 (for severe fibrosis " $\geq F3$ "), and 81.82%, 86.52%, and 0.874 (for cirrhosis "F4"), respectively.

Conclusion: Egy-Score is a useful noninvasive panel of surrogate biomarkers that could accurately predict different stages of hepatic fibrosis in patients with chronic hepatitis C.

Keywords: Biomarkers; Cirrhosis; Fibrosis; HCV; Noninvasive.

686. Effect of Preventive and Curative Interventions on Hepatitis C Virus Transmission in Egypt (Anrs 1211): A Modelling Study

Romulus Breban, Naglaa Arafa, Sandrine Leroy, Aya Mostafa, Iman Bakr, Laura Tondeur, Mohamed Abdel-Hamid, Wahid Doss, Gamal Esmat, Mostafa K Mohamed, Arnaud Fontanet and Mohamed died

Lancet Global Health, 2 (9): 541-549 (2014)

Background: Most hepatitis C virus (HCV) transmission in Egypt is related to medical injections and procedures. To control the spread of HCV, the Egyptian Ministry of Health initiated awareness and education campaigns, strengthened infection control in health-care facilities, and subsidised anti-HCV treatment. We aimed to investigate the effect of these interventions on the spread of HCV by mathematical modelling.

Methods: We developed a mathematical model of HCV transmission in Zawyat Razin, a typical rural community. Our model assumes that each individual has two distinct types of medical procedures: injections and more invasive medical procedures. To quantify the severity of the spread of HCV, we used the notion of the basic reproduction number R_0 , a standard threshold parameter signalling whether transmission of an infectious disease is self-sustained and maintains an epidemic. If R_0 is greater than 1, HCV is self-sustained; if R_0 is 1 or less, HCV transmission is not self-sustained. We investigated whether heterogeneity in the rate of injection or invasive medical procedures is the determinant factor for HCV transmission and whether most iatrogenic transmission is caused by a small group of individuals who receive health-care interventions frequently. We then assessed whether interventions targeted at this group could reduce the spread of HCV.

Findings: The R_0 of the spread of HCV without treatment was 3.54 (95% CI 1.28–6.18), suggesting a self-sustained spread. Furthermore, the present national treatment programme only decreased R_0 from 3.54 to 3.03 (95% CI 1.10–5.25). Individuals with high rates of medical injections seem to be responsible for the spread of HCV in Egypt; the R_0 of the spread of HCV without treatment would be 0.64 (95% CI 0.41–0.93) if everybody followed the average behaviour. The effect of treatment on HCV transmission is greatly enhanced if treatment is provided a mean of 2.5 years (95% CI 0.1–9.2) after chronic infection and with drug regimens with more than 80% efficacy. With these treatment parameters, preventive and curative interventions targeting individuals with high rates of medical injections might decrease R_0 below 1 for treatment coverage lower than 5%.

Interpretation: Targeting preventive and curative interventions to individuals with high rates of medical injections in Egypt would result in a greater reduction of the spread of HCV than would untargeted allocation. Such an approach might prove beneficial in other resource-limited countries with health-care-driven epidemics.

Keywords: Inject Drugs; Risk-Factors; Infection; People; Epidemiology; Metaanalysis; Therapy; Spread.

Dept. of Internal Medicine

687. Effect of Sirolimus on Malignancy and Survival After Kidney Transplantation: Systematic Review and Meta-Analysis of Individual Patient Data

Rashad Sami Barsoum

British Medical Journal, 349 g6670: 1-14 (2014) IF: 16.378

Objective: To examine risk of malignancy and death in patients with kidney transplant who receive the immunosuppressive drug sirolimus. Design Systematic review and meta-analysis of individual patient data. Data sources Medline, Embase, and the Cochrane Central Register of Controlled Trials from inception to March 2013. Eligibility Randomized controlled trials comparing immunosuppressive regimens with and without sirolimus in recipients of kidney or combined pancreatic and renal transplant for which the author was willing to provide individual patient level data. Two reviewers independently screened titles/abstracts and full text reports of potentially eligible trials to identify studies for inclusion. All eligible trials reported data on malignancy or survival.

Results: The search yielded 2365 unique citations. Patient level data were available from 5876 patients from 21 randomized trials. Sirolimus was associated with a 40% reduction in the risk of malignancy (adjusted hazard ratio 0.60, 95% confidence interval 0.39 to 0.93) and a 56% reduction in the risk of non-melanoma skin cancer (0.44, 0.30 to 0.63) compared with controls. The most pronounced effect was seen in patients who converted to sirolimus from an established immunosuppressive regimen, resulting in a reduction in risk of malignancy (0.34, 0.28 to 0.41), non-melanoma skin cancer (0.32, 0.24 to 0.42), and other cancers (0.52, 0.38 to 0.69). Sirolimus was associated with an increased risk of death (1.43, 1.21 to 1.71) compared with controls.

Conclusions: Sirolimus was associated with a reduction in the risk of malignancy and non-melanoma skin cancer in transplant recipients. The benefit was most pronounced in patients who converted from an established immunosuppressive regimen to sirolimus. Given the risk of mortality, however, the use of this drug does not seem warranted for most patients with kidney transplant. Further research is needed to determine if different populations, such as those at high risk of cancer, might benefit from sirolimus.

Keywords: Sirolimus; Post-transplant Malignancy; Transplant mortality.

688. Prevalence of Photosensitivity in Chronic Hepatitis C Virus Patients and Its Relation to Serum and Urinary Porphyrins

Serag Esmat, Dina Elgendy, Mohamed Ali, Samia Esmat, Eman A. El-Nabarawy, Sara B. Mahmoud and Olfat Shaker

Liver International, Volume 34 / Issue 7: 1033-1039 (2014) IF: 4.447

Background & Aims: HCV is a major cause of chronic liver disease in Egypt. The aim was to study the prevalence of photosensitivity among asymptomatic HCV-infected patients and its possible relation to porphyrins levels and whether it can be considered an alarm for early diagnosis of the disease, which is the most important goal in the management. Methods: This study included 100 accidentally discovered HCV positive cases and 100 HCV negative healthy controls. All patients and controls were subjected to: Detailed history and clinical examination, dermatological examination including evaluation of reaction to solar exposure, measurement of serum AST, ALT, albumin, bilirubin, serum and urinary porphyrins levels.

Results: The prevalence of photosensitivity among HCV-positive cases (33%) was significantly higher compared to 10% in the control group. Serum porphyrins were positive in 46 cases (46%), twenty-three cases (23%) had positive urinary porphyrins, while only four controls (4%) showed positive serum porphyrins and one (1%) showed positive urinary porphyrins, the difference was statistically significant. Cases with photosensitivity showed significantly higher prevalence of serum and urinary porphyrins existence as well as serum porphyrins levels. Levels of viraemia showed statistically significant relation to levels of porphyrins.

Conclusion: Asymptomatic chronic HCV infection cases showed significantly high prevalence of photosensitivity, which is related to the associated disturbance of porphyrins metabolism. Photosensitivity can thus be considered an early marker of HCV infection. Patients discovered to have recently acquired photosensitivity should be screened for HCV infection especially in endemic areas like Egypt.

Keywords: Chronic Viral Hepatitis; Extrahepatic Manifestations Of Hcv; Photosensitivity; Porphyria Cutanea Tarda (PCT); Porphyrins metabolism.

689. Validation of the Classification Criteria for Cryoglobulinaemic Vasculitis

Quartuccio L, Isola M, Corazza L, Ramos-Casals M, Retamozo S, Ragab GM, Zoheir MN, El-Menyawi MA, Salem MN, Sansonno D, Ferraccioli G, Gremese E, Tzioufas A, Voulgarelis M, Vassilopoulos D, Scarpato S, Pipitone N, Salvarani C, Guillevin L, Terrier B, Cacoub P, Filippini D, Saccardo F, Gabrielli A, Fraticelli P, Sebastiani M, Tomsic M, Tavoni A, Mazzaro C, Pioltelli P, Nishimoto N, Scaini P, Zignego AL, Ferri C, Monti G, Pietrogrande M, Bombardieri S, Galli M and De Vita S

Rheumatology, 35(12): 262-267 (2014) IF: 4.435

Objective: The aim of this study was to validate the classification criteria for cryoglobulinaemic vasculitis (CV).

Methods: Twenty-three centres were involved. New patients with CV (group A) and controls, i.e. subjects with serum cryoglobulins but lacking CV based on the gold standard of clinical judgment (group B) and subjects without cryoglobulins but with clinical features that can be observed in the course of CV (group C), were studied. Positivity of serum cryoglobulins was necessary for CV classification. Sensitivity and specificity of the criteria were calculated by comparing group A vs group B. The group A vs group C comparison was done to demonstrate the possible diagnostic utility of the criteria.

Results: The study included 268 patients in group A, 182 controls in group B and 193 controls in group C (small vessel vasculitis, 51.8%). The questionnaire (at least 2/3 positive answers) showed 89.0% sensitivity and 93.4% specificity; the clinical item (at least 3/4 clinical involvement) showed 75.7% sensitivity and 89.0% specificity and the laboratory item (at least 2/3 laboratory data)

showed 80.2% sensitivity and 62.4% specificity. The sensitivity and specificity of the classification criteria (at least 2/3 positive items) were 89.9% and 93.5%, respectively. The comparison of group A with group C demonstrated the clinical utility of the criteria in differentiating CV from CV mimickers.

Conclusion: Classification criteria for CV were validated in a second, large, international study confirming good sensitivity and specificity in a complex systemic disease.

Keywords: Cryoglobulinaemia; Hepatitis C; Classification; Vasculitis.

690. Epidemiological and Clinical Characteristics of Inflammatory Bowel Diseases in Cairo, Egypt

Serag Esmat, Mohamed El Nady, Mohamed Elfekki, Yehia Elsherif and Mazen Naga

World Journal of Gastroenterology, 20: 814-821 (2014) IF: 2.433

Aim: To study the natural history, patterns and clinical characteristics of inflammatory bowel diseases (IBD) in Egypt.

Methods: We designed a case-series study in the gastroenterology centre of the Internal Medicine department of Cairo University, which is a tertiary care referral centre in Egypt. We included all patients in whom the diagnosis of ulcerative colitis (UC) or Crohn's disease (CD) was confirmed by clinical, laboratory, endoscopic, histological and/or radiological criteria over the 15 year period from 1995 to 2009, and we studied their sociodemographic and clinical characteristics. Endoscopic examinations were performed by 2 senior experts. This hospital centre serves patients from Cairo, as well as patients referred from all other parts of Egypt. Our centre received 24156 patients over the described time period for gastro-intestinal consultations and/or interventions.

Results: A total of 157 patients with established IBD were included in this study. Of these, 135 patients were diagnosed with UC (86% of the total), and 22 patients, with CD (14% of the total). The mean ages at diagnosis were 27.3 and 29.7, respectively. Strikingly, we noticed a marked increase in the frequency of both UC and CD diagnoses during the most recent 10 years of the 15 year period studied. Regarding the gender distribution, the male:female ratio was 1:1.15 for UC and 2.6:1 for CD. The mean duration of follow up for patients with UC was 6.2 ± 5.18 years, while the mean duration of follow up for patients with CD was 5.52 ± 2.83 years. For patients with UC we found no correlation between the severity of the disease and the presence of extraintestinal manifestations. Eleven patients had surgical interventions during the studied years: 4 cases of total colectomy and 7 cases of anal surgery.

Conclusion: We observed a ratio of 6:1 for UC to CD in our series. The incidence of IBD seems to be rising in Egypt.

Keywords: Natural History of Inflammatory Bowel Diseases; Epidemiology of Ulcerative Colitis; Epidemiology of Crohn's Disease; Epidemiology of Inflammatory Bowel Diseases in Egypt; Inflammatory Bowel Diseases Prevalence; Incidence of Ulcerative Colitis; Incidence of Crohn's Disease.

691. Multiple Myeloma: A Descriptive Study of 217 Egyptian Patients

Noha M. El Husseiny, Neemat Kasem, Hamdy Abd El Azeem and Mervat W. Mattar

Ann Hematol, 93: 141-145 (2014) IF: 2.396

Multiple myeloma is a neoplasm of plasma cells that results in the overproduction of light and heavy chain monoclonal immunoglobulins. The incidence rate increases with age, particularly after 40 years, and is higher in men. To determine the clinical and laboratory characteristics and survival of diagnosed Egyptian multiple myeloma patients admitted to the Haemato-Oncology Department between 2000 and 2010. Records of all patients in whom multiple myeloma was diagnosed at the Kasr Al Aini Hospital between 2000 and 2010 were included in this retrospective study. The mean age of patients was 58.5 years (range, 27–80 years). Fifty-nine percent were males. The majority of patients (73 %) had an immunoglobulin G monoclonal band and 70 % were Kappa chain-positive. Mean overall survival was 37.5 months (range, 1–84 months). Survival analysis was statistically insignificant with respect to age, sex, International Staging System and type of treatment ($p > 0.05$). Our records were largely comparable to those reported in Chinese studies but different from those noted in Western and Arabic countries.

Keywords: Myeloma; Chemotherapy; Epidemiology.

692. P Selectins and Immunological Profiles in HCV and Schistosoma Mansoni Induced Chronic Liver Disease

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BMC Gastroenterol, 14(132): 1-9 (2014) IF: 2.113

Background: Hepatitis C virus (HCV) and *Schistosoma mansoni* are major causes of chronic liver disease (CLD) in which immune alteration is common. Recent studies suggested that certain platelets and lymphocytes activation markers may have an impact on progression of CLD. This study aimed to evaluate the potential of platelets and lymphocytes activation molecules expression on the pathogenesis of CLD in distinct or concomitant chronic HCV and schistosomiasis *mansoni* infections.

Methods: The study populations were divided into group-I: patients with chronic schistosomiasis *mansoni*, group-II: HCV patients without cirrhosis, group-III: patients with combined liver diseases without cirrhosis, group-IV: patients with chronic HCV and liver cirrhosis and group-V: Age and sex matched healthy individuals as normal controls. All groups were subjected to full clinical evaluation, ELISA anti-HCV antibodies screening, parasitological examination for diagnosing *S. mansoni* and flow cytometry for lymphocyte (CD3, CD4, CD8, CD19, CD22, & CD56) and platelets activation (CD41, CD42 & CD62P (P-selectins)) markers.

Results: The platelet count was significantly decreased in HCV and/or *S. mansoni* patients. The total T-lymphocytes and T-helper cells were significantly reduced, while T-cytotoxic were increased. The patients possessed a significantly higher platelets activation marker; CD62P (P-selectins) and higher mean fluorescent intensity (MFI) positivity. There were considerable correlations between platelets count and both of CD62P and MFI.

Conclusion: Our Findings suggest an increased expression of certain platelets and lymphocytes activation markers in chronic HCV and *S. mansoni* induced CLD that may have a role in disease progression.

Keywords: HCV; Schistosomiasis Mansoni; Activated Platelets; Cd62; Lymphocyte Activation.

693. Molecular Identification of *Giardia Intestinalis* in Patients With Dyspepsia

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Digestion, Vol. 90, No. 1: 63-71 (2014) IF: 2.032

Background/Aims: *Giardia intestinalis* triggers symptoms of functional dyspepsia. The aim of this study was to distinguish genotypes of *G. intestinalis* isolated from dyspeptic patients to evaluate their correlation with dyspeptic symptoms. **Methods:** In total, 120 dyspeptic subjects were investigated by upper endoscopy, including gastric and duodenal biopsies for histopathological examination, and parasitological examination of their stools and duodenal aspirates was performed. The patients were classified into five groups: group I (*G. intestinalis*) included 19 patients, group II (*Helicobacter pylori*) included 36 patients, group III (coeliac disease) included 3 patients, group IV (mixed *G. intestinalis* and *H. pylori* infection) included 4 patients, and group V (unexplained aetiology) included 58 patients. Genotyping of *G. intestinalis* was performed for groups I and IV using PCR-RFLP. The urease test was performed for *H. pylori*. Serum anti-gliadin, anti-endomysial and anti-transglutaminase antibody estimation was performed for the diagnosis of coeliac disease. **Results:** Genotype A of *G. intestinalis* was detected in the stool samples of 68.42% (13/19) and the duodenal aspirates of 42.1% (8/19) of dyspeptic patients harbouring the parasite. Genotype B was detected in 31.58% (6/19) of cases in stool samples and in 3 cases in duodenal aspirates. **Conclusions:** *H. pylori*, *G. intestinalis* and coeliac disease are common causes of dyspepsia. *G. intestinalis* genotype A demonstrated a greater association with dyspeptic symptoms.

Keywords: *Giardia intestinalis*; *Giardia intestinalis* genotypes; Dyspeptic symptoms.

694. Diagnostic Value of Serum Level of Soluble Tumor Necrosis Factor Receptor IIa in Egyptian Patients With Chronic Hepatitis C Virus Infection and Hepatocellular Carcinoma

Fouad SA, Elsaaid NH, Mohamed NA and Abutaleb OM

Hepatitis Monthly, (2014) IF: 1.796

Background: The prognosis of hepatocellular carcinoma (HCC) is unfavorable and needs serum markers that could detect it early to start therapy at a potentially curable phase.

Objectives: The aim of this study was to determine the value of serum soluble tumor necrosis factor (TNF) receptor-IIa (sTNFR-IIa) in diagnosis of HCC in patients with chronic hepatitis C virus (HCV) infection.

Patients and Methods: The study was performed on 110 subjects who were classified into five groups. Group I included 20 patients with chronic noncirrhotic HCV infection and persistently normal transaminases for ≥ 6 months. Group II included 20 patients with chronic noncirrhotic HCV infection and elevated transaminases. Group III included 20 patients with Chronic HCV infection and liver cirrhosis. Group IV included 20 patients with chronic HCV infection with liver cirrhosis and HCC. Group V included 30 healthy age and sex-matched controls. Medical history was taken from all participants and they underwent clinical examination and abdominal ultrasonography. In addition, the following laboratory tests were requested: liver function tests, complete blood count,

HBsAg, anti-HCVAb, HCV-RNA by qualitative PCR, and serum levels of α -fetoprotein (AFP) and sTNFR-IIa.

Results: The serum level of sTNFR-IIa was significantly higher in patients with HCC in comparison to the other groups. A positive correlation was found between the serum levels of sTNFR-IIa and AST and ALT in patients of group-II. Diagnosis of HCC among patients with HCV infection and cirrhosis could be ascertained when sTNFR-IIa is assessed at a cutoff value of ≥ 250 pg/mL.

Conclusions: Serum sTNFR-IIa could be used as a potential serum marker in diagnosing HCC among patients with HCV infection.

Keywords: Liver Cirrhosis; Hepatocellular Carcinoma; Hepatitis C Virus; sTNFR-IIa.

695. A Study of Hepcidin and Monocyte Chemoattractant Protein-1 in Egyptian Females With Systemic Lupus Erythematosus

Mohammed MF, Belal D, Bakry S, Marie MA, Rashed L, Eldin RE and El-Hamid SA.

J. of Clinical Laboratory Analysis, 28: 306-309 (2014) IF: 1.144

Background: Lupus nephritis is one of the most serious manifestations of systemic lupus erythematosus (SLE). Novel biomarkers are necessary to enhance the diagnostic accuracy, prognostic stratification, monitoring of treatment response, and detection of early renal flares.

Methods: Our study was conducted on 90 participants. They were divided into three groups, group I (controls) encompassed 30 ages and sex-matched healthy personnel. Group II included 30 non-nephritic SLE patients and finally group III included 30 SLE nephritic patients. Urinary monocyte chemoattractant protein-1 (UMCP-1) and hepcidin were evaluated by ELISA technique, compared and correlated in different groups, with each other and with other routine variables and with renal biopsy done to study group (III).

Results: Both UMCP-1 and hepcidin in group III showed significant increase compared to other two groups (controls and group II) (468 ± 128 , 111 ± 12 , 252 ± 56 pg/ml, respectively, for UMCP-1 and 40 ± 12 , 11 ± 2 , 20 ± 5 ng/ml, respectively, for hepcidin, $P < 0.01$). Also both UMCP-1 and hepcidin in group III showed significant increase in diffuse proliferative subgroup compared to focal proliferative and mesangioproliferative subgroups (580 ± 43 , 502 ± 46 , and 352.6 ± 100 pg/ml, respectively, for UMCP-1 and 47.8 ± 9.5 , 41.4 ± 6 , and 32.9 ± 10.8 ng/ml, respectively, for urinary hepcidin, $P < 0.05$).

Conclusion: UMCP-1 and hepcidin could be associated with the susceptibility of lupus nephritis.

Keywords: Lupus nephritis; Urinary biomarkers; Monocyte chemoattractant Protein-1.

696. New Insights on Iron Study in Myelodysplasia

Noha M. El Hussein, Dina Ahmed Mehaney and Mohamed Abd El Kader Morad

Turk J. Haemato, 31: 394-398 (2014) IF: 0.34

Objective: Hepcidin plays a pivotal role in iron homeostasis. It is predominantly produced by hepatocytes and inhibits iron release from macrophages and iron uptake by intestinal epithelial cells. Competitive ELISA is the current method of choice for the quantification of serum hepcidin because of its lower detection

limit, low costs, and high throughput. This study aims to discuss the role of hepcidin in the pathogenesis of iron overload in recently diagnosed myelodysplasia (MDS) cases.

Materials and Methods: The study included 21 recently diagnosed MDS patients and 13 healthy controls. Ferritin, hepcidin, and soluble transferrin receptor (sTFR) were measured in all subjects.

Results: There were 7 cases of hypocellular MDS, 8 cases of refractory cytopenia with multilineage dysplasia, and 6 cases of refractory anemia with excess blasts. No difference was observed among the 3 MDS subtypes in terms of hepcidin, sTFR, and ferritin levels ($p > 0.05$). Mean hepcidin levels in the MDS and control groups were 55.8 ± 21.5 ng/mL and 19.9 ± 2.6 ng/mL, respectively. Mean sTFR was 45.7 ± 8.8 nmol/L in MDS patients and 31.1 ± 5.6 nmol/L in the controls. Mean ferritin levels were significantly higher in MDS patients than in controls (539.14 ± 83.5 ng/mL vs. 104.6 ± 42.9 ng/mL, $p < 0.005$). There was a statistically significant correlation between hepcidin and sTFR ($r = 0.45$, $p = 0.039$). No difference in hepcidin levels between males and females was observed, although it was lower in males in comparison to females (47.9 ± 27.6 vs. 66.7 ± 35.7 , $p > 0.05$).

Conclusion: Hepcidin may not be the main cause of iron overload in MDS. Further studies are required to test failure of production or peripheral unresponsiveness to hepcidin in MDS cases.

Keywords: Hepcidin; Myelodysplasia; Iron overload.

Dept. of Medical Biochemistry and Molecular Biology

697. Impairment of Nitric Oxide Synthase But Not Heme Oxygenase Accounts for Baroreflex Dysfunction Caused By Chronic Nicotine in Female Rats

Mohamed A. Fouda, Hanan M. El-Gowelli, Sahar M. El-Gowilly, Laila Rashed and Mahmoud M. El-Mas

Plos One., (2014) IF: 3.534

We recently reported that chronic nicotine impairs reflex chronotropic activity in female rats. Here, we sought evidence to implicate nitric oxide synthase (NOS) and/or heme oxygenase (HO) in the nicotine-baroreflex interaction. Baroreflex curves relating changes in heart rate to increases (phenylephrine) or decreases (sodium nitroprusside) in blood pressure were generated in conscious female rats treated with nicotine or saline in absence and presence of pharmacological modulators of NOS or HO activity. Compared with saline-treated rats, nicotine (2 mg/kg/day i.p., for 14 days) significantly reduced the slopes of baroreflex curves, a measure of baroreflex sensitivity (BRS). Findings that favor the involvement of NOS inhibition in the nicotine effect were (i) NOS inhibition (N_{∞} -Nitro-L-arginine methyl ester, L-NAME) reduced BRS in control rats but failed to do so in nicotine-treated rats, (ii) L-arginine, NO donor, reversed the BRS inhibitory effect of nicotine. Alternatively, HO inhibition (zinc protoporphyrin IX, ZnPP) had no effect on BRS in nicotine- or control rats and failed to reverse the beneficial effect of L-arginine on nicotine-BRS interaction. Similar to female rats, BRS was reduced by L-NAME, but not ZnPP, in male rats and the L-NAME effect was not accentuated after concomitant administration of nicotine. Baroreflex dysfunction caused by nicotine in female rats was blunted after supplementation with hemin (HO inducer) but not tricarbonyldichlororuthenium(II) dimer (CORM-2), a carbon monoxide (CO) releasing molecule, or bilirubin, the breakdown product of heme catabolism. The

facilitatory effect of hemin was abolished upon simultaneous treatment with L-NAME or 1H-[1], [2], [4] oxadiazolo[4,3-a]quinoxalin-1-one (inhibitor of soluble guanylate cyclase, sGC). The activities of HO and NOS in brainstem tissues were also significantly increased by hemin. Thus, the inhibition of NOS, but not HO, accounts for the baroreflex depressant of chronic nicotine. Further, hemin alleviates the nicotine effect through a mechanism that is NOS/sGC but not CO or bilirubin-dependent

Keywords: Baroreflex dysfunction; Nitric oxide; Hemeoxygenase.

698. Occupational Exposure to Aluminum and its Amyloidogenic Link With Cognitive Functions

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Journal of Inorganic Biochemistry, 139: 57-64 (2014) IF: 3.274

As many other metals, aluminum is a widely recognized neurotoxicant and its link with neurodegenerative disorders has been the subject of scientific debate. One proposal focuses on amyloid β deposition (amyloidogenesis) as the key player in triggering neuronal dysfunction the so-called amyloid cascade hypothesis. We undertook this study first to investigate the cognition status of workers exposed to Al dust in an Al factory in Southern Cairo, second, to evaluate serum amyloid precursor protein (APP) and cathepsin D (CD) enzyme activity to study the possible role of Al in amyloidogenesis, and finally to explore the relation between these potential biomarkers and cognitive functions. The study was conducted on 54 exposed workers and 51 matched controls. They were subjected to questionnaire, neurological examination and a cognitive test battery, Addenbrooke's Cognitive Examination - Revised (ACE-R). Serum Al, APP and CD enzyme activity were measured. A significant increase of serum Al was found in the exposed workers with an associated increase in serum APP and decrement in CD activity. The exposed workers displayed poor performance on the ACE-R test. No significant correlation was detected between ACE-R test total score and either APP or CD activity. We concluded that occupational exposure to Al is associated with cognitive impairment. The effect of occupational Al exposure on the serum levels of APP and CD activity may be regarded as a possible mechanism of Al in amyloidogenesis. However, our findings do not support the utility of serum APP and CD activity as screening markers for early or preclinical cognitive impairment.

Keywords: Aluminum; Occupational Exposure; Amyloidogenesis; Amyloid Precursor Protein; Cathepsin D Activity; ACE; R Test.

699. Dose-Dependent Bioavailability Indicators for Curcumin and Two of Its Novel Derivatives

Mohamed Abd el Aziz, Mohamed El-Asmer, Ameen Rezaq, Abdulrahman Al-Malki, Taha Kumosani, Hanan Fouad, Hanan Ahmed, Fatma Taha, Amira Hassouna and Hafez Hafez

Biofactors, 40: 132-137 (2014) IF: 3

Novel water-soluble curcumin derivatives have been developed to overcome low in vivo bioavailability of curcumin. The aim of this work is to assess the potential utility of certain downstream targets as bioavailability indicators of systemic activity of pure curcumin and two novel water-soluble curcumin derivatives

(NCD) by constructing dose-dependent response curves and to prove whether this novel curcumin derivatives retained, improved, or abolished biological activity of pure curcumin when applied in vivo. Pure curcumin (CUR), curcumin-carboxy derivative (NCD-1), and curcumin protein conjugate (NCD-2) were administered orally to rats at escalating doses: 37, 74, 148, and 296 $\mu\text{M}/\text{kg}$ body weight, respectively. Plasma levels of GST activity, cavernous tissue levels of cGMP, and enzymatic activity of both HO-1 and GST were assessed one and half and 24 hours after oral administration of curcumin formulae. This study showed that there was a progressive elevation of cavernous tissue levels of cGMP and enzymatic activity of both HO-1 and GST in a dose-dependent manner that was maintained for 24 h with CUR, NCD-1, and NCD-2. Plasma GST activity was decreased by the lowest doses on the curve. The three dose-dependent bioavailability indicators as surrogates of curcumin and two of its novel derivatives are valid in the studied range of concentration and extended time. The novel curcumin derivatives still conserve with improvement the biological activity of natural curcumin when applied in vivo.

Keywords: Bioavailability Curcumin Novel Derivatives.

700. Pilot Study On Molecular Quantitation and Sequencing of Endometrial Cytokines Gene Expression and Their Effect On the Outcome of in Vitro Fertilization (Ivf) Cycle.

Dina Sabry Abd El Fatah

Journal of Advanced Research, 5(5): 595-600 (2014) IF: 3

Human trophoblast invasion and differentiation are essential for successful pregnancy outcome. The molecular mechanisms, however, are poorly understood. Interleukin (IL)-11, a cytokine, regulates endometrial epithelial cell adhesion. Leukemia inhibitory factor (LIF) is one of the key cytokines in the embryo implantation regulation. The present study aimed to assess the levels of LIF, IL-11, and IL-11 receptor gene expression in the endometrium of women undergoing IVF and correlate their levels with the IVF pregnancy outcome. Also, the study aimed to detect any mutation in these three genes among IVF pregnant and non-pregnant women versus control menstrual blood of fertile women. Endometrial tissue biopsies were taken from 15 women undergoing IVF on the day of oocyte retrieval. The quantitative expression of IL-11, IL-11Ra, and LIF genes was assessed by real-time PCR and PCR products were sequenced. Menstrual blood from 10 fertile women was used as control to compare the DNA sequence versus DNA sequence of the studied genes in endometrial biopsies. LH, FSH, and E2 were assessed for enrolled patients by ELISA. Endometrial thickness was also assessed by pelvic ultrasonography. No significant difference was detected between quantitative expression of the three studied genes and pregnancy IVF outcome. Although DNA sequence changes were found in IL-11 and LIF genes of women with negative pregnancy IVF outcome compared to women with positive pregnancy IVF outcome, no DNA sequence changes were detected for IL-11Ra. Other studied parameters (e.g., age, LH, FSH, E2, and endometrial thickness) showed no significant differences or correlation of quantitative expression of the three studied involved genes. Data suggested that there were no significant differences between quantitative expression of IL-11, IL-11Ra, and LIF genes and the IVF pregnancy outcome. The present study may reveal that changes in IL-11 and LIF genes sequence may contribute in pregnancy IVF outcome.

Keywords: Dna Sequence; E2; Estradiol 2; Fsh; Follicular stimulating hormone; Il-11; Interleukin 11; Il-11Ra; Interleukin receptor A; Ivf; Ivf, In Vitro Fertilization; Interleukin-11 (Il-11); Interleukin-11 Receptor A (Il-11Ra); Lh; Luteinizing Hormone; Lif; Leukemia inhibitory factor; Leukemia inhibitory factor (Lif).

701. Expression of Tnf- α , April and BCMA in Behcet'S Disease

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Journal of Immunology Research, 380405: 1-6 (2014) IF: 2.934

Background: Tumor necrosis factor-alpha (TNF- α) is an important proinflammatory cytokine which plays an important role in the immunopathogenesis of Behcet's disease (BD). B cell activating factor (BAFF) and its homolog A proliferation inducing ligand (APRIL) are members of the tumor necrosis factor family. BAFF binds to 3 receptors, B cell activating factor receptor (BAFF-R), transmembrane activator and calcium modulator ligand interactor (TACI), and B cell maturation antigen (BCMA) that are expressed by B cells.

Objective: Estimation of the serum levels of TNF- α , APRIL, BAFF, and BCMA in patients with BD in an effort to evaluate their degree of involvement in the pathogenesis and development of BD.

Patients and Methods: This study included 30 male patients fulfilling the international study group criteria for the diagnosis of BD. Twenty age-matched healthy male volunteers served as control. Serum samples were used for quantification of TNF- α , APRIL, BCMA, BAFF, and hsCRP using ELISA techniques.

Results: The mean serum levels of TNF- α , APRIL, BCMA, and BAFF were more elevated in cases than in controls in a statistically significant manner. Positive correlation was observed between hs-CRP and BDCAF (Behcet's disease current activity forum) index (r 0.68, . None of the TNF family members tested was affected by a positive pathergy test.

Conclusions: Patients have significantly higher levels of TNF family members' (TNF- α , BAFF, APRIL, and BCMA) compared to controls which might contribute to the pathogenesis of BD.

Keywords: Tnf-A; Behcet'S Disease; Bdcf.

702. Mesenchymal Stromal Cells Versus Betamethasone Can Dampen Disease Activity in the Collagen Arthritis Mouse Model

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Clin Exp Med, 14: 285-295 (2014) IF: 2.824

The objective of this study was to compare between the effects of mesenchymal stem cell (MSC) and betamethasone in the treatment of rheumatoid arthritis. Sixty male albino mice were divided equally into 2 models. They are MSC model, group 1: saline control group, group 2: collagen-induced arthritis (CIA), group 3: induced arthritis mice that received intravenous injection of MSCs. Betamethasone model, group 1: phosphate buffer saline, group 2: CIA, group 3: induced arthritis mice that received intraperitoneal injection of betamethasone. Mice arthritis models were assessed by clinical paw edema and X-rays, at the proper time of sacrefaction, tissues were collected and examined using real-time PCR, and synovial tissue was examined for interleukin-10, tumor necrosis factor a, cartilage oligomeric matrix protein

and matrix metalloproteinase 3. While serum levels of rheumatoid factor and C-reactive protein were detected by enzyme-linked immunosorbent assay kits. Also blood erythrocyte sedimentation rate was detected. Histopathological, paw edema and PCR results showed improvement in the groups that received MSC compared with the diseased group and the groups which received betamethasone. MSC significantly enhanced the effect of collagen-induced arthritis treatment, which is superior to betamethasone treatment, likely through the modulation of the expression of various cytokines.

Keywords: Collagen-Induced Arthritis Stromal Cell Corticosteroid Rheumatoid Arthritis.

703. Potential Therapeutic Utility of Mesenchymal Stem Cells in Inflammatory Bowel Disease in Mice

Abdel Salam AG, Ata HM, Salman TM, Rashed LA, Sabry D and Schaaln MF

Int. Immunopharmacology, 22(2): 515-521 (2014) IF: 2.711

Mesenchymal stem cells (MSCs) were found to provide an effective therapeutic role in inflammatory diseases by modulating inflammatory responses and tissue regeneration by their differentiation ability. The present work sought to demonstrate the potential therapeutic use of MSCs in treating chronic inflammatory bowel disease (IBD) in mice. A new model to induce chronic IBD based on alternative administration periods of Dextran Sodium Sulfate (DSS) was established. Mice were divided into 2 groups; one was treated with MSCs and the other was treated with phosphate-buffered saline (PBS). Assessment of therapeutic efficacy of MSCs was by measuring weight, stool scoring, histopathological examination, and measuring the gene expression of inflammatory markers: Interleukin-23 (IL-23), Tumor necrosis factor- α (TNF- α), Interferon- γ (IFN- γ), and Intercellular adhesion molecule-1 (ICAM-1). The results showed that DSS administration causes bloody and watery stool, weight loss, and altered histopathologic picture. MSC treated mice showed a significant improvement in stool condition, weight gain, and normal histopathologic picture compared to the PBS treated mice. Moreover, gene expressions of inflammatory markers in the intestines of the MSC treated mice were also significantly lower than those of the PBS treated mice. In conclusion, the data here showed that MSCs have a clear potential efficacy in the treatment for IBD, as their immune modulation effects include inhibition in the expression of key inflammatory markers that each plays an important role in the pathogenesis of IBD.

Keywords: Bone Marrow Derived Mesenchymal Stem Cell Transplantation; Dss Induced Colitis; Immunomodulation.

704. Molecular Detection of Monocyte Chemotactic Protein-1 Polymorphism in Spontaneous Bacterial Peritonitis Patients

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World Journal of Gastroenterology, 20(33): 11793-11799 (2014) IF: 2.433

Aim: To investigate the association of the functional monocyte chemotactic protein-1 (MCP-1) promoter polymorphism (A-2518G) with spontaneous bacterial peritonitis (SBP).

Methods: Fifty patients with post-hepatitis C liver cirrhosis and ascites were categorized into two groups; group I included 25 patients with SBP and group II included 25 patients free from SBP. In addition, a group of 20 healthy volunteers were included. We assessed the MCP-1 gene polymorphism and gene expression as well as IL-10 levels in both blood and ascitic fluid.

Results: A significant MCP-1 gene polymorphism was detected in groups I and II ($P = 0.001$ and 0.02 respectively). Group II was associated with a significantly higher frequency of AG genotype [control 8 (40%) vs SBP 19 (76.0%), $P < 0.001$], and group II was associated with a significantly higher frequency of GG genotype when compared to healthy volunteers [control 1 (5%) vs cirrhotic 16 (64%), $P < 0.001$]. Accordingly, the frequency of G allele was significantly higher in both groups (I and II) [control 10 (25%) vs SBP 27 (54%), $P < 0.001$ and vs cirrhotic 37 (74.0%), $P < 0.001$, respectively]. The total blood and ascetic fluid levels of IL-10 and MCP-1 gene expression were significantly higher in group I than in group II. Group I showed significant reductions in the levels of MCP-1 gene expression and IL-10 in the whole blood and ascetic fluid after therapy.

Conclusion: MCP-1 GG genotype and G allele may predispose HCV infected patients to a more progressive disease course, while AG genotype may increase the susceptibility to SBP. Patients carrying these genotypes should be under supervision to prevent or restrict further complications.

Keywords: Monocyte Chemotactic Protein-1; Genotype; Spontaneous Bacterial Peritonitis; Liver Cirrhosis; Ascites; Gene Expression; Interleukin-10.

705. Effects of A Novel Curcumin Derivative on Insulin Synthesis and Secretion in Streptozotocin-Treated Rat Pancreatic Islets in Vitro

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Chinese Medicine, 9: 2-12 (2014) IF: 2.343

Background: Hyperglycemia induces activation of the c-Jun N-terminal kinase (JNK) pathway, which suppresses insulin gene expression and reduces DNA binding of pancreatic and duodenal homeobox factor (PDX)-1. This study aims to investigate the effects of a novel curcumin derivative (NCD) on JNK signaling pathway on insulin synthesis and secretion in streptozotocin (STZ)-treated rat pancreatic islets in vitro.

Methods: Isolated rat pancreatic islets were divided into five groups: untreated control group; group treated with NCD (10 μ M); group exposed to STZ (5 mM); group treated with NCD (10 μ M) and then exposed to STZ (5 mM); and group exposed to STZ (5 mM) and then treated with NCD (10 μ M). The pancreatic islets from all groups were used for DNA fragmentation assays and quantitative assessments of the JNK, Pdx1, glucose transporter-2 (GLUT2), heme oxygenase (HO)-1, transcription factor 7-like 2 (TCF7L2), and glucagon-like peptide (GLP)-1 gene expression levels. The intracellular calcium, zinc, and the phosphorylated and total JNK protein levels were assessed. The insulin (secreted/total) and C-peptide levels were examined in islet culture medium.

Results: NCD protected pancreatic islets against STZ-induced DNA damage, improved total insulin ($P = 0.001$), secreted insulin ($P = 0.001$), and C-peptide levels ($P = 0.001$), normalized mRNA

expressions of insulin, Pdx1, and GLUT2 (P=0.0001), and significantly elevated calcium and zinc levels (P=0.0001). All effects were significant when islets were treated with NCD before STZ (P=0.05). JNK gene overexpression and JNK protein levels induced by STZ were significantly inhibited after NCD treatment of islets (P=0.0001). NCD -treated islets showed significantly elevated gene expressions of HO-1, TCF7L2, and GLP-1 (P=0.0001), and these upregulated gene expressions were more significantly elevated with NCD treatment before STZ than after STZ (P=0.05).

Conclusions: NCD improved insulin synthesis and secretion in vitro in isolated pancreatic islets treated with STZ through inhibition of the JNK pathway, up-regulation of the gene expressions of HO-1, TCF7L2, and GLP-1 and enhancing effects on calcium and zinc levels.

Keywords: Curcumin; Insulin; Synthesis; Secretion; Diabetes.

706. The Potential Impact of P53 and APO-1 Genetic Polymorphisms On Hepatitis C Genotype 4A Susceptibility

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Gene, 550: 40-45 (2014) IF: 2.082

The hepatitis C virus (HCV), the main cause of morbidity and mortality, is endemic worldwide. HCV causes cirrhosis and other complications that often lead to death. HCV is most common in underdeveloped nations, with the highest prevalence rates in Egypt. Tumor suppressor gene (P53) induces the expression of apoptotic antigen-1 gene (APO-1) by binding to its promoter for mediating apoptosis; an important mechanism for limiting viral replication. This study aims at investigating the impact of P53 72 Arg/Pro and APO-1 -670 A/G polymorphisms on HCV genotype 4a susceptibility. Two hundred and forty volunteers were enrolled in this study and divided into two major groups; 160 HCV infected patient group and 80 healthy control group. HCV patients were classified according to Metavir scoring system into two subgroups; 72 patients in F0/1-HCV subgroup (patients with no or mild fibrotic stages) and 38 patients in F3/4-HCV subgroup (patients with advanced fibrotic stages). Quantification of HCV-RNA by qRT-PCR and fibrotic scores as well as genotyping of HCV-RNA, P53 at 72 Arg/Pro, and APO-1 at -670 A/G were performed for all subjects. It was resulted that F0/1-HCV patients have significant differences of P53 at 72 (Pro/Pro and Arg/Arg) genotypes and dominant/recessive genetic models as well as APO-1 -670 A/A genotype and dominant genetic model as compared to F3/4-HCV patients. Moreover, HCV patients have significant differences of P53 at 72 (Pro/Pro) genotype and recessive genetic model as well as APO-1 -670 A/A genotype and dominant genetic model as compared to those of healthy individuals. Finally, it was concluded that P53 rs 1042522 (Pro/Pro and Arg/Arg) genotypes and APO-1 rs 1800682 A/A genotype may be potentially used as sensitive genetic markers for HCV genotype 4a susceptibility.

Keywords: P53 Arg72pro- Apo-1 -670A/G- Snps -Hcv Genotype 4A.

707. Association Between TNF Promoter -308 G>A and LTA 252 A>G Polymorphisms and Systemic Lupus Erythematosus

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Molecular Biology Reports, 41(4): 2029-2036 (2014) IF: 1.958

Tumor necrosis factor (TNF) and lymphotoxin alpha (LTA) are pivotal cytokines in the pathogenesis of systemic lupus erythematosus (SLE). To investigate the possible association of the polymorphism of the TNF promoter gene -308 and that of the LTA gene 252 with susceptibility to SLE and with phenotypic disease features in Egyptian patients. A case control study involving 100 SLE patients and 100 unrelated healthy controls. Polymerase chain reaction and restriction fragment length polymorphism methods were applied to detect genetic polymorphism. We found that TNF-308 genotype AA was significantly increase by 26 % in SLE patients compared to 10 % in the control group (p = 0.003; OR 3.16; CI 1.43-6.98) and the frequency of the A allele of the TNF promoter -308 was significantly higher in the SLE patients (42 %) than in the control subjects (24 %) (p < 0.001; OR 2.29; 95 % CI 1.49-3.52). Genotype LTA 252 GG showed a significant increase by 22 % in SLE patients compared to 6 % in the control group (p = 0.001; OR 4.42; 95 % CI 1.71-11.44), and the frequency of the G allele of the LTA was significantly higher in the SLE patients (38 %) than in the control subjects (21 %) (p < 0.001; OR 2.31; 95 % CI 1.48-3.6). Genotype (AA+GA) of TNF was significantly associated with clinical manifestations as malar rash, arthritis, oral ulcers, serositis and systemic lupus erythematosus disease activity index. Genotype (GG+GA) of LTA was significantly associated with arthritis. These results suggest that TNF and LTA genetic polymorphisms contribute to SLE susceptibility in the Egyptian population and are associated with disease characteristics. TNF-308 and LTA+252 polymorphic markers may be used for early diagnosis of SLE and early prediction of clinical manifestations, like arthritis.

Keywords: SLE; TNF; LTA; Arthritis and Sledai.

708. Bridging Defects in Chronic Spinal Cord Injury Using Peripheral Nerve Grafts Combined With A Chitosan-Laminin Scaffold and Enhancing Regeneration Through Them By Co-Transplantation With Bone-Marrow-Derived Mesenchymal Stem Cells: Case Series of 14 Patients

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J Spinal Cord Med, 37: 54-71 (2014) IF: 1.878

Objective: To investigate the effect of bridging defects in chronic spinal cord injury using peripheral nerve grafts combined with a chitosan-laminin scaffold and enhancing regeneration through them by co-transplantation with bone-marrow-derived mesenchymal stem cells.

Methods: In 14 patients with chronic paraplegia caused by spinal cord injury, cord defects were grafted and stem cells injected into the whole construct and contained using a chitosan-laminin paste. Patients were evaluated using the International Standards for Classification of Spinal Cord Injuries.

Results: Chitosan disintegration leading to post-operative seroma formation was a complication. Motor level improved four levels in 2 cases and two levels in 12 cases. Sensory-level improved six levels in two cases, five levels in five cases, four levels in three cases, and three levels in four cases. A four-level neurological improvement was recorded in 2 cases and a two-level neurological improvement occurred in 12 cases. The American Spinal Impairment Association (ASIA) impairment scale improved from A to C in 12 cases and from A to B in 2 cases. Although motor power improvement was recorded in the abdominal muscles (2 grades), hip flexors (3 grades), hip adductors (3 grades), knee extensors (2-3 grades), ankle dorsiflexors (1-2 grades), long toe extensors (1-2 grades), and plantar flexors (0-2 grades), this improvement was too low to enable them to stand erect and hold their knees extended while walking unaided.

Conclusion: Mesenchymal stem cell-derived neural stem cell-like cell transplantation enhances recovery in chronic spinal cord injuries with defects bridged by sural nerve grafts combined with a chitosan-laminin scaffold.

Keywords: Nerve Grafting; Neurorecovery; Paraplegia; Spinal Cord Injuries; Stem Cell Transplantation.

709. Vitamin D and IL28B Genotyping as Predictors for Antiviral Therapy: A Retrospective Study in Egyptian HCV Genotype 4a

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Tropical Journal of Pharmaceutic Al Research, 13 (10): 1725-1732 (2014) IF: 0.495

Purpose: To evaluate the role of pre-treatment vitamin D serum level and interleukin28B (IL28B) (rs 12979860) polymorphism in chronic hepatitis C (CHC) genotype 4a patients treated with pegylated interferon a2-A and ribavirin (peg IFN+RBV) as predictors of response.

Methods: A retrospective study of clinical and pathological data and stored blood samples of 150 naïve chronic hepatitis C (CHC) genotype 4a patients, treated with pegylated interferon and ribavirin for 48 weeks. Follow-up to detect sustained virological response (SVR) was carried out. Based on SVR, two groups were studied; group 1 consisted of 75 responder patients to pegylated IFN + RBV therapy while group 2 comprised of 75 non-responder patients to standard hepatitis C virus (HCV) therapy. Vitamin D serum levels were assessed using Enzyme Linked Immunoassay (ELISA), quantitative reverse transcriptase- polymerase chain reaction (qRT-PCR for HCV RNA), and IL28B gene polymorphism by Restriction Fragment Length Polymorphism Polymerase Chain Reaction (RFLP-PCR).

Results: Pretreatment vitamin D level was significantly higher in group 1 than in group 2 ($p < 0.001$). The sensitivity and specificity of vitamin D level for prediction of SVR at a cutoff value of 29.75 ng/ml were 100 and 96 %, respectively, with area under the curve (AUC) of 0.995 ($p < 0.001$). A significant difference was detected between baseline vitamin D level for early versus advanced fibrosis stage ($p = 0.01$) in group 1.

Conclusion: Pretreatment vitamin D serum level (at a cutoff value of 29.75 ng/ml), IL28B gene polymorphism and quantitative HCV RNA are independent trait predictors of SVR.

Keywords: Vitamin D; Interleukin 28B; Chronic Hepatitis C; Sustained Virological Response (SVR); Antiviral; Genotyping.

Dept. of Medical BioChemistry

710. The Role of Bone Marrow Derived-Mesenchymal Stem Cells in Attenuation of Kidney Function in Rats With Diabetic Nephropathy

Abdel Aziz MT, Wassef MA, Ahmed HH, Rashed L, Mahfouz S, Aly MI, Hussein RE and Abdelaziz M.

Diabetology & Metabolic Syndrome, 1758-5996: 34-44 (2014) IF: 2.5

Background: Stem cell therapy holds a great promise for the repair of injured tissues and organs, including the kidney. We studied the effect of mesenchymal stem cells (MSC) on experimental diabetic nephropathy (DN) in rats and the possible paracrine signals that mediate their action.

Materials and Methods: Rats were divided into controls, DN rats, DN rats receiving MSCs. MSCs were given in a dose of (106cells) by intravenous injection. After 4 weeks, 24 h urinary albumin, serum urea and creatinine concentrations, transforming growth factor β (TGF β), tumor necrosis factor α (TNF α), B-cell lymphoma 2 (bcl2) and Bax gene expression and vascular endothelial growth factor (VEGF) were assessed. Histopathology staining was performed.

Results: MSC therapy significantly improved 24 h urinary albumin, serum urea and creatinine concentrations, increased angiogenic growth factor VEGF, and anti-apoptotic protein bcl2 while decreased the pro-inflammatory TNF- α , fibrogenic growth factor TGF β , and pro-apoptotic protein Bax. The histopathology examination showed patchy areas of minimal necrosis and degeneration in renal tubules.

Keywords: Stem Cells Therapy, Mesenchymal Stem Cells, Diabetic Nephropathy.

Dept. of Neurology

711. Global, Regional, and National Incidence and Mortality for HIV, Tuberculosis, and Malaria During 1990-2013: A Systematic Analysis for the Global Burden of Disease Study 2013

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Lancet, 384: 1005-1070 (2014) IF: 39.207

Background: The Millennium Declaration in 2000 brought special global attention to HIV, tuberculosis, and malaria through the formulation of Millennium Development Goal (MDG) 6. The Global Burden of Disease 2013 study provides a consistent and comprehensive approach to disease estimation for between 1990 and 2013, and an opportunity to assess whether accelerated progress has occurred since the Millennium Declaration.

Methods: To estimate incidence and mortality for HIV, we used the UNAIDS Spectrum model appropriately modified based on a systematic review of available studies of mortality with and without antiretroviral therapy (ART). For concentrated epidemics, we calibrated Spectrum models to fit vital registration data corrected for misclassification of HIV deaths. In generalised epidemics, we minimised a loss function to select epidemic

curves most consistent with prevalence data and demographic data for all-cause mortality. We analysed counterfactual scenarios for HIV to assess years of life saved through prevention of mother-to-child transmission (PMTCT) and ART. For tuberculosis, we analysed vital registration and verbal autopsy data to estimate mortality using cause of death ensemble modelling. We analysed data for corrected case-notifications, expert opinions on the case-detection rate, prevalence surveys, and estimated cause-specific mortality using Bayesian meta-regression to generate consistent trends in all parameters. We analysed malaria mortality and incidence using an updated cause of death database, a systematic analysis of verbal autopsy validation studies for malaria, and recent studies (2010–13) of incidence, drug resistance, and coverage of insecticide-treated bednets.

Findings: Globally in 2013, there were 1.8 million new HIV infections (95% uncertainty interval 1.7 million to 2.1 million), 29.2 million prevalent HIV cases (28.1 to 31.7), and 1.3 million HIV deaths (1.3 to 1.5). At the peak of the epidemic in 2005, HIV caused 1.7 million deaths (1.6 million to 1.9 million). Concentrated epidemics in Latin America and eastern Europe are substantially smaller than previously estimated.

Through interventions including PMTCT and ART, 19.1 million life-years (16.6 million to 21.5 million) have been saved, 70.3% (65.4 to 76.1) in developing countries. From 2000 to 2011, the ratio of development assistance for health for HIV to years of life saved through intervention was US\$4498 in developing countries. Including in HIV-positive individuals, all-form tuberculosis incidence was 7.5 million (7.4 million to 7.7 million), prevalence was 11.9 million (11.6 million to 12.2 million), and number of deaths was 1.4 million (1.3 million to 1.5 million) in 2013. In the same year and in only individuals who were HIV-negative, all-form tuberculosis incidence was 7.1 million (6.9 million to 7.3 million), prevalence was 11.2 million (10.8 million to 11.6 million), and number of deaths was 1.3 million (1.2 million to 1.4 million).

Annualised rates of change (ARC) for incidence, prevalence, and death became negative after 2000. Tuberculosis in HIV-negative individuals disproportionately occurs in men and boys (versus women and girls); 64.0% of cases (63.6 to 64.3) and 64.7% of deaths (60.8 to 70.3). Globally, malaria cases and deaths grew rapidly from 1990 reaching a peak of 232 million cases (143 million to 387 million) in 2003 and 1.2 million deaths (1.1 million to 1.4 million) in 2004. Since 2004, child deaths from malaria in sub-Saharan Africa have decreased by 31.5% (15.7 to 44.1). Outside of Africa, malaria mortality has been steadily decreasing since 1990.

Interpretation: Our estimates of the number of people living with HIV are 18.7% smaller than UNAIDS's estimates in 2012. The number of people living with malaria is larger than estimated by WHO. Incidence rates for HIV, tuberculosis, and malaria have all decreased since 2000. At the global level, upward trends for malaria and HIV deaths have been reversed and declines in tuberculosis deaths have accelerated. 101 countries (74 of which are developing) still have increasing HIV incidence. Substantial progress since the Millennium Declaration is an encouraging sign of the effect of global action.

Keywords: Incidence HIV; Tuberculosis; Malaria; Systematic analysis.

712. Global, Regional, and National Levels and Causes of Maternal Mortality During 1990–2013: A Systematic Analysis for the Global Burden of Disease Study 2013

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Lancet, 384: 980–1004 (2014) IF: 39.207

Background: The fifth Millennium Development Goal (MDG 5) established the goal of a 75% reduction in the maternal mortality ratio (MMR; number of maternal deaths per 100000 livebirths) between 1990 and 2015. We aimed to measure levels and track trends in maternal mortality, the key causes contributing to maternal death, and timing of maternal death with respect to delivery.

Methods: We used robust statistical methods including the Cause of Death Ensemble model (CODEm) to analyse a database of data for 7065 site-years and estimate the number of maternal deaths from all causes in 188 countries between 1990 and 2013. We estimated the number of pregnancy-related deaths caused by HIV on the basis of a systematic review of the relative risk of dying during pregnancy for HIV-positive women compared with HIV-negative women. We also estimated the fraction of these deaths aggravated by pregnancy on the basis of a systematic review. To estimate the numbers of maternal deaths due to nine different causes, we identified 61 sources from a systematic review and 943 site-years of vital registration data. We also did a systematic review of reports about the timing of maternal death, identifying 142 sources to use in our analysis. We developed estimates for each country for 1990–2013 using Bayesian meta-regression. We estimated 95% uncertainty intervals (UIs) for all values.

Findings: 292 982 (95% UI 261 017–327 792) maternal deaths occurred in 2013, compared with 370 344 (343 483–407 574) in 1990. The global annual rate of change in the MMR was 0.3% (–1.1 to 0.6) from 1990 to 2003, and –2.7% (–3.9 to –1.5) from 2003 to 2013, with evidence of continued acceleration. MMRs reduced consistently in south, east, and southeast Asia between 1990 and 2013, but maternal deaths increased in much of sub-Saharan Africa during the 1990s. 2070 (1290–2866) maternal deaths were related to HIV in 2013, 0.4% (0.2–0.6) of the global total. MMR was highest in the oldest age groups in both 1990 and 2013. In 2013, most deaths occurred intrapartum or postpartum. Causes varied by region and between 1990 and 2013. We recorded substantial variation in the MMR by country in 2013, from 956.8 (685.1–1262.8) in South Sudan to 2.4 (1.6–3.6) in Iceland.

Interpretation: Global rates of change suggest that only 16 countries will achieve the MDG 5 target by 2015. Accelerated reductions since the Millennium Declaration in 2000 coincide with increased development assistance for maternal, newborn, and child health. Setting of targets and associated interventions for after 2015 will need careful consideration of regions that are making slow progress, such as west and central Africa.

Keywords: Maternal mortality; Systematic analysis.

713. Burden of Stroke in Egypt: Current Status and Opportunities

Foad Abd-Allah and Ramez Reda Moustafa

International Journal of Stroke, 9: 1105–1108 (2014) IF: 4.029

Middle East and North Africa (MENA) countries have a diversity of populations with similar life style, dietary habits, and vascular risk factors that may influence stroke risk, prevalence, types, and disease burden. Egypt is the most populated nation in the Middle East with an estimated 85.5 million people. In Egypt, according to recent estimates, the overall prevalence rate of stroke is high with a crude prevalence rate of 963/100.000 inhabitants. In spite of disease burden, yet there is a huge evidence practice gap. The recommended treatments for ischemic stroke that are guideline include systematic supportive care in a stroke unit or stroke center is still deficient. In addition, the frequency of thrombolysis in Egypt is very low for many reasons; the major one is that the health insurance system is not covering thrombolysis therapy in nonprivate sectors so patients must cover the costs using their own personal savings; otherwise, they will not receive treatment. Another important factor is the pronounced delay in prehospital and in hospital management of acute stroke. Improvement of stroke care in Egypt should be achieved through multi and interdisciplinary approach including public awareness, physicians' education, and synergistic approach to stroke care with Emergency Medical System.

Keywords: Egypt; Middle East; WHO; Burden Of Stroke; Opportunities; Stroke Facilities.

714. Prevalence of Intracranial Atherosclerosis Among Patients With Coronary Artery Disease: A 1-Year Hospital-Based Study

Abd-Allah F, Kassem HH, Hashad A, Shamloul RM and Zaki A.

European Neurology, 71: 326-330 (2014) IF: 1.362

Background: There are limited data on the prevalence of intracranial atherosclerotic disease (ICAD) in patients with coronary artery disease (CAD) worldwide and especially among Egyptians. The purpose of the present study was to determine the prevalence and correlates of ICAD in patients with CAD.

Methods: From January 1, 2012 to January 1, 2013, we recruited 118 consecutive patients who had ischemic heart disease. All patients were assessed for vascular risk factors and the existence of stroke or transient ischemic attack (TIA) and were evaluated by extracranial and transcranial color-coded sonography. All patients underwent coronary angiography. Clinical, echocardiographic and angiographic variables were tested by univariate and multivariate analysis.

Results: Out of 118 consecutive patients with CAD, intracranial disease was detected in 14 patients (11.9%). Eight patients (6.8%) had stenosis >50%, while 6 patients (5.1%) had stenosis <50%. The univariate analysis showed that the strongest variables associated with ICAD were the presence of recent or old stroke or TIA, followed by moderate or severe extracranial stenosis, and multivessel or left main CAD.

Conclusion: We observed low prevalence (6.8%) of high-grade ICAD among Egyptian patients with CAD. Multivessel or left main CAD and moderate-to-severe extracranial carotid stenosis were the strongest predictors for the existence of ICAD among CAD patients.

Keywords: Intracranial atherosclerotic disease; Coronary artery disease; Transcranial color-coded sonography.

Dept. of NeuroSurgery

715. Free-Hand Placement of Occipital Condyle Screws: A Cadaveric Study

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European Spine Journal, 23: 2182-2188 (2014) IF: 2.473

Purpose: Cranio-vertebral junction fixation is challenging due to the complex topographical anatomy and the presence of important anatomical structures. There are several limitations to the traditional occipital squama fixation methods. The purpose of this work is to assess the safety and feasibility of a new optimum trajectory of occipital condyle (OC) screws for occipitocervical fixation via a free-hand technique.

Methods: Eight different parameters of OC morphology were studied in fifty adult skulls. Free-hand placement of OC screws was performed in five cadavers using 3.5-mm titanium polyaxial screws and a 3-mm rod construct (C0-C1-C2). Postoperative computed tomography was performed to determine the success of the screw placement and their angulation, length and effect on hypoglossal canal volume.

Results: The average length, width and height of the OC were 24.2 ± 3.6 , 14.2 ± 1.9 , and 10.7 ± 2 mm, respectively. The average medio-lateral, hypoglossal canal and atlanto-occipital joint angles were 38.8° medially $\pm 5^\circ$, 7.4° rostrally $\pm 1.9^\circ$ and 23.4° caudally $\pm 3.5^\circ$, respectively. The ten screws were successfully inserted using a free-hand technique with bicortical purchase. There was no vertebral artery injury or breach of the hypoglossal canal in any specimen. The average screw length was 22.2 ± 3.9 mm. The average medio-lateral angle was 30° medially $\pm 6.7^\circ$. The average cranio-caudal angle was 4° caudally $\pm 6.2^\circ$.

Conclusions: The free-hand technique of OC screw placement is a safe and viable option for occipitocervical fixation and may be a preferred alternative in selected cases. However, further studies are needed to compare its safety and reliability to other more established methods.

Keywords: Cranio-vertebral Junction; Occipitocervical fixation; Occipital condyle screws; Optimum trajectory.

716. Endoscopic Treatment of Intraparenchymal Arachnoid Cysts in Children

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J Neurosurg Pediatrics, 14: 501-507 (2014) IF: 1.37

Object: Arachnoid cysts account for 1% of all intracranial lesions. They usually occur in the subarachnoid space of the major cerebral fissures and arachnoid cisterns. They are very rarely located within the brain parenchyma devoid of communication with the subarachnoid space. The author of this study evaluated the role of endoscopy in the treatment of intraparenchymal arachnoid cysts (IPACs), which have a paraventricular location noncontiguous with the basal cisterns.

Methods: The records of all patients who had undergone surgery performed by one neurosurgeon between March 2004 and October 2011 were retrospectively reviewed to find cases of arachnoid cysts with a paraventricular location noncontiguous with the basal cisterns that were treated with a purely endoscopic cystoventriculostomy. Data were collected, summarized, and analyzed as regards improvement in symptomatology, decrease in cyst size, improvement in hydrocephalus, incidence of complications, surgical failure, and incidence of recurrence.

Results: Twelve pediatric patients with symptomatic IPACs were included in this study. The group included 7 boys and 5 girls with a mean age of 5.2 years. All of the patients had undergone endoscopic cystoventriculostomy. In addition, endoscopic third ventriculostomy had been performed during the same operative session in 3 patients who had associated hydrocephalus. Significant clinical improvement occurred in 10 patients (83.3%). Postoperative imaging showed a reduction in the cyst size in 9 patients (75%), whereas the cyst size was unchanged in the remaining 3 patients (25%). A reduction in ventricle size occurred in 2 (66.7%) of the 3 patients who had hydrocephalus. A postoperative subdural hygroma occurred in 2 patients (16.7%) and required the insertion of a subduroperitoneal shunt in 1 patient. During the follow-up period (mean 42.5 months), 1 patient had a recurrence and required a repeat endoscopic procedure.

Conclusions: Endoscopic cystoventriculostomy is recommended in the treatment of symptomatic IPACs. It maintains the basic strategy of cyst fenestration into the lateral ventricle without either the invasiveness of open craniotomy or the implantation of shunt systems. The procedure is simple, effective, and minimally invasive. It saves operative and recovery times and is associated with low morbidity and mortality rates.

Keywords: Eeg = Electroencephalography; Etv = Endoscopic Third Ventriculostomy; Ipac = Intraparenchymal Arachnoid Cyst; Arachnoid Cyst; Congenital; Cystoventriculostomy; Endoscopy; Intraparenchymal

Dept. of Obstetrics and Gynecology

717. Gonadotropin-Releasing Hormone Agonist Versus HCG for Oocyte Triggering in Antagonist-Assisted Reproductive Technology

Youssef MAFM, Van der Veen F, Al-Inany HG, Mochtar MH, Griesinger G, Nagi Mohesen M, Aboulfoutouh I and van Wely M

Cochrane Database Syst Rev, 8: 1-59 (2014) IF: 5.939

Objectives: To evaluate the effectiveness and safety of GnRH agonists in comparison with HCG for triggering final oocyte maturation in IVF and ICSI for women undergoing COH in a GnRH antagonist protocol.

Search Methods: We searched databases including the Menstrual Disorders and Subfertility Group (MDSG) Specialised Register of Controlled Trials, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, PsycINFO, the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and trial registers for published and unpublished articles (in any language) on randomised controlled trials (RCTs) of gonadotropin-releasing hormone agonists versus HCG for oocyte triggering in GnRH antagonist IVF/ICSI treatment cycles. The search is current to 8 September 2014.

Selection Criteria: RCTs that compared the clinical outcomes of GnRH agonist triggers versus HCG for final oocyte maturation triggering in women undergoing GnRH antagonist IVF/ICSI treatment cycles were included.

Data Collection and Analysis: Two or more review authors independently selected studies, extracted data and assessed study risk of bias. Treatment effects were summarised using a fixed-effect model, and subgroup analyses were conducted to explore potential sources of heterogeneity. Treatment effects were expressed as mean differences (MDs) for continuous outcomes and as odds ratios (ORs) for dichotomous outcomes, together with 95% confidence intervals (CIs). Primary outcomes were live birth

and rate of ovarian hyperstimulation syndrome (OHSS) per women randomised. Grades of Recommendation, Assessment, Development and Evaluation (GRADE) methods were used to assess the quality of the evidence for each comparison.

Main Results: We included 17 RCTs (n = 1847), of which 13 studies assessed fresh autologous cycles and four studies assessed donor-recipient cycles. In fresh autologous cycles, GnRH agonists were associated with a lower live birth rate than was seen with HCG (OR 0.47, 95% CI 0.31 to 0.70; five RCTs, 532 women, I(2) = 56%, moderate-quality evidence). This suggests that for a woman with a 31% chance of achieving live birth with the use of HCG, the chance of a live birth with the use of a GnRH agonist would be between 12% and 24%. In women undergoing fresh autologous cycles, GnRH agonists were associated with a lower incidence of mild, moderate or severe OHSS than was HCG (OR 0.15, 95% CI 0.05 to 0.47; eight RCTs, 989 women, I = 42%, moderate-quality evidence). This suggests that for a woman with a 5% risk of mild, moderate or severe OHSS with the use of HCG, the risk of OHSS with the use of a GnRH agonist would be between nil and 2%. In women undergoing fresh autologous cycles, GnRH agonists were associated with a lower ongoing pregnancy rate than was seen with HCG (OR 0.70, 95% CI 0.54 to 0.91; 11 studies, 1198 women, I(2) = 59%, low-quality evidence) and a higher early miscarriage rate (OR 1.74, 95% CI 1.10 to 2.75; 11 RCTs, 1198 women, I = 1%, moderate-quality evidence). However, the effect was dependent on the type of luteal phase support provided (with or without luteinising hormone (LH) activity); the higher rate of pregnancies in the HCG group applied only to the group that received luteal phase support without LH activity (OR 0.36, 95% CI 0.21 to 0.62; I(2) = 73%, five RCTs, 370 women). No evidence was found of a difference between groups in risk of multiple pregnancy (OR 3.00, 95% CI 0.30 to 30.47; two RCTs, 62 women, I(2) = 0%, low-quality evidence). In women with donor-recipient cycles, no evidence suggested a difference between groups in live birth rate (OR 0.92, 95% CI 0.53 to 1.61; one RCT, 212 women) or ongoing pregnancy rate (OR 0.88, 95% CI 0.58 to 1.32; three RCTs, 372 women, I = 0%). We found evidence of a lower incidence of OHSS in the GnRH agonist group than in the HCG group (OR 0.05, 95% CI 0.01 to 0.28; three RCTs, 374 women, I = 0%). The main limitation in the quality of the evidence was risk of bias associated with poor reporting of methods in the included studies.

Authors' Conclusions: Final oocyte maturation triggering with GnRH agonist instead of HCG in fresh autologous GnRH antagonist IVF/ICSI treatment cycles prevents OHSS to the detriment of the live birth rate. In donor-recipient cycles, use of GnRH agonists instead of HCG resulted in a lower incidence of OHSS, with no evidence of a difference in live birth rate. Evidence suggests that GnRH agonist as a final oocyte maturation trigger in fresh autologous cycles is associated with a lower live birth rate, a lower ongoing pregnancy rate (pregnancy beyond 12 weeks) and a higher rate of early miscarriage (less than 12 weeks). GnRH agonist as an oocyte maturation trigger could be useful for women who choose to avoid fresh transfers (for whatever reason), women who donate oocytes to recipients or women who wish to freeze their eggs for later use in the context of fertility preservation.

Keywords: Oocyte Trigger; Hcg; Ivf; Gnrh Antagonist.

718. Post-Embryo Transfer Interventions for Assisted Reproduction Technology Cycles

Abou-Setta AM, Peters LR, D'Angelo A, Sallam HN, Hart RJ and Al-Inany HG

Cochrane Database Syst Rev, 8: 1-32 (2014) IF: 5.939

Background: In women undergoing in vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI), embryos transferred into the uterine cavity can be expelled due to many factors including uterine peristalsis and contractions, low site of deposition and negative pressure generated when removing the transfer catheter. Techniques to reduce the risk of embryo loss following embryo transfer (ET) have been described but are not standard in all centres conducting ET.

Objectives: To evaluate the efficacy of interventions used to prevent post-transfer embryo expulsion in women undergoing IVF and ICSI.

Search Methods: We searched the Menstrual Disorders and Subfertility Group Specialised Register of controlled trials to June 2014 and PubMed, MEDLINE, EMBASE, CENTRAL, PsycINFO, CINAHL, World Health Organization ICTRP, and trial registers from inception to June 2014, with no language restrictions. Additionally, we handsearched reference lists of relevant articles, and ESHRE and ASRM conference abstracts.

Selection Criteria: We included randomised controlled trials (RCTs) of interventions used to prevent post-transfer embryo expulsion in women undergoing IVF and ICSI. Two review authors independently screened titles and abstracts and reviewed the full-texts of all potentially eligible citations to determine whether they met our inclusion criteria. Disagreements were resolved by consensus.

Data Collection and Analysis: Two review authors independently extracted data and assessed the risk of bias of included trials using standardised, piloted data extraction forms. Data were extracted to allow intention-to-treat analyses. Disagreements were resolved by consensus. The overall quality of the evidence was rated using GRADE methods.

Main Results: We included four RCTs (n = 1392 women) which administered the following interventions: bed rest (two trials), fibrin sealant (one trial), and mechanical closure of the cervix (one trial).

Our primary outcome, live birth rate, was not reported in any of the included trials; nor were the data available from the corresponding authors. For the ongoing pregnancy rate, two trials comparing more bed rest with less bed rest showed no evidence of a difference between groups (odds ratio (OR) 0.88; 95% confidence interval (CI) 0.60 to 1.31, 542 women, I(2) = 0%, low quality evidence).

Secondary outcomes were sporadically reported with the exception of the clinical pregnancy rate, which was reported in all of the included trials. There was no evidence of a difference in clinical pregnancy rate between more bed rest and less bed rest (OR 0.88; 95% CI 0.60 to 1.31, 542 women, I(2) = 0%, low quality evidence) or between fibrin sealant and usual care (OR 0.98; 95% CI 0.54 to 1.78, 211 women, very low quality evidence). However, mechanical closure of the cervix was associated with a higher clinical pregnancy rate than usual care (OR 1.92; 95% CI 1.40 to 2.63, very low quality evidence).

The quality of the evidence was rated as low or very low for all outcomes. The main limitations were failure to report live births, imprecision and risk of bias. Overall, the risk of bias of the included trials was high.

The use of a proper method of randomisation and allocation concealment was fairly well reported, while only one trial clearly reported blinding. There was no evidence that any of the interventions had an effect on adverse event rates but data were too few to reach any conclusions.

Authors' Conclusions: There is insufficient evidence to support any specific length of time for women to remain recumbent, if at all, following embryo transfer, nor is there sufficient evidence to recommend the use of fibrin sealants added to the embryo transfer fluid. There is very limited evidence to support the use of mechanical pressure to close the cervical canal following embryo transfer. Further well-designed and powered studies are required to determine the true effectiveness and safety of these interventions.

Keywords: Et; Ivf; Icsi; Rest.

719. Prevalence of Coagulation Factor XIII and Plasminogen Activator Inhibitor-1 Gene Polymorphisms Among Egyptian Women Suffering from Unexplained Primary Recurrent Miscarriage

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Journal of Reproductive Immunology, 103: 18-22 (2014) IF: 2.373

Recurrent miscarriage (RM) is an obstetric challenge. Polymorphisms of factor XIII (FXIII) and plasminogen activator inhibitor-1 (PAI-1) may cause an imbalance between coagulation and fibrinolysis that can end in RM. The aim of the work was to determine the prevalence of FXIII Val34Leu and PAI-1 4G/5G gene polymorphisms in Egyptian women presenting with unexplained primary first trimester RM. Genotyping of 120 unexplained primary first trimester RM patients and 130 healthy controls by polymerase chain reaction (PCR) amplification of target genes followed by the allele-specific restriction enzyme digestion (RFLP technique). Among the cases, 67.5% of individuals had wild-type FXIII; 21.7% were heterozygous and 10.8% were homozygous for the FXIII Val34Leu polymorphism. Among controls, the proportions were 89.2%, 8.5% and 2.3% respectively. In addition, comparison between the two groups regarding Leu and 4G allele frequencies showed statistically significant differences (P values = 0.0001 and 0.027 respectively). RM is more frequent in women with combined polymorphisms than in women with a single gene polymorphism (RR = 3.91; OR = 4.51; 95% CI = 1.79–11.38; P = 0.002). FXIII Val34Leu and PAI-1 4G/5G polymorphisms are prevalent in Egyptian women, with unexplained primary first trimester RM and combined polymorphisms statistically increasing the risk.

Keywords: Recurrent miscarriage; Polymorphism; Plasminogen activator inhibitor-1; Coagulation factor XIII.

720. A Prospective Randomized Clinical Trial Comparing Immediate Versus Delayed Removal of Urinary Catheter Following Elective Cesarean Section

Akmal El-Mazny, Mohamed El-Sharkawy and Amr Hassan

European Journal of Obstetrics & Gynecology and Reproductive Biology, 181: 111-114 (2014) IF: 1.627

Objective: To compare immediate and 12h postoperative removal of urinary catheter after elective cesarean section.

Study Design: In a prospective clinical trial at a university teaching hospital, 300 eligible women admitted for primary or repeat elective cesarean section were randomized into two equal groups. In group A, the catheter was removed immediately after the procedure; whereas in group B, the catheter was removed 12h postoperatively.

Results: The incidence of postoperative significant bacteruria ($p=0.020$), dysuria ($p=0.030$), burning on micturition ($p=0.016$), urinary frequency ($p=0.031$), and urgency ($p=0.011$) were significantly lower in group A compared with group B. The mean postoperative ambulation time ($p<0.001$), time till the first voiding ($p<0.001$), and length of hospital stay ($p<0.001$) were also significantly shorter in group A. There were no significant differences between the two groups in the incidence of urinary retention necessitating recatheterization ($p=0.371$).

Conclusion: Immediate removal of urinary catheter after elective cesarean section is associated with lower risk of urinary infection and earlier postoperative ambulation.

Keywords: Cesarean section; Urinary catheter; Urinary infection.

721. Does Flushing the Endometrial Cavity With Follicular Fluid After Oocyte Retrieval Affect Pregnancy Rates in Subfertile Women Undergoing Intracytoplasmic Sperm Injection? A Randomized Controlled Trial

Hashish NM, Badway HS, Abdelmoty HI, Mowafy A and Youssef MA

The European Journal of Obstetrics and Gynecology And Reproductive Biology, (176): 153-157 (2014) IF: 1.627

Objective: Follicular fluid of mature oocytes is rich in growth factors and cytokines that may exert paracrine and autocrine effects on implantation. The aim of this study was to investigate if flushing the endometrial cavity with follicular fluid after oocyte retrieval improved pregnancy rates in subfertile women undergoing intracytoplasmic sperm injection (ICSI).

Study Design: One hundred subfertile women undergoing ICSI between April 2012 and September 2012 at the centre for reproductive medicine, Cairo University, Egypt were enrolled in this open label, parallel randomized controlled study. Patients were randomized into two groups at the start of treatment using a computer-generated programme and sealed opaque envelopes: the follicular fluid group ($n=50$) and the control group ($n=50$). Inclusion criteria were: age 20-38 years; basal follicle-stimulating hormone $<10\text{mIU/ml}$; body mass index $<35\text{kg/m}^2$; and oestradiol $>1000\text{pg/ml}$ and $<4000\text{pg/ml}$ on the day of human chorionic gonadotrophin administration. Exclusion criteria were: evidence of endometriosis; uterine myoma; hydrosalpinges; endocrinological disorders; history of implantation failure in previous in-vitro fertilization/ICSI cycles; and severe male factor infertility.

Results: Clinical pregnancy and implantation rates were higher in the follicular fluid group compared with the control group [354% (17/48) vs 319% (15/47); $p=0.718$] and (18.6% vs 11.3%; $p=0.153$), respectively. However, the difference was not statistically significant.

Conclusion: Flushing the endometrial cavity with follicular fluid after oocyte retrieval neither improved nor adversely affected clinical pregnancy and implantation rates in subfertile women undergoing ICSI.

Keywords: Follicular fluid; ICSI; Implantation rate.

722. A Randomized Controlled Trial of Uterine Exteriorization Versus in Situ Repair of the Uterine Incision During Cesarean Delivery

Waleed El-Khayat, Mohamed Elsharkawi and Amr Hassan

International Journal of Gynecology and Obstetrics, 127: 163-166 (2014) IF: 1.563

Objective: To compare extra-abdominal repair of the uterine incision at cesarean delivery with in situ repair.

Methods: The present study was a double-blind randomized controlled trial conducted at a university hospital in Egypt during 2012–2013, and included women with an indication for cesarean delivery. Extra-abdominal repair was used in group 1 ($n= 500$) and in situ repair in group 2 ($n= 500$). The primary outcome measure was the surgery duration.

Results: Surgery duration was significantly longer in group 1 than group 2 (49.9 ± 2.3 minutes vs 39.9 ± 1.8 minutes; $P < 0.001$). More patients in group 1 than in group 2 had postoperative moderate-to-severe pain (165 [33.0%] vs 115 [23.0%]; $P = 0.001$) and needed additional postoperative analgesia (100 [20.0%] vs 50 [10.0%]; $P < 0.001$). Moreover, mean time to bowel movement was longer in group 1 than in group 2 (17.0 ± 2.7 hours vs 14.0 ± 1.9 hours; $P < 0.001$).

Conclusion: In situ uterine closure is more advantageous than extra-abdominal repair in terms of surgery duration, postoperative pain and need for additional analgesia, and return of bowel movement.

Keywords: Cesarean delivery; Exteriorization; In situ repair; Uterine repair site.

723. A Review of the Contemporary Evidence on Rescue Cervical Cerclage

Hatem Abu Hashim, Hesham Al-Inany and Zaid Kilani

International Journal of Gynecology & Obstetrics, 124: 198-203 (2014) IF: 1.563

Background: Rescue cervical cerclage (RCC) is essentially a salvage procedure to prolong pregnancy in women with advanced cervical changes and prolapsed membranes in the second trimester. However, its effectiveness and safety remain controversial.

Objectives: To provide a comprehensive review of the contemporary evidence on RCC and evaluate which treatment modalities can be offered to pregnant women based on the best available evidence.

Search Strategy: A PubMed search of published studies on RCC and perinatal outcome was conducted using defined keywords.

Selection Criteria: Clinical studies were included with priority for level I evidence (randomized controlled trials [RCTs]) followed by other evidence levels.

Data Collection and Analysis: Abstracts of 141 articles were screened and 40 articles were selected.

Main Results: Evidence from retrospective and nonrandomized prospective trials shows a benefit of RCC. It may prolong pregnancy by an average of 4-5 weeks, with a 2-fold reduction in the chance of preterm birth before 34 weeks. A higher chance of failure is expected if cervical dilatation exceeds 4 cm or if membranes are bulging into the vagina.

Conclusions: The decision for an RCC should be individualized after comprehensive counseling by a senior obstetrician. Further research in the form of robust RCTs is recommended.

Keywords: Emergency Cervical Cerclage; Emergent Cerclage; Perinatal Outcome; Rescue Cerclage.

724. Reproductive Health and HIV Awareness Among Newly Married Egyptian Couples Without Formal Education

Saleh WF, Gamaleldin SF, Abdelmoty HI, Raslan AN, Fouda UM, Mohesen MN and Youssef MA

International Journal Of Gynecology & Obstetrics, 126 (3): 209-212 (2014) IF: 1.563

Objective: To assess awareness of several reproductive health and HIV issues and to determine the sources of reproductive health knowledge.

Methods: A cross-sectional survey of 150 randomly recruited, newly married couples without formal education attending gynecology or andrology outpatient clinics in Cairo, Egypt, was conducted from January 2012 to January 2013. Participants were interviewed separately and asked to respond to a semi-structured questionnaire on reproductive health and HIV awareness.

Results: Most participants had not received premarital counseling or undergone premarital testing. Awareness about HIV was relatively high: 117 (78.0%) women and 128 (85.3%) men had heard of HIV and had some awareness of the modes of HIV transmission. Only 24 (16.0%) women had ever used a condom compared with 36 (24.0%) men. Only two men out of the 150 couples questioned were aware of the free HIV hotline. Television and friends were the main sources of reproductive health knowledge.

Conclusion: Routine premarital counseling and testing by reproductive health, gynecology, and andrology specialists need to be enforced. Mass media is an essential source of knowledge about HIV and reproductive health. Premarital, reproductive health, and HIV education programs need to be improved.

Keywords: Awareness; Egypt; HIV; Newly married; Premarital counseling; Premarital testing; Reproductive health.

725. Helicobacter Pylori Seropositivity in Patients With Hyperemesis Gravidarum

Mona M. Shaban, Hisham O. Kandil and Arwa H. Elshafei

The American Journal of the Medical Sciences, 347(2): 101-105 (2014) IF: 1.515

Background: Nausea and vomiting during pregnancy are the most common conditions affecting pregnancy, occurring in about 80% of all pregnancies and always disappearing on the 16th to 18th weeks of gestation. This may be mild and it does not affect the general condition of the patient (the condition is called emesis gravidarum), or it may be severe enough to affect the patient physically and psychologically, causing intractable vomiting, electrolyte imbalance, weight loss >5%, impairment of liver and kidney functions and dehydration. *Helicobacter pylori* is one of the most common bacterium affecting humans. It is a gram-negative helix-shaped microaerophilic bacterium transmitted by the oro-oral or feco-oral route. It is more prevalent in developing countries and affects young children. Acute infection manifests as acute gastritis and stomach pain, whereas chronic infection causes chronic gastritis and peptic ulcer, 2% of which may develop into stomach cancer. The authors tried to investigate the association between *H pylori* infection and hyperemesis gravidarum.

Methods: Fifty patients with hyperemesis gravidarum and 50 patients with normal pregnancy were included in the study. *H pylori* infection was determined using a 1-step *H pylori* test device (serum/plasma), which is a qualitative membrane-based immunoassay.

Results: Regarding maternal age, gestational age and socioeconomic status, there is no statistical difference between both groups. There is a marked statistical difference between both groups in terms of *Helicobacter pylori* seropositivity and frequency of vomiting.

Conclusions: There is a powerful correlation between *H pylori* and hyperemesis gravidarum.

Keywords: Hyperemesis gravidarum; *Helicobacter pylori*; Egyptian population.

726. Is Intracytoplasmic Sperm Injection (ICSI) Associated With Higher Incidence of Congenital Anomalies? A Single Center Prospective Controlled Study in Egypt

Yasmin Ahmed Bassiouny, Yomna Ali Bayoumi, Hisham Mohamed Gouda and Ayman Ahmed Hassan

The Journal of Maternal-Fetal & Neonatal Medicine, 27(3): 279-282 (2014) IF: 1.208

Objective: To compare the incidence of congenital anomalies by ultrasound in intracytoplasmic sperm injection (ICSI) pregnancies and in spontaneous pregnancies with correlation to the neonatal outcome.

Methods: This is a prospective comparative study carried out in Kasr Al Aini Hospital Cairo University from January 2010 to December 2012, comparing 739 pregnant women conceived through ICSI and 843 pregnant women conceived spontaneously as regard to incidence of congenital anomalies, multiple pregnancy, preterm labor, cesarean section and neonatal outcome.

Results: The number of anomalies diagnosed by antenatal ultrasound in ICSI group was 14 (1.62%) while in spontaneous group was 13 (1.51%). The number of anomalies detected by postnatal examination in ICSI group was 20 (2.31%) while in spontaneous group was 16 (1.86%) (Odds ratio [OR] 1.438; 95% confidence interval [CI] 0.739–2.796). ICSI group was associated with higher incidence of twins 12.7% ($p < 0.001$), preterm labor 3.8% ($p 0.022$), preterm premature rupture of membranes 4.6% ($p 0.001$), cesarean section 74.1% ($p < 0.001$) and neonatal deaths 10.4% ($p < 0.001$).

Conclusion: ICSI was associated with higher incidence of multiple pregnancy and cesarean section, with no difference in the incidence of congenital anomalies compared to spontaneous conception.

Keywords: Assisted reproduction; Congenital malformations; multiple pregnancies; Neonatal outcome; Rupture of membranes spontaneous conception.

727. Comparative Study Between Different Biomarkers for Early Prediction of Gestational Diabetes Mellitus

Ahmed Mohamed Maged, Ghada Abdel Fattah Moety, Walaa Ahmed Mostafa and Dalia Ahmed Hamed

J Matern Fetal Neonatal Med, 27(11): 1108-1112 (2014) IF: 1.208

Objective: To study various biomarkers in prediction of gestational diabetes mellitus (GDM).

Patients and methods: Prospective observational study included 400 pregnant women. Maternal serum sex hormone binding globulin (SHBG), high-sensitive C-reactive protein (hs-CRP), uric acid, creatinine and albumin were measured before 15 weeks of gestation. Patients were followed-up for development of GDM.

Results: A total of 269 women were eligible for analysis. GDM complicated 27 (10.03%) of pregnancies. Hs-CRP levels were significantly higher and SHBG levels were significantly lower among women who subsequently developed GDM compared with normoglycemics. Uric acid, albumin and creatinine levels were not significantly different between both groups. For prediction of GDM, hs-CRP at a cutoff value of 2.55 mg/l showed a sensitivity and a specificity of 89% and 55%, respectively. SHBG at a cutoff value of 211.5 nmol/l showed a sensitivity and a specificity of 85% and 37%, respectively. Low SHBG with high hs-CRP predicted GDM with a sensitivity and specificity of 74.07% and 75.62%, respectively with an overall accuracy of 75.46%.

Conclusion: Hs-CRP and SHBG are important early predictors of GDM. Adding SHBG to hs-CRP improves specificity and serves good overall accuracy. Uric acid, creatinine and albumin have no role in GDM prediction

Keywords: Albumin, C-Reactive Protein, Creatinine Gestational Diabetes Mellitus, Sex Hormonebinding Globulin, Uric Acid.

728. Fetal Middle Cerebral and Umbilical Artery Doppler After 40 Weeks Gestational Age

Ahmed M. Maged, Aly Abdelhafez, Walaa AI Mostafa and Wael Elsherbiny

J Matern Fetal Neonatal Med, 27(18): 1880-1885 (2014) IF: 1.208

Objective: To determine the value of fetal Doppler indices named middle cerebral artery (MCA)-PI, umbilical artery (UA)-PI and MCA-PI/UA-PI ratio, and amniotic fluid volume assessment in pregnancies 280–294 d and their correlation with the mode of delivery and perinatal outcome.

Study design: Prospective observational study conducted on 100 whose gestational age (GA) from 40 to 42 weeks. MCA and UA Doppler and MCA-PI/UA-PI ratio, amniotic fluid volume (AFV) were assessed. They were divided into two groups based on the presence or absence of adverse perinatal outcome.

Results: Women with adverse perinatal outcome showed lower MCA-PI (0.92 versus 1.29), MCA-PI:UA-PI ratio (1.04 versus 1.83), lower gestational age when assessed by ultrasound (37.82 versus 39.48 weeks), lower neonatal birth weight (2705 versus 3108 g), fetal biophysical profile (BPP) (4.55 versus 7.21) when compared to women with normal perinatal outcome. They also had higher cases with oligohydramnios (34 versus 5), and higher UA-PI (0.89 versus 0.72).

Conclusion: Women with adverse neonatal outcome had higher UA-PI and lower MCA-PI, MCA-PI:UA-PI ratio, GA (by US), AFV, BPP, estimated fetal weight, neonatal birth weight when compared to those with normal perinatal outcome. Women with adverse neonatal outcome had a higher rate of cesarean section mostly due to fetal distress and induced VD due to oligohydramnios compared to the normal outcome group.

Keywords: Amniotic Fluid Volume, Doppler Velocimetry Mode Of Delivery, Perinatal Outcome.

729. Measuring the Rate of Fetal Urine Production Using Three-Dimensional Ultrasound During Normal Pregnancy and Pregnancy-Associated Diabetes

Ahmed M. Maged, Abdelsamie Abdelmoneim, Wessam Said and Walaa A. I. Mostafa

J Matern Fetal Neonatal Med, 27(17): 1790-1794 (2014) IF: 1.208

Objective: To establish a nomogram of fetal urine production according to gestational age as a predictor for fetal well-being in normal and diabetic women.

Study design: Prospective observational study included 180 pregnant women classified into two groups: Group I (120 women) without any medical complications and Group II (60 women) with gestational diabetes mellitus (GDM). The fetal bladder is measured by the virtual organ computer-aided analysis VOCAL 3D ultrasound scanner.

Results: There was a significant positive correlation between gestational age and fetal urine production rate (UPR) (the mean UPR rate in normal pregnancy at 25, 30, 35, 40 weeks were 12.3, 14.38, 56.13 and 90.73 ml/h, respectively). There was no significant difference regarding UPR ml/h between women with normal pregnancy and those with controlled GDM ($p=0.9$). There was a statistically significant difference regarding UPR ml/h between women with normal pregnancy and those with uncontrolled GDM ($p=0.012$) and a statistically significant difference between women with controlled GDM and those with uncontrolled GDM ($p=0.03$).

Conclusion: Fetal UPR is considered to be more reliable as an assessment method for fetal well-being and shows significant increase in patients with uncontrolled gestational DM.

Keywords: 3D Ultrasound, Bladder Volume, Fetal Urineproduction, Gestational Diabetes Mellitus.

730. Assessment of Endometrial Receptivity Using Doppler Ultrasonography in Infertile Women Undergoing Intrauterine Insemination

Riad ON and Hak AA

Gynecological Endocrinology, 73: 1-4 (2014) IF: 1.136

Objective: The aim of this study was assessment of subendometrial blood flow with Doppler ultrasonography as an indicator of endometrial receptivity in stimulated cycles for intrauterine insemination (IUI).

Patients and Methods: This prospective study enrolled 90 women scheduled for IUI after ovarian stimulation randomly assigned to one of the three equal groups; group (C) received Clomiphene citrate, group (H) received HMG and group (CH) received Clomiphene citrate in addition to HMG. All participants had ultrasound folliculometry starting on day 9, followed by transvaginal Doppler study of the subendometrial blood flow and perifollicular blood flow on the day of detecting at least one follicle ≥ 18 mm. Resistivity index (RI) and pulsatility index (PI) of subendometrial and perifollicular flow were measured. Endometrial thickness was measured on day of hCG injection.

Results: Group (H) showed significantly higher frequency of subendometrial flow (80%) compared to the other two groups ($p=0.009$). In cases of positive subendometrial flow, the RI and PI were significantly lower in group (H) compared to the other two groups ($p=0.007$ and 0.012 , respectively). Endometrial

thickness was significantly lower in group (C) compared to group (H) ($p=0.001$) and group (CH) ($p=0.001$). Successful intrauterine implantation was documented in a total of 16 women (17.8%); the highest frequency was in group (H) (23.3%) and the lowest in group (C), however, the difference between the three groups was not significant ($p=0.372$). Subendometrial indices and perfollicular RI were significantly lower in cases of successful implantation, while endometrium was significantly thicker in these cases ($p=0.001$).

Conclusion: The presence of subendometrial flow is associated with successful IUI in women under stimulated cycles undergoing IUI. HMG seems a superior option for induction of ovulation regarding success of implantation.

Keywords: Endometrium, Ovulation Induction, Pregnancy, Uterus.

731. Role of Ultrasonographic Markers of Ovarian Reserve in Prediction of IVF and ICSI Outcome

Mona Mohamed Shaban and Ghada Abdel Fattah Abdel Moety
Gynecol Endocrinol, 30(4): 290-293 (2014) IF: 1.136

The aim of the study was to assess correlation of ultrasonographic markers of ovarian reserve and IVF/ICSI outcome. Two-hundred twelve IVF/ICSI patients were included. Upon pituitary suppression confirmation, antral follicle count (AFC), ovarian volume (OV), and ovarian stromal indices [vascularization index (VI), flow index (FI), and vascularization flow index (VFI)] were assessed by three-dimensional (3D) and power Doppler (PD) ultrasound and correlated with the number of mature oocytes retrieved. The number of mature oocytes retrieved correlated strongly with AFC ($r=0.832$, $p \leq 0.001$) and OV ($r=0.835$, $p \leq 0.001$), but weakly with VI ($r=0.166$, $p=0.016$), FI ($r=0.151$, $p=0.028$), and VFI ($r=0.14$, $p=0.041$). AFC and OV correlate strongly with the number of mature oocytes retrieved in IVF/ICSI cycles, whereas 3D PD indices of the ovarian stromal vascularity have a weak correlation.

Keywords: Antral follicle count; IVF/ICSI Outcome; Ovarian stromal vascularity; Ovarian volume; Power doppler.

732. Body Mass Index and Labour Outcome in Egyptian Women

M. M. Shaban, Y. A. Bassiouny, I. M. Elzahaby and A. A. Hassan
Journal of Obstetrics and Gynaecology, 34(3): 248-250 (2014) IF: 0.604

We conducted a cross-sectional descriptive study to evaluate the impact of body mass index (BMI) on maternal medical disorders, progress of labour, mode of delivery and neonatal outcome in Cairo University hospital between September 2012 and March 2013. A total of 574 parturients were divided into two groups: group A with a BMI < 30 and group B with a BMI $= 30$. A statistically significant difference was found in favour of group B, regarding medical disorders, especially gestational hypertension and pre-eclampsia ($p < 0.001$), caesarean deliveries ($p < 0.001$) and neonatal birth weight ($p = 0.001$). There was no difference regarding gestational age at delivery, progress of labour (cervical dilatation, cervical effacement, duration of first and second stage of labour) and neonatal outcome (Apgar score at 1 and 5 min and neonatal deaths). Our conclusion is that increased maternal BMI is associated with an increased incidence of medical disorders during pregnancy, caesarean section rate and fatal macrosomia.

Keywords: Body mass index; Labour outcome.

Dept. of Occupational and Environmental Medicine Department

733. Angiotensin-Converting Enzyme Gene Polymorphisms and Hypertension in Occupational Noise Exposure in Egypt

Nermin Zawilla, Dalia Shaker, Amaal Abdelaal and Wael Aref

International Journal of Occupational and Environmental Health, 20: 194-206 (2014) IF: 1.099

Background: The gene-environment interaction in the pathogenesis of hypertension has not been extensively studied in occupational noise.

Objectives: The aim of this study was to determine the relationship between noise and hypertension in Egyptian workers, the interaction of angiotensin-converting enzyme (ACE) gene polymorphisms as modifiers, and the possible relationship between noise hearing impairment and hypertension.

Methods: Study subjects were divided into two groups depending on noise exposure level. The control group ($n=161$) was exposed to noise intensity < 85 dB and the exposed group ($n=217$) was exposed to noise intensity ≥ 85 dB. A polymerase chain reaction was used to differentiate the various genotypes of ACE insertion/deletion (I/D) and ACE G2350A.

Results: Noise significantly increased the likelihood of hypertension. Carriers of the genotypes AG, GG, and DD were vulnerable to hypertension on noise exposure. No association between hypertension and hearing impairment or noise-induced hearing loss (NIHL) was found.

Conclusion: Our results support the association between ACE gene polymorphisms and occurrence of hypertension in noise-exposed workers.

Keywords: Ace I/D Gene, Ace G2350a Gene, Genetic Susceptibility, Gene Polymorphism Occupational Noise, Hypertension.

734. Liver Functions in Silica-Exposed Workers in Egypt: Possible Role of Matrix Remodeling and Immunological Factors

Zawilla N, Taha F and Ibrahim Y.

International Journal of Occupational and Environmental Health, 20: 146-156 (2014) IF: 1.099

Background: Brick manufacturing constitutes an important industrial sector in Egypt with considerable exposure to silica.

Objectives: We aimed for evaluating hepatic functions in silica-exposed workers in the clay brick industry, and the possible role of matrix remodeling and immunological factors.

Methods: A case-control study, 87 workers as exposed and 45 as control subjects. Questionnaire, clinical examination, and laboratory investigations: liver functions, matrix metalloproteinase-9, immunoglobulins G and E, and anti-liver kidney microsomal antibody.

Results: In the exposed workers, mean levels of liver functions, matrix metalloproteinase-9 (MMP-9), and IgG and IgE were significantly higher. In the silicotic subgroup the mean level of GGT was almost twice the level in the non-silicotic subjects. Logistic regression showed that abnormal GGT and ALT were associated with production workers.

Conclusion: Workers in the clay brick industry showed evidence of liver disease that could be related to matrix remodeling.

Keywords: Brick Workers, Silica, Liver Functions, Matrix Metalloproteinase-9, Immunoglobulins.

Dept. of Ophthalmology

735. Bimatoprost/Timolol Versus Travoprost/ Timolol Fixed Combinations in an Egyptian Population: A Hospital-Based Prospective Randomized Study

Tamer Ahmed Macky

Journal of Glaucoma, 23: 561-566 (2014) IF: 2.427

Purpose: To compare the efficacy of bimatoprost/timolol (BTFC) or travoprost/timolol (TTFC) fixed combinations on intraocular pressure (IOP) reduction in an Egyptian population.

Methods: Patients with primary open angle glaucoma were randomized to receive either BTFC or TTFC. IOPs were measured at baseline, 2 weeks, and 1, 2, 4, and 6 months. The primary outcome measure was the mean change in IOP from baseline at each visit. Secondary outcome measures included the incidence of adverse events.

Results: Eighty patients (80 eyes) were included finally: 40 eyes in each group. Baseline mean IOPs were 24.78 ± 3.53 and 25.26 ± 3.51 mm Hg for BTFC and TTFC, respectively ($P=0.344$). Both drops provided statistically significant IOP reductions from baseline at all visits ($P<0.001$). BTFC provided greater significant mean IOP reductions from baseline than TTFC at each visit ($P<0.001$). Mean IOP reductions were 11.34 and 6.42 mm Hg at 2 weeks ($P=0.000$), and 11.17 and 7.89 mm Hg at 6 months ($P=0.001$) for BTFC and TTFC, respectively. IOPs at 2 weeks were ≤ 18 mm Hg in 36 (90.8%) versus 22 (55%) eyes and ≤ 16 mm Hg in 28 (70%) versus 16 (40%) eyes ($P<0.001$), and at 6 months, ≤ 18 mm Hg in 38 (95%) versus 28 (70%) eyes and ≤ 16 mm Hg in 30 (75%) versus 18 (45%) eyes for BTFC and TTFC, respectively ($P<0.001$).

Conclusion: Both drops provided effective IOP reduction that was greater and patients were more likely to achieve lower target pressures with BTFC than with TTFC.

Keywords: Bimatoprost; Travoprost; Timolol; Glaucoma.

736. Surgically Induced Astigmatism Following Glaucoma Surgery in Egyptian Patients

El-Saied HM, Foad PH, Eldaly MA and Abdelhakim MA.

Journal of Glaucoma, 23: 190-193 (2014) IF: 2.427

Purpose: The altered visual function induced by changes in corneal curvature following filtration surgery is distressing to patients. The aim of this study was to evaluate surgically induced astigmatism following trabeculectomy in comparison with deep sclerectomy.

Methods: In a prospective interventional comparative study, patients with primary open-angle glaucoma were randomly allocated to either group A or B; deep sclerectomy with mitomycin C 0.2 mg/mL and trabeculectomy with mitomycin C 0.2 mg/mL, respectively. Keratometry was performed using Topcon KR-7000P autokerato-refractometer preoperatively and at 6 months postoperatively. Vector analysis was used to analyze the surgically induced astigmatism.

Results: Sixty eyes of 45 patients in group A, and 60 eyes of 42 patients in group B were enrolled for vector analysis. The mean preoperative astigmatic vector power was $0.49 \pm 1.65D$

and $+0.47 \pm 2.18D$ in groups A and B, respectively. The mean postoperative astigmatic vector power was $1.14 \pm 1.55D$ in group A and $0.35 \pm 1.8D$ in group B. The mean change in astigmatic vector powers was $0.67 \pm 1.63D$ in group A and $0.82 \pm 2.0D$ in group B. When compared with preoperative data in either group, the differences were significant, $P=0.001$ & 0.007 in groups A and B respectively, whereas the postoperative difference between either group was insignificant ($P=0.723$). A total of 40% of corneas got flatter in group B compared with 25% in group A, $P=0.057$.

Conclusions: Both trabeculectomy and deep sclerectomy induced considerable postoperative astigmatism. A longer follow-up period is recommended to study the different patterns of astigmatism in either procedure.

Keywords: Trabeculectomy, Deep Sclerectomy, Keratometry, Astigmatic Vector.

737. Dexamethasone Intravitreal Implant Versus Bevacizumab for Central Retinal Vein Occlusion-related Macular Oedema: A Prospective Randomized Comparison

Gado A.S. and T. A. Macky

Clinical and Experimental Ophthalmology, 42 (7): 650-655 (2014) IF: 1.953

Background: To compare the efficiency of dexamethasone implants to bevacizumab injections in macular oedema secondary to central retinal vein occlusion.

Design: Randomized clinical trial at Cairo University Hospitals.

Participants: Sixty eyes of 60 newly diagnosed patients with macular oedema secondary to central retinal vein occlusion with best corrected visual acuity 0.3 logMAR (6/12) to counting fingers, no evidence of retinal ischaemia and/or neovascularization on fluorescein angiography and central subfield thickness ≥ 300 μ m on ocular coherence tomography.

Methods: Patients were randomly assigned (30 eyes each group) to either intravitreal dexamethasone implant or bevacizumab injections repeated whenever needed. Best corrected visual acuity and ocular coherence tomography were done at baseline and monthly for 6 months.

Main Outcome Measures: Comparing best corrected visual acuity and central foveal subfield thickness between both groups during the 6-month period.

Results: There was no significant difference in best corrected visual acuity between the two groups during the 6 months (P -values > 0.05). The bevacizumab group had a statistically significant thinner central subfield thickness at 1 month (P -value 0.006) and no statistically significant difference for the rest of the 6 months (P -values > 0.05). There was a statistically significant higher intraocular pressure for dexamethasone implant group (compared with bevacizumab) at 3-6 months (P -values < 0.05), respectively.

Conclusion: Both drugs provided effective best corrected visual acuity improvements and central subfield thickness reductions that showed no statistically significant difference between the two groups.

Keywords: Central Retinal Vein Occlusion; Dexamethasone Implant (Ozurdex); Intravitreal Bevacizumab (Avastin); Macular Oedema.

738. Orbital Epidermoid Cysts: A Diagnosis to Consider

Rania A. Ahmed and Rasha M. Eltanamly

Journal of Ophthalmology, (2014) IF: 1.935

Background: Orbital epidermoids form a rare pathological entity that is separate from dermoid cysts. They have variable clinical and radiological presentations and they should be considered in the differential diagnosis of orbital cystic lesions. This work describes the various clinical and radiological presentations of 17 cases of epidermoid cysts and the surgical outcome. **Method:** A prospective interventional study was conducted on 17 patients diagnosed with epidermoid cysts. Patients' symptoms and signs were recorded; CT scan was done for all patients. All lesions were removed through anterior orbitotomy and histopathological diagnosis confirmed.

Results: Mean age of patients was 16.3 years \pm 10.54. Main complaints were lid swelling, masses, ocular dissimilarity, chronic pain, and ocular protrusion. Clinical signs varied from lid swelling and masses in all cases to proptosis, globe displacement, limitation of ocular motility, and scars. Radiological findings ranged from homogenous hypodense masses (58.8%) to homogenous radiolucent (17.6%) and heterogenous masses (23.5%). No recurrences following surgeries were reported throughout the follow-up (mean 18.8 months \pm 0.72).

Conclusion: Deep orbital epidermoid cysts are a separate entity that can behave like deep orbital epidermoid; however, they usually present at a relatively older age. They can be associated with increased orbital volume but not necessarily related to bony sutures.

Keywords: Epidermoid Cyst; Orbit; Proptosis; CT Imaging.

739. Changes in Corneal Sensation Following 20 and 23G Vitrectomy in Diabetic and Nondiabetic Patients

MM Mahgoub and TA Macky

Eye, 28: 1286-1291 (2014) IF: 1.897

Purpose: To evaluate the changes in corneal sensation (CS) following two different port sizes vitrectomy in diabetic and non-diabetic patients. **Patients and Methods:** Patients prepared for pars plana vitrectomy were randomly assigned to four groups: diabetics to either 20G or 23G and non-diabetics to either 20G or 23G vitrectomy systems. CS was measured using the Cochet-Bonnet aesthesiometer at baseline preoperatively, and at 1 day, 1 week, and 1 month postoperative.

Results: A total of 40 eyes of 40 patients were included in this study; 20 patients (20 eyes) in each of the 20-G and 23-G groups. The mean age was 55.51 \pm 10 years and male/female ratio was 2:3. There were no significant difference between CS at baseline, and at 1 day, 1 week, and 1 month between both the 20-G and 23-G groups. There were significant drops in CSs at 1 day and 1 week for both groups (20G and 23 G) with incomplete recovery for the 20-G group and complete recovery for the 23-G group. Comparing the two diabetic subgroups (20G and 23G) and two non-diabetic subgroups (20G and 23G), there were no significant differences in CS between subgroups. Diabetics' eyes had lower CSs throughout the study period in the 20-G and 23-G groups, which was significant at day 1 and week 1 postoperatively.

Conclusion: The vitrectomy procedure showed reduction in CS in the postoperative period with minimal nonsignificant difference between 20G and 23G systems. However, diabetics' eyes showed

compromised CS preoperatively and a further significant reduction for 1 month postoperatively compared with non-diabetics.

Keywords: Vitrectomy; Corneal sensation; Diabetic patients.

740. Intermittent Exotropia: Relation Between Age and Surgical Outcome: A Change-Point Analysis

A Awadein, RM Eltanamly and M Elshazly

Eye, 28: 587-593 (2014) IF: 1.897

Purpose: To study the relationship between age and response to surgery in patients with intermittent exotropia and to identify change points in response to surgery.

Methods: A retrospective analysis was conducted on 311 patients with intermittent exotropia who had bilateral lateral rectus recession using standard tables with minimum follow-up of 6 months. Data were analyzed using the change-point analysis software to identify cutoff points. A prospective pilot study was then performed on 171 consecutive patients with intermittent exotropia with the same clinical characteristics, in whom amount of recession was modified according to the identified cutoff points. In angles with two change points, 1-mm recession was reduced from patients younger than the lower change point and 1.5-mm recession was added to those older than the upper change point. In angles with one change point, 1.5-mm recession was added to those older than the change point. Satisfactory alignment was defined as esophoria/tropia \leq 5D to exophoria/tropia \leq 8D.

Results: There was a negative correlation ($P < 0.01$) between response to surgery and age at surgery for all angles. In younger patients (< 7 years) in whom surgical dose was reduced, there was no significant change in success rate (77%), compared with those who had surgery using standard tables (75%). In older patients (412 years) in whom surgical dose was increased, there was a statistically significant increase in success rate (80% vs 41%).

Conclusions: Modifying the surgical dose according to age can improve the success in patients with intermittent exotropia.

Keywords: Intermittent exotropia; Surgery; Recession.

Dept. of Orthopaedic

741. Low-Intensity Pulsed Ultrasound Shortens the Treatment Time in Tibial Distraction Osteogenesis

Salem KH and Schmelz A.

International Orthopaedics, 38: 1477-1482 (2014) IF: 2.019

Purpose: Low-intensity pulsed ultrasound (LIPUS) has been used successfully to accelerate healing of fresh fractures and non-unions. It also improved callus maturation with distraction osteogenesis in animal trials. However, only few clinical studies are available to support its widespread use for the latter indication in humans.

Methods: Twenty-one patients undergoing callus distraction for posttraumatic tibial defects were randomized into two groups: the trial group (12 men; mean age 32 years) which received 20 minutes LIPUS daily during treatment and the control group (six men and three women; mean age 29 years) without LIPUS treatment. The Ilizarov ring fixator was used in all cases. Results were examined clinically and radiologically, analysing callus maturation with a computer-assisted measurement.

Results: Patients in the LIPUS group needed a mean of 33 days to consolidate every 1 cm of new bone in comparison to 45 days in the control group. The healing index was therefore shortened by 12 days/cm in the LIPUS group. This means that callus maturation was 27 % faster in the LIPUS group. The fixator time was shortened by 95 days in the LIPUS group. The overall daily increase in radiographic callus density was 33 % more in the LIPUS group than in the control group.

Conclusions: LIPUS treatment is an effective non-invasive adjuvant method to enhance callus maturation in distraction osteogenesis. With the help of this treatment, the healing time and the duration of external fixation can be reliably shortened.

Keywords: Low-Intensity Pulsed Ultrasound; Ilizarov; Callus Distraction; Bone Defects.

742. Management of Neglected Bennett Fracture in Manual Laborers by Tension Fixation

Mahmoud M, El Shafie S, Menorca RM and Elfar JC

The Journal of Hand Surgery, 39: 1728-1733 (2014) IF: 1.655

Purpose: To report the results of open reduction and internal fixation (ORIF) of Bennett fractures in young, active patients using a K-wire and wire loop construct to achieve anatomical reduction and to allow return to manual labor.

Methods: In this prospective series, we treated 10 male manual laborers (mean age, 30 y; range, 20–44 y) with Bennett fractures diagnosed after a minimum of 12 weeks (mean, 16 wk; range, 12–18 wk). ORIF using 2 K-wires with a wire loop and a neutralizing transarticular K-wire was performed with direct articular visualization. Patients were evaluated for range of motion, grip strength, and pinch strength, and a visual analog scale score rated pain before surgery and 12 months later.

Results: The mean follow-up was 16 months (range, 12–36 mo). The average visual analog scale improved from 6 to 2, mean palmar abduction improved from 15° to 40°, mean radial abduction increased from 22° to 39°, average pinch strength improved from 9.9 kg to 15.5 kg, and average grip strength increased from 34 kg to 49 kg. Complications included transient irritation of the radial sensory nerve or lateral cutaneous nerve of the forearm in 3 patients, pin track granuloma formation in 2 patients, and marginal osteophyte formation in 2 patients. Union was achieved in all 10 patients, and 9 patients returned to their previous manual labor occupation.

Conclusions: Our results suggest that neglected Bennett fractures can be effectively managed by ORIF using K-wires and a wire loop without compromising strength or motion. This technique reliably restored the anatomy and provided adequate thumb motion and strength to allow a return to manual labor. Type of study/level of evidence Therapeutic IV.

Keywords: Internal Fixation; K-Wires; Manual Laborers; Neglected Bennett; Wire Loops.

Dept. of Parasitology

743. The Effect of Praziquantel and Carica Papaya Seeds on Hymenolepis Nana Infection in Mice Using Scanning Electron Microscope

Maha Mohamed Abou El-Magd Basyoni

Parasitology Research, 113: 2827-2836 (2014) IF: 2.327

Hymenolepis nana (*H. nana*) is the most common tapeworm infection worldwide. It is more prevalent in warm climates where

sanitation is poor, particularly among children. The effect and mechanism of action of praziquantel (PZQ), given at a dose of 25-mg/kg BW, and *Carica papaya* dried seed crude aqueous extract (CAE), given at a dose of 1.2-g/kg BW, were assessed on *H. nana* worms in experimentally infected mice. Tegumental changes were studied using the scanning electron microscope (SEM) and different parasitological parameters were observed. Each group of infected mice was divided into two subgroups. The first subgroup received either treatment before the 4th day after infection to investigate their effects on the cysticercoid stage. The other subgroup received treatments after the development of the adult stage, confirmed by eggs detection in stool. Both PZQ and *C. papaya* dried seed CAE resulted in a significant reduction of worm burden, total egg output and viable egg count. Marked tegumental changes were evident in adult worms treated with either treatment including shrinkage of the scolex and neck region with rostellar edema and complete loss of its hooks. However, all previous effects were exerted more rapidly in the case of PZQ treatment. They both significantly reduced cysticercoid stage size. Nevertheless, *C. papaya* outstand PZQ in having a deforming effect on adults arising from treated cysticercoids. It was concluded that *C. papaya* has significant anti-cestodal properties that enable its seed extract to be a very effective alternative to PZQ against *H. nana*.

Keywords: Hymenolepis Nana; Praziquantel; C; Papaya; Scanning Electron Microscope Introduction.

744. Molecular Copro-prevalence of Cryptosporidium in Egyptian Children and Evaluation of Three Diagnostic Methods

Mona M Fathy, Noha M Abdelrazek, Fayza A Hassan and Ayman A El-Badry

Indian Pediatrics, 51: 1144-1147 (2014) IF: 1.014

Objective: To determine molecular prevalence of *Cryptosporidium* in a cohort of Egyptian children and compare three diagnostic tests.

Methods: Stool samples from children with diarrhea and from apparently healthy children were examined for *Cryptosporidium* using microscopy, enzyme linked immuosorbant assay (ELISA) and polymerase chain reaction (PCR). Results: PCR detected *Cryptosporidium* in 22.4% of children. Acid-fast stain and ELISA showed false negativity but 100% specificity with PCR as gold standard.

Conclusion: *Cryptosporidium* is a common cause of diarrhea in children in Egypt.

Keywords: Diarrhea, Etiology, Elisa, Nested Pcr.

Dept. of Pathology

745. Lymphatic Obstruction: A Novel Etiologic Factor in the Formation of Antrochoanal Polyps

Mostafa HS, Fawzy TO, Jabri WR and Ayad E.

Annals of Otolaryngology, Rhinology & Laryngology, 2014, Vol. 123(6): 381-386 (2014) IF: 1.054

Objectives: Antrochoanal polyps (ACPs) originate from the inner wall of the maxillary sinus and either pass through the natural sinus ostia or cause pressure-induced destruction of the medial sinus wall. Eventually, they extend into the choanae and nasopharynx. Most authors who have studied the microstructure

of ACPs, including the component stromal cells and surface epithelium, have not examined the transitional area between the sinus mucosa and the pedicle of the polyp. No explanation has been given for the absence of a cystic intrasinus portion of the polyp, in many cases refuting the theory (most accepted) that polyps are caused by a mucous gland with a blocked acinus. We noted during endoscopic removal of the ACPs that the antral part of the polyp was cystic in only 5% of patients, and polypoid in 95%. The cystic intrasinus portion of the polyp is a cornerstone of the pathophysiology of ACPs, whether caused by inflammation, cicatrization, or allergy. This finding prompted us to examine the transitional area between the sinus mucosa and the pedicle of the polyp to verify the possibility that lymphatic obstruction--whether primary (areas of higher tissue pressure) or secondary (cicatrization or inflammation)--could be an etiologic factor in the formation of ACPs.

Methods: The study material consisted of 25 ACPs and 25 chronic maxillary sinusitis mucosal biopsy specimens (control group). The detection of lymphatic vessels was based on the identification of lymph vessel endothelial hyaluronic acid receptor I (LYVE-I) in the endothelial cells of the lymphatic capillaries. This was the first lymph-specific hyaluronic acid receptor to be characterized, and is a uniquely powerful marker for lymph vessels, differentiating them from (blood) capillaries.

Results: The density of the lymphatic vessels was marked in 22 of the 25 ACP specimens, ie, 88% of the ACP cases, compared with 16% of the control group.

Conclusions: This study resulted in two main findings. The first was the absence of intramaxillary cysts in the ACPs in 23 cases (92%). The second was the markedly high density of lymphatic vessels in the transitional area between the sinus mucosa and the pedicle of the ACPs, in comparison with the density in the control group. These two findings refute the "blocked acinus theory" and indicate that lymphatic obstruction, whether primary or secondary to chronic sinus infection, might play a leading role in the formation and further growth of ACPs.

Keywords: Acinous Mucous Gland, Antrochoanal Polyp, Endoscopic Sinus Surgery, Functional Endoscopic Sinus Surgery, Killian Polyp, Lymphatic Capillary, Lyve-1, Maxillary Sinus, Maxillary Sinusitis Mucosal Biopsy, Nasal Polyp.

Dept. of Pediatrics

746. Exome Sequencing Links Corticospinal Motor Neuron Disease to Common Neurodegenerative Disorders

Novarino G, Fenstermaker AG, Zaki MS, Hofree M, Silhavy JL, Heiberg AD, Abdellateef M, Rosti B, Scott E, Mansour L, Masri A, Kayserili H, Al-Aama JY, Abdel-Salam GM, Karminejad A, Kara M, Kara B, Bozorgmehri B, Ben-Omran T, Mojahedi F, Mahmoud IG, Bouslam N, Bouhouche A, Benomar A, Hanein S, Raymond L, Forlani S, Mascaro M, Selim L, Shehata N, Al-Allawi N, Bindu PS, Azam M, Gunel M, Caglayan A, Bilguvar K, Tolun A, Issa MY, Schroth J, Spencer EG, Rosti RO, Akizu N, Vaux KK, Johansen A, Koh AA, Megahed H, Durr A, Brice A, Stevanin G, Gabriel SB, Ideker T and Gleeson JG.

Science, 343(6170): 506-511 (2014) IF: 31.477

Hereditary spastic paraplegias (HSPs) are neurodegenerative motor neuron diseases characterized by progressive age-dependent loss of corticospinal motor tract function. Although the genetic basis is partly understood, only a fraction of cases can

receive a genetic diagnosis, and a global view of HSP is lacking. By using whole-exome sequencing in combination with network analysis, we identified 18 previously unknown putative HSP genes and validated nearly all of these genes functionally or genetically. The pathways highlighted by these mutations link HSP to cellular transport, nucleotide metabolism, and synapse and axon development. Network analysis revealed a host of further candidate genes, of which three were mutated in our cohort. Our analysis links HSP to other neurodegenerative disorders and can facilitate gene discovery and mechanistic understanding of disease.

747. BCG Vaccination in Patients With Severe Combined Immunodeficiency: Complications, Risks, and Vaccination Policies

Marciano BE, Huang CY, Joshi G, Rezaei N, Carvalho BC, Allwood Z, Ikinogullari A, Reda SM, Gennery A, Thon V, Espinosa-Rosales F, Al-Herz W, Porras O, Shcherbina A, Szaflarska A, Kiliç Ş, Franco JL, Gómez Raccio AC, Roxo P Jr, Esteves I, Galal N, Grumach AS, Al-Tamemi S, Yildiran A, Orellana JC, Yamada M, Morio T, Liberatore D, Ohtsuka Y, Lau YL, Nishikomori R, Torres-Lozano C, Mazzucchelli JT, Vilela MM, Tavares FS, Cunha L, Pinto JA, Espinosa-Padilla SE, Hernandez-Nieto L, Elfeky RA, Ariga T, Toshio H, Dogu F, Cipe F, Formankova R, Nuñez-Nuñez ME, Bezrodnik L, Marques JG, Pereira MI, Listello V, Slatter MA, Nademi Z, Kowalczyk D, Fleisher TA, Davies G, Neven B and Rosenzweig SD

The Journal of Allergy and Clinical Immunology, 133: 1134-1141 (2014) IF: 11.248

Background: Severe combined immunodeficiency (SCID) is a syndrome characterized by profound T-cell deficiency. BCG vaccine is contraindicated in patients with SCID. Because most countries encourage BCG vaccination at birth, a high percentage of patients with SCID are vaccinated before their immune defect is detected.

Objectives: We sought to describe the complications and risks associated with BCG vaccination in patients with SCID.

Methods: An extensive standardized questionnaire evaluating complications, therapeutics, and outcomes regarding BCG vaccination in patients given a diagnosis of SCID was widely distributed. Summary statistics and association analysis was performed.

Results: Data on 349 BCG-vaccinated patients with SCID from 28 centers in 17 countries were analyzed. Fifty-one percent of the patients had BCG-associated complications, 34% disseminated and 17% localized (a 33,000- and 400-fold increase, respectively, over the general population).

Patients receiving early vaccination (=1 month) showed an increased prevalence of complications (P = .006) and death caused by BCG-associated complications (P < .0001). The odds of experiencing complications among patients with T-cell numbers of 250/μL or less at diagnosis was 2.1 times higher (95% CI, 1.4-3.4 times higher; P = .001) than among those with T-cell numbers of greater than 250/μL. BCG-associated complications were reported in 2 of 78 patients who received antimycobacterial therapy while asymptomatic, and no deaths caused by BCG-associated complications occurred in this group. In contrast, 46 BCG-associated deaths were reported among 160 patients treated with antimycobacterial therapy for a symptomatic BCG infection (P < .0001).

Conclusions: BCG vaccine has a very high rate of complications in patients with SCID, which increase morbidity and mortality rates. Until safer and more efficient antituberculosis vaccines become available, delay in BCG vaccination should be considered to protect highly vulnerable populations from preventable complications.

Keywords: Primary immunodeficiency; Severe combined immunodeficiency; Vaccine; BCG; Mycobacteria; Newborn screening.

748. Clinical Picture and Treatment of 2212 Patients With Common Variable Immunodeficiency

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The Journal of Allergy and Clinical Immunology, 134: 116-126 (2014) IF: 11.248

Background: Common variable immunodeficiency (CVID) is an antibody deficiency with an equal sex distribution and a high variability in clinical presentation. The main features include respiratory tract infections and their associated complications, enteropathy, autoimmunity, and lymphoproliferative disorders.

Objective: This study analyzes the clinical presentation, association between clinical features, and differences and effects of immunoglobulin treatment in Europe.

Methods: Data on 2212 patients with CVID from 28 medical centers contributing to the European Society for Immunodeficiencies Database were analyzed retrospectively.

Results: Early disease onset (<10 years) was very frequent in our cohort (33.7%), especially in male subjects (39.8%). Male subjects with early-onset CVID were more prone to pneumonia and less prone to other complications suggesting a distinct disease entity. The diagnostic delay of CVID ranges between 4 and 5 years in many countries and is particularly high in subjects with early-onset CVID. Enteropathy, autoimmunity, granulomas, and splenomegaly formed a set of interrelated features, whereas bronchiectasis was not associated with any other clinical feature. Patient survival in this cohort was associated with age at onset and age at diagnosis only. There were different treatment strategies in Europe, with considerable differences in immunoglobulin dosing, ranging from 130 up to 750 mg/kg/mo. Patients with very low trough levels of less than 4 g/L had poor clinical outcomes, whereas higher trough levels were associated with a reduced frequency of serious bacterial infections.

Conclusion: Patients with CVID are being managed differently throughout Europe, affecting various outcome measures. Clinically, CVID is a truly variable antibody deficiency syndrome.

Keywords: Common variable immunodeficiency; Autoimmunity; Enteropathy; Granulomas; Immunoglobulin replacement; Lymphadenopathy; Patient self-reported outcomes; Primary antibody deficiency; Quality of Life; Treatment.

749. A 1-Year Randomized Controlled Trial of Deferasirox Vs Deferoxamine for Myocardial Iron Removal in β -Thalassemia Major (CORDELIA)

Pennell DJ, Porter JB, Piga A, Lai Y, El-Beshlawy A, Belhoul KM, Elalfy M, Yesilipek A, Kiliç Y, Lawniczek T, Habr D, Weisskopf M, Zhang Y and Aydinok Y

Blood, 123, 10: 1447-1454 (2014) IF: 9.775

Randomized comparison data on the efficacy and safety of deferasirox for myocardial iron removal in transfusion dependent patients are lacking. CORDELIA was a prospective, randomized comparison of deferasirox (target dose 40 mg/kg per day) vs subcutaneous deferoxamine (50-60 mg/kg per day for 5-7 days/week) for myocardial iron removal in 197 β -thalassemia major patients with myocardial siderosis (T2* 6-20 milliseconds) and no signs of cardiac dysfunction (mean age, 19.8 years). Primary objective was to demonstrate noninferiority of deferasirox for myocardial iron removal, assessed by changes in myocardial T2* after 1 year using a per-protocol analysis. Geometric mean (Gmean) myocardial T2* improved with deferasirox from 11.2 milliseconds at baseline to 12.6 milliseconds at 1 year (Gmeans ratio, 1.12) and with deferoxamine (11.6 milliseconds to 12.3 milliseconds; Gmeans ratio, 1.07). The between-arm Gmeans ratio was 1.056 (95% confidence interval [CI], 0.998, 1.133). The lower 95% CI boundary was greater than the prespecified margin of 0.9, establishing noninferiority of deferasirox vs deferoxamine (P5 .057 for superiority of deferasirox).

Left ventricular ejection fraction remained stable in both arms. Frequency of drug-related adverse events was comparable between deferasirox (35.4%) and deferoxamine (30.8%). CORDELIA demonstrated the noninferiority of deferasirox compared with deferoxamine for myocardial iron removal. This trial is registered at www.clinicaltrials.

Keywords: Deferasirox; Deferoxamine; β -thalassemia major, Cordelia.

750. Mutations in 12 Known Dominant Disease-Causing Genes Clarify Many Congenital Anomalies of The Kidney and Urinary Tract

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Kidney International, 85: 1429-1433 (2014) IF: 8.52

Congenital anomalies of the kidney and urinary tract (CAKUT) account for approximately half of children with chronic kidney disease. CAKUT can be caused by monogenic mutations; however, data are lacking on their frequency. Genetic diagnosis has been hampered by genetic heterogeneity and lack of genotype-phenotype correlation. To determine the percentage of cases with CAKUT that can be explained by mutations in known CAKUT genes, we analyzed the coding exons of the 17 known dominant CAKUT-causing genes in a cohort of 749 individuals from 650 families with CAKUT. The most common phenotypes in this CAKUT cohort were vesicoureteral reflux in 288 patients, renal hypodysplasia in 120 patients, and unilateral renal agenesis in 90 patients. We identified 37 different heterozygous mutations (33 novel) in 12 of the 17 known genes in 47 patients from 41 of the 650 families (6.3%). These mutations include (number of

families): BMP7 (1), CDC5L (1), CHD1L (5), EYA1 (3), GATA3 (2), HNF1B (6), PAX2 (5), RET (3), ROBO2 (4), SALL1 (9), SIX2 (1), and SIX5 (1). Furthermore, several mutations previously reported to be disease-causing are most likely benign variants. Thus, in a large cohort over 6% of families with isolated CAKUT are caused by a mutation in 12 of 17 dominant CAKUT genes. Our report represents one of the most in-depth diagnostic studies of monogenic causes of isolated CAKUT in children.

Keywords: Renal Agenesis, Renal Development, Genetic Renal Disease.

751. The Influence of Physiological Matrix Conditions on Permanent Culture of Induced Pluripotent Stem Cell-Derived Cardiomyocytes

Wael Ahmed Attia Taha Abdel Wahab

Biomaterials., 35: 7374-7385 (2014) IF: 8.312

Cardiomyocytes (CMs) from induced pluripotent stem (iPS) cells mark an important achievement in the development of in vitro pharmacological, toxicological and developmental assays and in the establishment of protocols for cardiac cell replacement therapy. Using CMs generated from murine embryonic stem cells and iPS cells we found increased cell-matrix interaction and more matured embryoid body (EB) structures in iPS cell-derived EBs. However, neither suspension-culture in form of purified cardiac clusters nor adherence-culture on traditional cell culture plastic allowed for extended culture of CMs. CMs grown for five weeks on polystyrene exhibit signs of massive mechanical stress as indicated by a-smooth muscle actin expression and loss of sarcomere integrity. Hydrogels from polyacrylamide allow adapting of the matrix stiffness to that of cardiac tissue. We were able to eliminate the bottleneck of low cell adhesion using 2,5-Dioxopyrrolidin-1-yl-6-acrylamidohexanoate as a crosslinker to immobilize matrix proteins on the gels surface. Finally we present an easy method to generate polyacrylamide gels with a physiological Young's modulus of 55 kPa and defined surface ligand, facilitating the culture of murine and human iPS-CMs, removing excess mechanical stresses and reducing the risk of tissue culture artifacts exerted by stiff substrates.

Keywords: Cardiomyocyte; Cell Adhesion; Cell Culture; Cell Viability; Cross-Linking; Hydrogel.

752. Serum Ferritin Level And Morbidity Risk in Transfusion-Independent Patients With B-Thalassemia Intermedia: the Orient Study

Khaled M. Musallam, Maria Domenica Cappellini, Shahina Daar, Mehran Karimi, Amal El-Beshlawy, Giovanna Graziadei, Matthew Magestro, Jerome Wulff, Guilhem Pietri and Ali T. Taher

Haematologica, 99 (11): e218-221: (2014) IF: 5.868

Similar to other forms of non-transfusion-dependent thalassemia, the diagnosis of β -thalassemia intermedia is associated with a state of iron overload.¹⁻³ This occurs in the absence of regular transfusion therapy and is primarily attributed to increased intestinal iron absorption signaled by ineffective erythropoiesis and low serum hepcidin levels.⁴ Although iron accumulation in transfusion-independent β -thalassemia intermedia patients is slower than in regularly-transfused β -thalassemia major, recent evidence highlights that a considerable proportion of patients ultimately reach clinically significant levels that can cause serious

morbidity after the age of ten years.¹⁻³ Accordingly, current management guidelines recommend initiating iron chelation therapy in β -thalassemia intermedia patients over ten years of age and in whom liver iron concentration has reached 5 mg Fe/g dry weight (dw) or over.^{2,5,6} This threshold was primarily selected in the light of its established association with morbidity in β -thalassemia intermedia patients,^{7,8} as well as recent evidence on the efficacy and safety of iron chelation therapy in non-transfusion-dependent thalassemia (including β -thalassemia intermedia) patients for whom treatment was started at 5 mg Fe/g dw or over (THALASSA trial).^{9,10} A liver iron concentration of 3 mg Fe/g dw was also used and this was the recommended threshold at which to interrupt iron chelation therapy and avoid overchelation.^{2,5,6,9} When liver iron concentration measurement is unavailable, serum ferritin levels of 800 and 300 ng/mL can be used as an alternative to the 5 and 3 mg Fe/g dw liver iron concentration values, respectively,^{2,5,6} as established in the THALASSA trial through correlation analysis between both iron overload indices.^{11,12}

Keywords: Serum Ferritin; Transfusion-Independent; β -Thalassemia Intermedia.

753. PRRT2 Mutations: Exploring the Phenotypical Boundaries

Djémié T, Weckhuysen S, Holmgren P, Hardies K, Van Dyck T, Hendrickx R, Schoonjans AS, Van Paesschen W, Jansen AC, De Meirleir L, Selim LA, Girgis MY, Buyse G, Lagae L, Smets K, Smouts I, Claeys KG, Van den Bergh V, Grisar T, Blatt I, Shorer Z, Roelens F, Afawi Z, Helbig I, Ceulemans B, De Jonghe P and Suls A.

J Neurol Neurosurg Psychiatry, 85(4): 462-465 (2014) IF: 5.58

Background: Mutations in the proline-rich transmembrane protein 2 (PRRT2) gene have been identified in patients with benign (familial) infantile convulsions (B(F)IC), infantile convulsions with choreoathetosis (ICCA) and paroxysmal dyskinesias (PDs). However it remains unknown whether PRRT2 mutations are causal in other epilepsy syndromes. After we discovered a PRRT2 mutation in a large family with ICCA containing one individual with febrile seizures (FS) and one individual with West syndrome, we analysed PRRT2 in a heterogeneous cohort of patients with different types of infantile epilepsy.

Methods: We screened a cohort of 460 patients with B(F)IC or ICCA, fever related seizures or infantile epileptic encephalopathies. All patients were tested for point mutations using direct sequencing.

Results: We identified heterozygous mutations in 16 individuals: 10 familial and 6 sporadic cases. All patients were diagnosed with B(F)IC, ICCA or PD. We were not able to detect mutations in any of the other epilepsy syndromes. Several mutation carriers had learning disabilities and/or impaired fine motor skills later in life.

Conclusions: PRRT2 mutations do not seem to be involved in the aetiology of FS or infantile epileptic encephalopathies. Therefore B(F)IC, ICCA and PD remain the core phenotypes associated with PRRT2 mutations. The presence of learning disabilities or neuropsychiatric problems in several mutation carriers calls for additional clinical studies addressing this developmental aspect in more detail.

Keywords: Clinical Neurology; Epilepsy; Genetics; Neurogenetics.

754. Rapid Detection of Monogenic Causes of Childhood-Onset Steroid-Resistant Nephrotic Syndrome

Svjetlana Lovric, Humphrey Fang, Virginia Vega-Warner, Carolin E. Sadowski, Heon Yung Gee, Jan Halbritter, Shazia Ashraf, Pawaree Saisawat, Neveen A. Soliman, Jameela A. Kari, Edgar A. Otto and Friedhelm Hildebrandt

Clinical Journal of American Society of Nephrology, 9: 1109-1116 (2014) IF: 5.25

Background and Objectives: In steroid-resistant nephrotic syndrome (SRNS), >21 single-gene causes are known. However, mutation analysis of all known SRNS genes is time and cost intensive. This report describes a new high-throughput method of mutation analysis using a PCR-based microfluidic technology that allows rapid simultaneous mutation analysis of 21 single-gene causes of SRNS in a large number of individuals.

Design, Setting, Participants and Measurements: This study screened individuals with SRNS; samples were submitted for mutation analysis from international sources between 1996 and 2012. For proof of principle, a pilot cohort of 48 individuals who harbored known mutations in known SRNS genes was evaluated. After improvements to the method, 48 individuals with an unknown cause of SRNS were then examined in a subsequent diagnostic study. The analysis included 16 recessive SRNS genes and 5 dominant SRNS genes. A 10-fold primer multiplexing was applied, allowing PCR-based amplification of 474 amplicons in 21 genes for 48 DNA samples simultaneously. Forty-eight individuals were indexed in a barcode PCR, and high-throughput sequencing was performed. All disease-causing variants were confirmed via Sanger sequencing.

Results: The pilot study identified the genetic cause of disease in 42 of 48 (87.5%) of the affected individuals. The diagnostic study detected the genetic cause of disease in 16 of 48 (33%) of the affected individuals with a previously unknown cause of SRNS. Seven novel disease-causing mutations in PLCE1 (n=5), NPHS1 (n=1), and LAMB2 (n=1) were identified in <3 weeks. Use of this method could reduce costs to 1/29th of the cost of Sanger sequencing.

Conclusion: This highly parallel approach allows rapid (<3 weeks) mutation analysis of 21 genes known to cause SRNS at a greatly reduced cost (1/29th) compared with traditional mutation analysis techniques. It detects mutations in about 33% of childhood-onset SRNS cases.

Keywords: Nephrotic syndrome; Focal segmental glomerulosclerosis; Genetic renal disease; Human genetics; Molecular genetics.

755. Effect of Bosentan Therapy on Ventricular and Atrial Function in Adults With Eisenmenger Syndrome. A Prospective, Multicenter Study Using Conventional and Speckle Tracking Echocardiography

Mohamed Y. Abd El Rahman, Axel Rentzsch, Philipp Scherber, Siegrun Mebus, Oliver Miera, Günther Balling, Petra Böttler, Karl-Otto Dubowy, Birgit Farahwaschy, Alfred Hager, Joachim Kreuder, Brigitte Peters, Felix Berger, Ingram Schulze-Neick and Hashim Abdul-Khalik

Clinical Research in Cardiology, 103: 701-710 (2014) IF: 4.167

Background The effect of bosentan on the ventricular and atrial performance in patients with Eisenmenger syndrome is unclear. In adult patients with Eisenmenger syndrome, we aimed to evaluate the midterm effect of bosentan on physical exercise, ventricular and atrial function, and pulmonary hemodynamics.

Methods Forty adult patients before and after 24 weeks bosentan therapy underwent 6 min walk test, two-dimensional speckle tracking echocardiography, plasma NTproBNP measurement and cardiac catheterization.

Results After 24 weeks, bosentan therapy an improvement was observed regarding the 6 min walk distance from a median (quartile 1–quartile 3) of 382.5 (312–430) to 450 (390–510) m ($p = 0.0001$), NT-proBNP from 527.5 (201–1,691.25) to 369 (179–1,246) pg/ml ($p = 0.021$), right ventricular mean longitudinal systolic strain from 18 (13–22) to 19 (14.5–25) % ($p = 0.004$), left ventricular mean longitudinal systolic strain from 16 (12–21) to 17 (16–22) % ($p = 0.001$), right atrial mean peak longitudinal strain from 26 (18–34) to 28 (22–34) % ($p = 0.01$) and right atrial mean peak contraction strain from 11 (8–16) to 13 (11–16) % ($p = 0.005$). The invasively obtained Qp:Qs and Rp:Rs did not significantly change under bosentan therapy.

Conclusions In adult patients with Eisenmenger syndrome, bosentan therapy improves ventricular and atrial functions resulting in enhancement of physical exercise and reduction in the NT-proBNP level, while the pulmonary vascular resistance does not change substantially.

Keywords: Pulmonary arterial hypertension; Echocardiography myocardial contraction remodeling.

756. Analysis of the Gene Coding for Steroidogenic Factor 1 (SF1, NR5A1) in A Cohort of 50 Egyptian Patients With 46, XY Disorders of Sex Development

Sally Tantawy, Inas Mazen, Hala Soliman, Ghada Anwar, Abeer Atef, Mona El-Gammal, Ahmed El-Kotoury, Mona Mekkawy, Ahmad Torkey, Agnes Rudolf, Pamela Schruppf, Annette Grüters, Heiko Krude, Marie-Charlotte Dumargne, Rebekka Astudillo, Anu Bashamboo, Heike Biebermann and Birgit Köhler

European Journal of Endocrinology, 170: 759-767 (2014) IF: 3.686

Objective: Steroidogenic factor 1 (SF1, NR5A1) is a key transcriptional regulator of genes involved in the hypothalamic-pituitary-gonadal axis. Recently, SF1 mutations were found to be a frequent cause of 46,XY disorders of sex development (DSD) in humans. We investigate the frequency of NR5A1 mutations in an Egyptian cohort of XY DSD.

Design: Clinical assessment, endocrine evaluation and genetic analysis of 50 Egyptian XY DSD patients (without adrenal insufficiency) with a wide phenotypic spectrum.

Methods: Molecular analysis of NR5A1 gene by direct sequencing followed by in vitro functional analysis of the two novel missense mutations detected.

Results: Three novel heterozygous mutations of the coding region in patients with hypospadias were detected. p.Glu121AlafsX25 results in severely truncated protein, p.Arg62Cys lies in DNA-binding zinc finger, whereas p.Ala154Thr lies in the hinge region of SF1 protein. Transactivation assays using reporter constructs carrying promoters of anti-Müllerian hormone (AMH), CYP11A1 and TESCO core enhancer of Sox9 showed that p.Ala154Thr and p.Arg62Cys mutations result in aberrant biological activity of NR5A1. A total of 17 patients (34%) harboured the p.Gly146Ala polymorphism.

Conclusion: We identified two novel NR5A1 mutations showing impaired function in 23 Egyptian XY DSD patients with hypospadias (8.5%). This is the first study searching for NR5A1 mutations in oriental patients from the Middle East and Arab region with XY DSD and no adrenal insufficiency, revealing a frequency similar to that in European patients (6.5-15%). We recommend screening of NR5A1 in patients with hypospadias and gonadal dysgenesis. Yearly follow-ups of gonadal function and early cryoconservation of sperms should be performed in XY DSD patients with NR5A1 mutations given the risk of future fertility problems due to early gonadal failure.

Keywords: Steroidogenic factor-1; 46 Xy disorder of sex development.

757. A Double-Blind, Placebo-Controlled Phase II Study of the Efficacy and Safety of 2,2-Dimethylbutyrate (HQB-1001), an Oral Fetal Globin Inducer, in Sickle Cell Disease

Reid ME, El Beshlawy A, Inati A, Kutlar A, Abboud MR, Haynes J Jr, Ward R, Sharon B, Taher AT, Smith W, Manwani D and Ghalie RG

American J. of Hematology, 89 (7): 709-713 (2014) IF: 3.477

This placebo-controlled phase II study evaluated the pharmacodynamics, efficacy and safety of 2,2-dimethylbutyrate (HQB-1001), a fetal globin gene-inducing short-chain fatty acid derivative, administered orally at 15 mg/kg twice daily for 48 weeks in 76 subjects with sickle cell disease (SCD). The median age was 26 years (range: 12–55 years) and 37 subjects (49%) were treated previously with hydroxycarbamide.

Sixty subjects (79%) had Hb SS and 16 (21%) had S/b0 thalassemia. The study was terminated after a planned interim analysis showed no significant increase in fetal hemoglobin (Hb F) and a trend for more pain crises in the HQB-1001 group. For 54 subjects with Week 24 data, the mean absolute increase in Hb F was 0.9% (95% confidence interval (CI): 0.1–1.6%) with HQB-1001 and 0.2% (95% CI: 20.7–1.1%) with placebo.

Absolute increases in Hb F greater than 3% were noted in 9 of 38 subjects (24%) administered HQB-1001 and 1 of 38 subjects (3%) administered placebo. The mean changes in hemoglobin at Week 24 were comparable between the two groups. The mean annualized rate of pain crises was 3.5 with HQB-1001 and 1.7 with placebo. The most common adverse events in the HQB-1001 group, usually graded as mild or moderate, consisted of nausea, headache, vomiting, abdominal pain, and fatigue. Additional studies of HQB-1001 at this dose and schedule are not recommended in SCD. Intermittent HQB-1001 administration, rather than a daily regimen, may be better tolerated and more effective, as shown previously with arginine butyrate, and warrants further evaluation.

Keywords: 2,2-Dimethylbutyrate, Globin Inducer, Sickle Cell Disease.

758. Multicenter Validation of Spin-Density Projection-Assisted R2-Mri for the Noninvasive Measurement of Liver Iron Concentration

St Pierre TG, El-Beshlawy A, Elalfy M, Al Jefri A, Al Zir K, Daar S, Habr D, Kriemler-Krahn U and Taher A.

Magnetic Resonance In Medicine, 71: 2215-2223 (2014) IF: 3.398

Purpose: Magnetic resonance imaging (MRI)-based techniques for assessing liver iron concentration (LIC) have been limited by single scanner calibration against biopsy. Here, the calibration of spin-density projection-assisted (SDPA) R2-MRI (FerriScanVR) in iron-overloaded b-thalassemia patients treated with the iron chelator, deferasirox, for 12 months is validated.

Methods: SDPA R2-MRI measurements and percutaneous needle liver biopsy samples were obtained from a subgroup of patients (n=233) from the ESCALATOR trial. Five different makes and models of scanner were used in the study.

Results: LIC, derived from mean of MRI- and biopsy-derived values, ranged from 0.7 to 50.1mg Fe/g dry weight. Mean fractional differences between SDPA R2-MRI- and biopsy-measured LIC were not significantly different from zero. They were also not significantly different from zero when categorized for each of the Ishak stages of fibrosis and grades of necroinflammation, for subjects aged 3 to <8 years, or for each scanner model. Upper and lower 95% limits of agreement between SDPA R2-MRI and biopsy LIC measurements were 74 and 71%.

Conclusion: The calibration curve appears independent of scanner type, patient age, stage of liver fibrosis, grade of necroinflammation, and use of deferasirox chelation therapy, confirming the clinical usefulness of SDPA R2-MRI for monitoring iron overload.

Keywords: Deferasirox; Iron Overload; B-Thalassemia; Escalator; Biopsy.

759. Evidence for Self-Maintaining Pluripotent Murine Stem Cells in Embryoid Bodies

Attia WA, Abd El Aziz OM, Spitkovsky D, Gaspar JA, Dröge P, Suhr F, Sabour D, Winkler J, Meganathan K, Jagtap S, Khalil M, Hescheler J, Konrad Brockmeier, Agapios Sachinidis and Kurt Pfannkuche.

Stem Cell Reviews and Reports, 10: 1-15 (2014) IF: 3.214

Pluripotent stem cells have great potential for regenerative medicine; however, their clinical use is associated with a risk of tumor formation. We utilized pluripotent cells expressing green fluorescent protein and puromycin resistance under control of the Oct4 promoter to study the persistence of potential pluripotent cells under embryoid body (EB) culture conditions, which are commonly used to obtain organotypic cells. We found that i.) OCT4-expressing cells dramatically decrease during the first week of differentiation, ii.) the number of OCT4-expressing cells recovers from day 7 on, iii.) the OCT4-expressing cells are similar to embryonic stem cells grown in the presence of leukemia inhibitory factor LIF but express several markers associated with germ cell formation, such as DAZL and STRA-8 and iv.) the persistence of potentially pluripotent cells is independent of supportive cells in EBs. Finally, OCT4-expressing cells, isolated from EBs after 2-month of culture, were further maintained under feeder-free conditions in absence of LIF and continued to express OCT4 in 95 % of the population for at least 36 days. These findings point to an alternative state of stable OCT4 expression. In the frame of the landscape model of differentiation two attractors of pluripotency might be defined based on their different characteristics.

Keywords: OCT4; Pluripotency; Self-Renewal; Stemcells; Embryoid Bodies; Landscapemodel.

760. CD4+ CD25+ Cells in Type 1 Diabetic Patients With Other Autoimmune Manifestations

Dalia S. Abd Elaziz, Mona H. Hafez, Nermeen M. Galal, Safa S. Meshal and Aisha M. El Marsafy

Journal of Advanced Research, 5 (6): 647-655 (2014) IF: 3

The existence of multiple autoimmune disorders in diabetics may indicate underlying primary defects of immune regulation. The study aims at estimation of defects of CD4+ CD25+high cells among diabetic children with multiple autoimmune manifestations, and identification of disease characteristics in those children. Twenty-two cases with type 1 diabetes associated with other autoimmune diseases were recruited from the Diabetic Endocrine and Metabolic Pediatric Unit (DEMPU), Cairo University along with twenty-one normal subjects matched for age and sex as a control group. Their anthropometric measurements, diabetic profiles and glycemic control were recorded. Laboratory investigations included complete blood picture, glycosylated hemoglobin, antithyroid antibodies, celiac antibody panel and inflammatory bowel disease markers when indicated. Flow cytometric analysis of T-cell subpopulation was performed using anti-CD3, anti-CD4, anti-CD8, anti-CD25 monoclonal antibodies. Three cases revealed a proportion of CD4+ CD25+high below 0.1% and one case had zero counts. However, this observation did not amount to a significant statistical difference between the case and control groups neither in percentage nor absolute numbers. Significant statistical differences were observed between the case and the control groups regarding their height, weight centiles, as well as hemoglobin percentage, white cell counts and the absolute lymphocytic counts. We concluded that, derangements of CD4+ CD25+high cells may exist among diabetic children with multiple autoimmune manifestations indicating defects of immune controllers.

Keywords: CD4+ CD25+ Cells.

761. Profile of Cystic Fibrosis in A Single Referral Center in Egypt

Mona M. El-Falaki, Walaa A. Shahin, Noussa R. El-Basha, Aliaa A. Ali, Dina A. Mehany and Mona M. El-Attar

Journal of Advanced Research, 5: 563-568 (2014) IF: 3

It was generally believed that Cystic fibrosis (CF) is rare among Arabs; however, the few studies available from Egypt and other Arabic countries suggested the presence of many undiagnosed patients. The aim of the present study was to determine the frequency of CF patients out of the referred cases in a single referral hospital in Egypt. A total of 100 patients clinically suspected of having CF were recruited from the CF clinic of the Allergy and Pulmonology Unit, Children's Hospital, Cairo University, Egypt, throughout a 2 year period. Sweat chloride testing was done for all patients using the Wescor macroduct system for collection of sweat. Quantitative analysis for chloride was then done by the thiocyanate colorimetric method. Patients positive for sweat chloride (≥ 60 mmol/L) were tested for the $\Delta F508$ mutation using primer specific PCR for cystic fibrosis transmembrane conductance regulator (CFTR) gene. Thirty-six patients (36%) had a positive sweat chloride test. The main clinical presentations in patients were chronic cough in 32 (88.9%), failure to thrive in 27 (75%), steatorrhea in 24 (66.7%), and hepatobiliary involvement in 5 (13.9%). Positive

consanguinity was reported in 50% of CF patients. Thirty-two patients were screened for $\Delta F508$ mutation. Positive $\Delta F508$ mutation was detected in 22 (68.8%) patients, 8 (25%) were homozygous, 14 (43.8%) were heterozygous, and 10 (31.3%) tested were negative. CF was diagnosed in more than third of patients suspected of having the disease on clinical grounds. This high frequency of CF among referred patients indicates that a high index of suspicion and an increasing availability of diagnostic tests lead to the identification of a higher number of affected individuals.

Keywords: CF; Children; Sweat Chloride; $\Delta F508$ Mutation; Egypt.

762. MEFV Mutations in Egyptian Children With Systemic-Onset Juvenile Idiopathic Arthritis

Hala M. Lotfy, Manal E. Kandil, Marianne Samir Makboul Issac, Samia Salah, Nagwa Abdallah Ismail and Mohamed A. Abdel Mawla

Mol Diagn Ther, 18(5):: 549-557 (2014) IF: 2.589

Background and Objectives: Systemic-onset juvenile idiopathic arthritis (SoJIA) is a chronic auto-inflammatory disease of childhood, with a complex genetic trait, which is characterized by arthritis associated with systemic manifestations. Familial Mediterranean fever (FMF) is another auto-inflammatory disorder that is monogenic. There are speculations as to whether Mediterranean fever (MEFV) mutations are among the genetic determinants of SoJIA. Our aim was to explore the frequency and clinical significance of MEFV mutations in Egyptian SoJIA patients. A group of healthy children were assigned to the control group in an attempt to estimate the carrier rate of MEFV mutations in Egypt.

Methods: Eighty-four children were recruited in this study; 54 children, age (mean \pm standard deviation; 8.31 ± 2.85 years), diagnosed as having SoJIA with no typical symptoms of FMF; 30 healthy age- and gender-matched children served as the control group. All recruited children were screened for 12 common MEFV mutations using a reverse hybridization assay of biotinylated PCR products.

Results: SoJIA patients had a significantly higher frequency of MEFV mutations (66.7 %) than in the healthy control population (16.7 %). V726A was the leading mutation in SoJIA patients, with an allelic frequency of 15.74 %, followed by E148Q, with an allelic frequency of 7.4 %. Children who were carriers of MEFV mutations had an 18 times higher risk of developing SoJIA than wild-type carriers [odds ratio 18.0 (95 % CI 5-69), $P < 0.01$]. E148Q was the leading mutation, present in 13.3 % of healthy controls.

Conclusion: These findings suggest that MEFV mutations may be responsible for auto-inflammatory diseases other than FMF, and patients with SoJIA, especially those with a positive family history of FMF or SoJIA, should be screened for MEFV mutations in countries where FMF is frequent.

Keywords: Systemic-Onset Juvenile Idiopathic Arthritis.

763. Applicability and Efficacy of A Model for Prevention of Perinatal Transmission of Hepatitis B Virus Infection: Singlecenter Study in Egypt

Hanaa M El-Karaksy, Lamiaa M Mohsen, Doa'a A Saleh, Mona S Hamdy, Noha A Yassin, Mohamed Farouk, Mohamed E Salit and Mortada H El-Shabrawi

World J. of Gastroenterology, 20(45): 17075-17083 (2014) IF: 2.433

Aim: To identify possible maternal risk factors for hepatitis B virus (HBV) acquisition and assess the efficacy of immunoprophylaxis given to infants born to hepatitis B virus surface antigen (HBsAg) positive mothers.

Methods: Screening of 2000 pregnant females was carried out using rapid test and confirmed by enzyme immunoassay. A questionnaire consisting of 20 questions about the possible risk factors for acquisition of HBV infection was filled for every pregnant HBsAg positive female in addition to at least 2 pregnant HBsAg negative females for each positive case. Infants of HBsAg positive women were offered passive and active immunoprophylaxis within the 1st 48 h after birth, in addition to 2nd and 3rd doses of HBV vaccine after 1 and 6 mo respectively. Infants were tested for HBsAg and hepatitis B surface antibodies (HBsAb) at six months of age.

Results: HBsAg was confirmed positive in 1.2% of tested pregnant women. Risk factors significantly associated with HBV positivity were; history of injections (OR= 5.65), history of seeking medical advice in a clinic (OR= 7.02), history of hospitalization (OR = 6.82), history of surgery (OR = 4) and family history of hepatitis (OR= 3.89) (P < 0.05). Dropout rate was 28% for HBsAg women whose rapid test was not confirmed and could not be reached to provide immunoprophylaxis for their newborns. Immunoprophylaxis failure was detected in only one newborn (3.7%) who tested positive for HBsAg at 6 mo of age; and vaccine failure (seronegative to HBsAb after 4 doses of the vaccine) was detected in another one (3.7%). The success rate of the immunoprophylaxis regimen was 92.6%.

Conclusion: This pilot study shows that a successful national program for prevention of perinatal transmission of HBV needs to be preceded by an awareness campaign to avoid a high dropout rate.

Keywords: Egypt; Hepatitis B Virus; Hepatitis B Virus surface Antigen Positive Mothers; Immunoprophylaxis; Perinatal Transmission.

764. Safety and Efficacy of Hansenula -Derived Pegylated-Interferon Alpha-2A and Ribavirin Combination in Chronic Hepatitis C Egyptian Children

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World Journal Gastroenterol, 20(16): 4681-4691 (2014) IF: 2.433

Aim: To investigate the safety and efficacy of a Hansenula-derived PEGylated (polyethylene glycol) interferon (IFN)-alpha-2a (Reiferon Retard) plus ribavirin customized regimen in treatment-naïve and previously treated (non-responders and relapsers) Egyptian children with chronic hepatitis C infection.

Methods: Forty-six children with chronic hepatitis C virus (HCV) infection were selected from three tertiary pediatric hepatology centers. Clinical and laboratory evaluations were undertaken. Quantitative polymerase chain reaction (PCR) for HCV-RNA was performed before starting treatment, and again at 4, 12, 24, 48, 72 wk during treatment and 6 mo after treatment cessation. All patients were assigned to receive a weekly subcutaneous injection of PEG-IFN-alpha-2a plus daily oral ribavirin for 12 wk. Thirty-four patients were treatment-naïve and 12 had a previous

treatment trial. Patients were then divided according to PCR results into two groups. Group I included patients who continued treatment on a weekly basis (7-d schedule), while group II included patients who continued treatment on a 5-d schedule. Patients from either group who were PCR-negative at week 48, but had at least one PCR-positive test during therapy, were assigned to have an extended treatment course up to 72 wk. The occurrence of adverse effects was assessed during treatment and follow up. The study was registered at www.ClinicalTrials.gov (NCT02027493).

Results: Only 11 out of 46 (23.9%) patients showed a sustained virological response (SVR), two patients were responders at the end of treatment; however, they were lost to follow up at 6 mo post treatment. Breakthrough was seen in 18 (39.1%) patients, one patient (2.17%) showed relapse and 14 (30.4%) were non-responders. Male gender, short duration of infection, low viral load, mild activity, and mild fibrosis were the factors related to a better response. On the other hand, patients with high viral load and absence of fibrosis failed to respond to treatment. Before treatment, liver transaminases were elevated. After commencing treatment, they were normalized in all patients at week 4 and were maintained normal in responders till the end of treatment, while they increased again significantly in non-responders (P = 0.007 and 0.003 at week 24 and 72 respectively). The 5-d schedule did not affect the response rate (1/17 had SVR). Treatment duration (whether 48 wk or extended course to 72 wk) gave similar response rates (9/36 vs 2/8 respectively; P = 0.49). Type of previous treatment (short acting IFN vs PEG-IFN) did not affect the response to retreatment. On the other hand, SVR was significantly higher in previous relapsers than in previous non-responders (P = 0.039). Only mild reversible adverse effects were observed and children tolerated the treatment well.

Conclusion: Reiferon Retard plus ribavirin combined therapy was safe. Our customized regimen did not influence SVR rates. Further trials on larger numbers of patients are warranted.

Keywords: Children; Chronic Hepatitis C; Hansenula; Polymorpha; Pegylated Interferon; Response Rate; Ribavirin; Treatment.

765. Continuation of Deferiprone Therapy in Patients With Mild Neutropenia May Not Lead to A More Severe Drop in Neutrophil Count

El-Beshlawy AM, El-Alfy MS, Sari TT, Chan LL and Tricta F.

European Journal of Haematology, 92: 337-340 (2014) IF: 2.414

Approximately 6% of patients with thalassemia receiving deferiprone develop neutropenia. Present practice is to monitor absolute neutrophil count (ANC) weekly and to interrupt treatment at the first sign of neutropenia, lest continuation lead to progressive neutrophil reduction. In a 6-month study evaluating the safety and efficacy of a liquid form of deferiprone in 100 children, ANC was initially checked weekly for all patients. For individuals experiencing mild neutropenia, deferiprone was continued but monitoring was increased to daily until resolution. Therapy was to be suspended only if the episode was prolonged or if it worsened. Four patients experienced single episodes of mild neutropenia, and two others each experienced two episodes. All eight episodes resolved within 4–7 d despite continued therapy. (One patient later developed agranulocytosis and had treatment terminated.) This study showed that not all cases of mild neutropenia during deferiprone therapy develop into

agranulocytosis, and suggests that many may not be caused by deferiprone. Transient declines in ANC to levels defined as neutropenic are common even in healthy individuals, particularly children; and it could be that the frequent monitoring of ANC mandated during deferiprone therapy may reveal cases of transient neutropenia that would otherwise have gone undetected and resolved on their own without clinical consequences. In patients with thalassemia, several factors increase the probability of a transient fall in ANC. These findings raise the question of whether deferiprone should be routinely stopped in cases of mild neutropenia, provided that such patients have their ANC monitored more frequently during the neutropenic episode.

Keywords: Agranulocytosis; Deferiprone; Neutropenia; Thalassemia.

766. Low Prevalence of Cardiac Siderosis in Heavily Iron Loaded Egyptian Thalassemia Major Patients

El Beshlawy A, El Tagui M, Hamdy M, El Ghamrawy M, Azim KA, Salem D, Said F, Samir A, St Pierre T and Pennell DJ.

Annals of Hematology, Volume 93, Issue 3: 375-379 (2014) IF: 2.396

Myocardial siderosis in thalassemia major remains the leading cause of death in developing countries. Once heart failure develops, the outlook is usually poor with precipitous deterioration and death. Cardiovascular magnetic resonance (CMR) can measure cardiac iron deposition directly using the magnetic relaxation time T2*. This allows earlier diagnosis and treatment and helps to reduce mortality from this cardiac affection. This study aims to determine the prevalence of cardiac siderosis in Egyptian patients who are heavily iron loaded and its relation to liver iron concentration, serum ferritin, and left ventricular ejection fraction. Eighty-nine β -thalassemia patients receiving chelation therapy (mean age of 20.8 ± 6.4 years) were recruited in this study. Tissue iron levels were determined by CMR with cardiac T2* and liver R2*. The mean ± standard deviation (range) of cardiac T2* was 28.5 ± 11.7 ms (4.3 to 53.8 ms), the left ventricular ejection fraction (LVEF) was 67.7 ± 4.7 % (55 to 78 %), and the liver iron concentration (LIC) was 26.1 ± 13.4 mg Fe/g dry weight (dw) (1.5 to 56 mg Fe/g dw). The mean serum ferritin was 4,540 ± 8,847 ng/ml (533 to 22,360 ng/ml), and in 83.2 %, the serum ferritin was >2,500 ng/ml. The prevalence of myocardial siderosis (T2* of <20 ms) was 24.7 % (mean age 20.9 ± 7.5 years), with mean T2* of 12.7 ± 4.4 ms, mean LVEF of 68.6 ± 5.8 %, mean LIC of 30.9 ± 13 mg Fe/g dw, and median serum ferritin of 4,996 ng/ml. There was no correlation between T2* and age, LVEF, LIC, and serum ferritin (P = 0.65, P = 0.085, P = 0.99, and P = 0.63, respectively). Severe cardiac siderosis (T2* of <10 ms) was present in 7.9 %, with a mean age of 18.4 ± 4.4 years. Although these patients had a mean T2* of 7.8 ± 1.7 ms, the LVEF was 65.1 ± 6.2 %, and only one patient had heart failure (T2* of 4.3 ms and LVEF of 55 %). LIC and serum ferritin results were 7,098 ± 8 ng/g and 7,200 ± 6,950 ng/ml, respectively. In this group of severe cardiac siderosis, T2* was also not correlated to age (P = 0.15), LVEF (P = 0.14), LIC (P = 0.97), or serum ferritin (P = 0.82). There was a low prevalence of myocardial siderosis in the Egyptian thalassemia patients in spite of very high serum ferritin and high LIC. T2* is the best test that can identify at-risk patients who can be managed with optimization of their chelation therapy. The possibility of a genetic component for the resistance to cardiac iron loading in our population should be considered.

Keywords: Thalassemia; Cardiac Siderosis; Cardiac Magnetic Resonance; Egypt; Liver Iron Concentration.

767. Response to Hydroxycarbamide in Pediatric β -Thalassemia Intermedia: 8 Years' Follow-Up in Egypt

El-Beshlawy A, El-Ghamrawy M, EL-Ela MA, Said F, Adolf S, Abdel-Razek AR, Magdy RI and Abdel-Salam A.

Annals of Hematology, 93: 2045-2050 (2014) IF: 2.396

Hydroxycarbamide (hydroxyurea or HU) has been shown to increase fetal hemoglobin (HbF) in patients with β -thalassemia intermedia (TI). The reported effects of HU in increasing the total hemoglobin (Hb) have been inconsistent. Studies of long-term therapy with HU in pediatric TI are rather uncommon. A retrospective observational study was carried out to evaluate the clinical responses to HU in Egyptian patients with β -TI. One hundred patients; children (n = 82, mean age 9.9 ± 4.1 years) and adults (n = 18) were studied for the mean Hb, HbF%, median serum ferritin, transfusion history, and splenic size before and after HU therapy (mean dose 20.0 ± 4.2 mg/kg/day, range 10-29 mg/kg/day) over a follow-up period 4 to 96 months (mean 35.4 ± 19.2 months). Molecular studies were also done for group of patients (n = 42). The overall response rate to HU was 79 %; 46 % were minor responders (with a reduction in transfusion rate by 50 % or more and/or an increase in their total hemoglobin level by 1-2 g/dl) and 33 % major responders (becoming transfusion-free and/or having an increase in total hemoglobin level by >2 g/dl). Mean hemoglobin increased among responders from 6.9 ± 0.9 g/dl to 8.3 ± 1.4 g/dl (p < 0.001). A significant rise in mean HbF (27.0 vs. 42.5 %; p < 0.011) and a decrease in median serum ferritin (800 vs. 644 ng/ml; p < 0.001) were also observed among responders (n = 45). Transfusions stopped in 44 % of pretreatment frequently transfused responders (n = 11/25). Splenic size decreased in 37 % of patients (n = 30/81). The predominant β -thalassemia mutation was 1-6 (T > C) in 32/42 (76 %) of studied patients; 28/32 were responders. Bivariate analysis showed no predictors of response as regards sex, pediatric and adult age, splenic status, or genotype. Hydroxycarbamide is a good therapeutic modality in the management of pediatric as in adult TI patients. It can minimize the need for blood transfusion, concomitant iron overload, and blood-borne viral transmission especially in developing countries like Egypt.

Keywords: Hydroxycarbamide; Hydroxyurea; Thalassemia Intermedia (Ti); Children; Egypt.

768. The 6-Min Walk Test: an Independent Correlate of Elevated Tricuspid Regurgitant Jet Velocity in Children and Young Adult Sickle Cell Patients

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Ann Hematol, 93: 1131-1138 (2014) IF: 2.396

Elevation of echocardiography-determined tricuspid regurgitant jet velocity (TRV) predicts high systolic pulmonary artery pressure. The present study tested the hypotheses that elevated tricuspid regurgitant jet velocity is associated with both hemolysis and hypoxia and abnormal 6-min walk test (6MWT) results. This study aims to correlate elevated TRV with different clinical laboratory findings and 6MWT and to find the independent

predictors of increased TRV. A prospective study of 80 patients aged 5–25 years old with sickle cell disease (SCD) under basal conditions and 40 matched controls was conducted. Hemolytic analysis was assessed by the levels of lactate dehydrogenase, serum bilirubin, and reticulocyte count. Oxygen saturation determination using pulse oximeter and 6MWT were done. The overall prevalence of elevated TRV (≈ 2.5 m/s) was 28.75%. Associated risk factors were older age ($r=0.28$, $p=0.01$), longer duration of disease ($r=0.25$, $p=0.025$), higher reticulocytic count ($r=0.344$, $p=0.002$), lower O₂ saturation ($r=-0.574$, $p=0.0001$), and shorter walked distance in 6MWT ($r=-0.75$, $p=0.0001$). By multivariate logistic analysis, only the distance walked during 6MWT was the independent correlate of elevated TRV (odds ratio=0.85; 95% CI=0.74 to 0.98 $p=0.033$).

The study provides evidence for independent association of TRV with abnormal 6MWT results. The 6-min walk test can be used as noninvasive adjuvant tool for functional capacity assessment of SCD patients with elevated TRV.

Keywords: Sickle cell disease; Pulmonary hypertension; Hemolysis; Oxygen saturation; Tricuspid regurgitant jet velocity; 6-Min walk test.

769. Selective Screening for Inborn Errors of Metabolism by Tandem Mass 2 Spectrometry in Egyptian Children: A 5 Year Report

Selim LA, Hassan SA, Salem F, Orabi A, Hassan FA, El-Mougy F, Mahmoud IG, El-Badawy A, Girgis MY, Elmonem MA and Mehaneey D

Clinical Biochemistry, 47(9): 823-828 (2014) IF: 2.229

Objective: In order to enhance awareness and promote registry for inborn errors of metabolism (IEMs) in Egypt, we aimed to evaluate the prevalence and main clinical findings of IEMs detectable by tandem mass spectrometry (MS/MS) among high risk pediatric patients presenting to our tertiary care facility at Cairo University Children's Hospital over a period of 5 years and to compare the disease burden in Egypt in the absence of a national screening program for inherited metabolic disorders with other populations.

Methods: During this period 3380 Egyptian children were suspected of having IEMs based on clinical/laboratory presentation and were analyzed by MS/MS. Confirmatory testing was performed according to flagged analyte by MS/MS using a different sample type such as plasma or urine or by a different technique such as GC/MS.

Results: A relatively high number of patients (203/3380 (6%)) were confirmed with 17 different types of IEMs. Averages for age at diagnosis for different disorders ranged from 2.5 months to 6.6 years with general developmental delay and irreversible neurological damage being the most common presenting features (75.9% and 65.5%, respectively). Amino acid disorders (127/203 (62.6%)), mainly phenylketonuria (100/203 (49.3%)), were the most encountered, followed by organic acidemias (69/203 (34%)), while fatty acid oxidation defects (7/203 (3.4%)) were relatively rare. 88% of patients were born to consanguineous parents.

Conclusions: The development of a nationwide screening program for IEMs is mandatory for early detection of these potentially treatable disorders, prompt and properly timed therapeutic intervention and prevention of the devastating neurological outcomes.

Keywords: Children; Inborn errors; Metabolic disorders; Selective screening; Tandem mass spectrometry.

770. Nesfatin-1 in Childhood and Adolescent Obesity and Its Association With Food Intake, Body Composition and Insulin Resistance.

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Regulatory Peptides, 188: 21-24 (2014) IF: 2.014

Nesfatin-1 is an anorexigenic peptide that controls feeding behavior and glucose homeostasis. However, there is little data that exists regarding nesfatin-1 secretion in obese children and young adolescents. The aim of this study is to investigate serum nesfatin-1 in childhood and adolescent obesity and to study potential correlations with food intake, anthropometric indices, body composition and insulin resistance. Forty obese children and adolescents and 40 healthy control subjects were studied. Anthropometric measurements were assessed, dietary food intake was evaluated based on 3-days food record and body composition indices were evaluated using bioelectrical impedance analysis. Lipid profile, fasting blood sugar, fasting insulin and HOMA-IR were measured. Fasting serum nesfatin-1 was quantitatively assayed by ELISA. Serum nesfatin-1 was significantly higher in obese group (2.49 ± 1.96 ng/ml) than in control group (0.70 ± 0.81 ng/ml), $P=0.001$. Positive correlations with serum insulin ($P=0.001$), HOMA-IR ($P=0.000$), BMI-SDS ($P=0.04$), body fat % ($P=0.000$), fat mass ($P=0.000$), fat free mass ($P=0.03$), CHO % ($P=0.000$), and saturated fat % ($P=0.01$) were found. While significant negative correlation with protein % ($P=0.000$) was observed. In conclusion, our results denote that nesfatin-1 might have an important role in regulation of food intake and pathogenesis of insulin resistance in obese children and young adolescents.

Keywords: Body composition; Food intake; Insulin resistance; Nesfatin; Obesity.

771. Diagnosis of Gastrointestinal Basidiobolomycosis: A Mini-Review

Mortada Hassan Fakhri El-Shabrawi

Mycoses, 57: 138-143 (2014) IF: 1.805

Basidiobolus ranarum (Entomophthoromycotina) very rarely affects the gastrointestinal (GI) tract. To date, reported paediatric GI basidiobolomycosis cases are 27 worldwide; 19 from Saudi Arabia and 8 from other parts of the world. Often these cases present a diagnostic dilemma, are prone to misdiagnosis and lack of disease confirmation by proper molecular methodologies. The fungal mass removed by surgery is usually sent for conciliar histopathology, isolation by fungal cultures and final molecular testing for basidiobolomycosis. The incidence of basidiobolomycoses, their predisposing factors and the molecular diagnosis of the fungus causing the disease in combination with a phylogenetic framework are reviewed.

Keywords: 18S Rna; Gastrointestinal basidiobolomycosis; Identification; Molecular typing; Splendore–hoeppli Phenomenon.

772. Entomophthoromycosis: A Challenging Emerging Disease

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Mycoses, 57: 132-137 (2014) IF: 1.805

Entomophthoromycosis is a rare fungal infection that may affect immunocompetent hosts; predominantly in tropical and subtropical regions. Recently, the importance of this emerging mycosis has increased and the scope of its manifestations has been expanded. These manifestations; however, may masquerade as other clinical entities. Prompt diagnosis of this infection requires a high index of suspicion. Although histopathological examination and cultures are the gold standard diagnostic tools; molecular diagnosis is now available and started to play an important role. The cornerstone treatment is prolonged anti-fungal therapy along with surgical debridement. More awareness of this mycosis is warranted for definitive diagnosis and implementation of early proper therapeutic strategies.

Keywords: Entomophthoromycosis, Basidiobolomycosis, Condiobolomycosis, Zygomycosis, Emerging Disease, Fungal Infection.

773. Urinary 6-Sulphatoxymelatonin Levels and Sleep Disorders in Children With Migraine

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Journal of Child Neurology, 29: 947-951 (2014) IF: 1.666

We conducted the present study to assess melatonin secretion in a sample of children with migraine, to describe their sleep patterns and problems, and to examine the impact of sleep problems on migraine disability. The parents of 18 children with migraine completed the Children's Sleep Habits Questionnaire and Pediatric Migraine Disability Assessment Score in Arabic. The parents of 18 healthy controls also completed the Children's Sleep Habits Questionnaire. Urinary 6-sulphatoxymelatonin levels were determined with the enzyme-linked immunosorbent assay method. There was no significant difference in urinary 6-sulphatoxymelatonin between the migraine and control groups ($Z = -0.127$, $P = .889$). There were no significant differences between groups in Children's Sleep Habits Questionnaire subscales or total scores. There were significant correlations between bedtime resistance, parasomnias subscales, and migraine disability. Our findings indicate that nocturnal production of melatonin is not reduced in children with migraine, and sleep disturbances impact the degree of migraine disability.

Keywords: 6-Sulphatoxymelatonin; Migraine; Sleep.

774. MEFV Gene Mutations in Egyptian Children With Henoch-Schonlein Purpura

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Pediatric Rheumatology, 18 (5): 549-557 (2014) IF: 1.622

Background: Due to an increased frequency of vasculitis in FMF patients, many investigators have studied MEFV mutations in patients with HSP. The aim of the study is to investigate the frequency and clinical significance of MEFV mutations in Egyptian children with Henoch-Schonlein purpura (HSP). Investigating MEFV mutations in controls may help in estimating the prevalence of MEFV mutation carrier rate in Egyptian children.

Methods: The study enrolled 90 individuals, sixty children with Henoch-Schonlein purpura (HSP), together with 30 sex- and age-matched apparently healthy controls. The entire study group was screened for 12 common MEFV

mutations using a reverse hybridization assay of biotinylated PCR products.

Results: Patients with HSP had a significantly higher frequency of MEFV mutations (61.7%), when compared to the apparently healthy control population (36.7%). V726A was the most frequent mutation with an allelic frequency of 10.8%. Ninety-one percent of patients with MEFV mutations were heterozygous for one mutation, while 8.1% had a compound heterozygous MEFV gene mutations. The mutation V726A, followed by E148Q, were the leading mutations, present in 16.6% and in 13.3% of controls.

Conclusions: MEFV mutations may be related to HSP susceptibility in children. The mutations were not associated with any clinical and laboratory manifestations. Screening for MEFV mutations in larger number of HSP children may be beneficial to evaluate any possible relationship between certain types of MEFV mutations and HSP, and compare the HSP MEFV mutations to the types of MEFV mutations associated with FMF.

Keywords: Familial Mediterranean Fever; Henoch-Schonlein Purpura (Hsp); Mefv; Mutations.

775. Altered Right Ventricular Function in the Long-Term Follow-Up Evaluation of Patients After Delayed Aortic Reimplantation of the Anomalous Left Coronary Artery from the Pulmonary Artery

Rita Schuck, Mohamed Y. Abd El Rahman, Axel Rentzsch, Wei Hui, Yuguo Weng, Vladimir Alexi-Meskishvili, Peter E. Lange, Felix Berger and Hashim Abdul-Khalik

Pediatric Cardiology, 35: 530-535 (2014) IF: 1.55

This study aimed to evaluate regional and global ventricular functions in the long term after aortic reimplantation of the anomalous left coronary artery from the pulmonary artery (ALCAPA) and to assess whether the time of surgical repair influences ventricular performance.

The study examined 20 patients with a median age of 15 years (range 3–37 years) who had a corrected ALCAPA and 20 age-matched control subjects using echocardiography and tissue Doppler imaging (TDI). The median follow-up period after corrective surgery was 6 years (range 2.6–15 years). Seven patients underwent surgery before the age of 3 years (early-surgery group), whereas 13 patients had surgery after that age (late-surgery group).

The TDI-derived myocardial strain of the interventricular septum (IVS), lateral wall of the left ventricle (LV), and lateral wall of the right ventricle (RV) in the basal and mid regions were examined, and a mean was calculated. The pulsed Doppler-derived Tei index was used to assess global left ventricular function.

No significant differences were found between the early-surgery group and the control group regarding the regional myocardial strain or the Tei index. Compared with the early-surgery group, the late-surgery group had a significantly higher Tei index (mean 0.37; range 0.31–0.42 vs. mean 0.52; range 0.39–0.69; $p < 0.005$), a lower strain percentage of the lateral wall of the LV (mean 29; range 17–30 vs. mean 9; range 7–23), IVS (mean 23; range 21–31 vs. mean 19; range 13–25), and lateral wall of the RV (mean 23; range 21–31 vs. mean 19; range 13–25). The age at operation correlated significantly with the Tei index ($r = 0.84$, $p < 0.001$) and inversely with the mean strain of the lateral wall of the LV ($r = -0.53$, $p = 0.028$), IVS ($r = -0.68$, $p = 0.003$), and lateral wall of the RV ($r = -0.68$, $p = 0.003$).

At the midterm follow-up evaluation after corrective surgery of ALCAPA, not only the left but also the right ventricular function seemed to be affected in patients with delayed diagnosis and late surgical repair but preserved among the younger patients with early diagnosis and corrective surgery.

Keywords: Aortic Reimplantation; Ventricular Function; anomalous left coronary artery from the pulmonary artery; ALCAPA; Tissue Doppler Imaging (TDI).

776. Pulmonary Functions Before and After Pediatric Cardiac Surgery

Agha H, El Heinady F, El Falaky M and Sobih A.

Pediatric Cardiology, 35: 542-549 (2014) IF: 1.55

This study aimed to assess pulmonary functions before and after cardiac surgery in infants with congenital heart diseases and pulmonary overflow and to clarify which echocardiographic parameter correlates best with lung mechanics. Between 2008 and 2009, 30 infants with left-to-right shunt congenital cyanotic heart diseases who had indications for reparative surgery of these lesions were assessed by echocardiography and infant pulmonary function tests before the operation and 6 months afterward.

Tests using baby body plethysmography were performed to assess the following infant pulmonary functions: tidal volume, respiratory rate, respiratory system compliance (Cr_s) and respiratory system resistance, functional residual capacity (FRC), and airway resistance. The mean age of the patients was 10.47 ± 3.38 months, and their mean weight was 6.81 ± 1.67 kg. Ventricular septal defect and combined lesions were the predominant cardiac diseases (26.7%). Comparison of the infant pulmonary function tests showed a highly significant improvement in all the parameters between the preoperative and 6-month postoperative visits (p < 0.0001). Systolic pulmonary artery pressure had a statistically significant negative correlation with Cr_s (r = -0.493, p = 0.006) and a positive correlation with FRC (r = 0.450, p = 0.013). The findings showed that Cr_s had a statistically significant negative correlation with the pulmonary artery size (r = -0.398, p = 0.029) and the left atrium size (r = -0.395, p = 0.031), whereas the pulmonary artery size had a statistically positive correlation with effective resistance (r = 0.416, p = 0.022) and specific effective resistance (r = 0.604, p = 0.0001). Surgical correction of left-to-right shunt congenital heart diseases had a positive impact on lung compliance, airway resistance, and FRC. Noninvasive echocardiographic parameters assessing pulmonary vascular engorgement and pulmonary artery pressure were closely related to these infant pulmonary function test indexes.

Keywords: Congenital Heart Diseases; Left-To-Right Shunt; Pulmonary Function Tests; Systolic Pulmonary Artery Pressure.

777. Clinical, Neuroimaging, and Genetic Characteristics of Megalencephalic Leukoencephalopathy With Subcortical Cysts in Egyptian Patients

Mahmoud IG, Mahmoud M, Refaat M, Girgis M, Waked N, El Badawy A, Selim L, Hassan S and Abdel Aleem AK

Pediatric Neurology, 50 (2): 140-148 (2014) IF: 1.504

Background: Megalencephalic leukoencephalopathy with subcortical cysts (MLC) is a rare and genetically heterogeneous cerebral white matter disease. Clinically, it is characterized by

macrocephaly, developmental delay, and seizures. We explore the clinical spectrum, neuroimaging characteristics, and gene involvement in the first patients with megalencephalic leukoencephalopathy with subcortical cysts described from Egypt.

Patients: Six patients were enrolled from three unrelated families. Patient inclusion criteria were macrocephaly, developmental delay, normal urinary organic acids, and brain imaging of diffuse cerebral white matter involvement. Direct sequencing of the MLC1 gene in patients' families and GliaCAM in one questionable case was performed using BigDye Terminator cycle sequencing.

Results: Clinical heterogeneity, both intra- and interfamilial, was clearly evident. Developmental delays ranged from globally severe or moderate to mild delay in achieving walking or speech. Head circumference above the ninety-seventh percentile was a constant feature. Neuroimaging featured variability in white matter involvement and subcortical cysts. However, findings of posterior fossa changes and brain stem atrophy were frequently (66.6%) identified in these Egyptian patients. Discrepancy between severe brain involvement and normal mental functions was evident, particularly in patients from the third family. MLC1 mutations were confirmed in all patients. Deletion/insertion mutation in exon 11 (c.908-918delinsGCA, p.Val303 Gly fsX96) was recurrent in two families, whereas a missense mutation in exon 10 (c.880 C > T, p.Pro294Ser) was identified in the third family.

Conclusions: This report extends our knowledge of the clinical and neuroimaging features of megalencephalic leukoencephalopathy with subcortical cysts. It confirms the apparent lack of selective disadvantage of MLC1 mutations on gamete conception and transmission as supported by the presence of multiple affected siblings in Egyptian families.

Keywords: GliaCAM gene; MLC1 gene; Van der Knaap disease; developmental delay; macrocephaly; megalencephalic leukodystrophy; subcortical cysts.

778. Neutrophil CD64 as A Diagnostic Marker of Sepsis in Neonates

Sanaa Elawady, Shahira K. Botros, Ashraf E. Sorour, Eman Abdel Ghany, Gamal Elbatran and Raghdaa Ali

Journal of Investigative Medicine, 62: 644-649 (2014) IF: 1.503

Background: Sepsis in neonates hospitalized in the neonatal intensive care unit is a global problem and is a significant contributor to morbidity and mortality. Neutrophil surface CD64, the high-affinity Fc receptor, is quantitatively up-regulated during infection and sepsis.

Objective: Our goal in this prospective study was to measure the neutrophil CD64 in blood as an adjunct to our previously validated hematologic scoring system for detecting neonatal sepsis.

Methods: A prospective study enrolled newborns with documented sepsis (n = 25), clinical sepsis (n = 25), and control newborns (n = 25). C-reactive protein, neutrophil CD64, complete blood counts, and blood cultures were taken. Neutrophil CD64 was analyzed by flow cytometry.

Results: CD64 was significantly elevated in the groups with documented and clinical sepsis (P < 0.001). CD64 had a sensitivity of 96%, a specificity of 100%, a positive predictive value of 96.2%, and a negative predictive value of 100% with a

cutoff value of 45.8% and 46.0% in the confirmed and the clinical sepsis groups, respectively.

Conclusions: CD64 expression on neutrophils increases significantly in neonates with sepsis and can be considered a useful diagnostic marker for early diagnosis of neonatal infection as a single determination compared with other inflammatory markers.

Keywords: Neutrophil; CD64; Neonatal sepsis.

779. Soluble Adhesion Molecules as Markers of Native Arteriovenous Fistula Thrombosis in Children on Uremia

Fadel FI, Elshamaa MF, Nabhan MM, Essam RG, Kantoush N, El Sonbaty MM, Raafat M and Abd-El Haleem DA

Blood Coagulation and Fibrinolysis, 25: 675-682 (2014) IF: 1.38

Vascular access represents a lifeline for children undergoing hemodialysis. A failure of vascular access among patients receiving regular hemodialysis is associated with increased morbidity, mortality and costs. We assessed the possibility of using soluble adhesion molecules as reliable predictors of vascular access failure in children on hemodialysis. Moreover, we evaluated whether there is an association among the different studied adhesion molecules in hemodialysis patients with thrombosed and non-thrombosed arteriovenous fistula fistulas (AVFs). This study included 55 hemodialysis children, 36 with good access and 19 with access failure, and 20 healthy volunteers. Forty-four patients had native AVFs and 11 patients had tunneled permanent catheter (11 with thrombosed and 33 with non-thrombosed AVFs). Serum-soluble vascular cell adhesion molecule-1 (sVCAM-1), soluble intercellular adhesion molecule-1 (sICAM-1), soluble E-selectin (sE-selectin) and soluble P-selectin (sP-selectin) were measured using ELISA technique. A significant increase was found in the levels of sVCAM-1, sICAM-1, sE-selectin and sP-selectin versus controls and all hemodialysis patients, hemodialysis patients with good access and hemodialysis patients with access failure ($P=0.001$ for sVCAM-1 and sICAM-1 and $P=0.0001$ for sE-selectin and sP-selectin). A significant increase was found in the levels of sVCAM-1, sE-selectin and sP-selectin in both chronic hemodialysis patients with thrombosed and non-thrombosed native AVFs versus controls ($P=0.0001$ for all parameters). There was significant difference between both chronic hemodialysis patients with thrombosed and non-thrombosed native AVFs as regard to sVCAM-1 (54.64 ± 30.82 versus 25.69 ± 27.96 ng/ml, $P=0.04$). Both sICAM-1 and sP-selectin were positively correlated with the erythropoietin (EPO) dose in hemodialysis children ($r=0.31$, $P=0.04$ and $r=0.32$, $P=0.04$, respectively). A significant positive association was found between E-selectin and sP-selectin in hemodialysis patients with thrombosed AVFs ($r=0.83$, $P=0.04$). There was a significant correlation between sVCAM-1 and EPO dose in thrombosed AVF group ($r=0.84$, $P=0.01$). The assessment of serum sVCAM-1 might be useful for the identification of the chronic hemodialysis patients at an increased risk for native AVFs thrombosis. The role of EPO in vascular access failure should be taken into consideration. The clinical relevance of these observations warrants further investigations.

Keywords: Adhesion Molecules; Hemodialysis; Native Arteriovenous Fistula.

780. Glutathione S Transferase Theta1 and Mu1 Gene Polymorphisms and Phenotypic Expression of Asthma in Egyptian Children: A Case-Control Study

Nihal El Rifai, Nadia Moustafa, Nelly Degheidy and Manal Wilson

Italian Journal of Pediatrics, 40: 1-6 (2014) IF: 1.236

Background: Asthma is the result of a complex interaction between environmental factors and genetic variants that confer susceptibility. The glutathione S-transferases (GSTT1 and GSTM1) are phase II enzymes thought to protect the airways from oxidative stress. Few and contradictory data are available on the association between asthma development and GSTT1 and GSTM1 polymorphisms in different ethnic groups. The current study aimed to investigate whether these polymorphisms are associated with asthma development in the Egyptian population.

Methods: The cross-sectional study was performed on 94 asthmatic children 6 -12 yrs and 90 matched healthy controls. Candidates were subjected to clinical evaluation and measurement of absolute blood eosinophilic count, total serum IgE, and GSTT1 and GSTM1 genotype by multiplex PCR technique.

Results: The results for GSTT1 null genotype were 87.2% and 97.2% for asthmatic children and controls respectively and showed to be significantly more in controls ($P=0.007$, OR: 0.683, CI: 0.034 -0.715). The results for GSTM1 null genotype were 50% and 61.1% for asthmatic children and controls respectively and showed to be nonsignificant ($p=0.130$, OR: 1.000, CI: 0.54 - 1.86). Also, no association was detected between GSTT1 and GSTM1 polymorphisms and atopic conditions or asthma severity.

Conclusion: The significant detection of GSTT1 null genotype more in controls than in asthmatics with no association with other atopic manifestations or asthma severity and the lack of association detected between GSTM1 polymorphism in relation to asthma, atopy or asthma severity confirm the uncertain role of those genes in the development of asthma.

Keywords: Asthma; Children; Egyptian; Glutathione S-Transferase; Polymorphism.

781. Outcome of Acute Kidney Injury in Pediatric Patients Admitted To the Intensive Care Unit

Shalaby M, Khathlan N, Safder O, Fadel F, Farag YM, Singh AK and Kari JA.

Clinical Nephrology, 82: 379-386 (2014) IF: 1.232

Background: Acute kidney injury (AKI) is common in the pediatric intensive care unit (PICU). We aimed to describe the etiology, clinical features, and outcome of AKI in pediatric patients and to determine the predictors for initiation of renal replacement and mortality.

Methods: A retrospective chart review was performed of the medical records for all patients who were admitted to the PICU at King Abdulaziz University Hospital between January 1 and December 31, 2011.

The pediatric-modified RIFLE criteria were used to classify AKI. **Results:** We included 102 children with AKI, aged 4 - 60 months. Oliguria (61.5%, $p < 0.0001$) and hypervolemic signs (38.5%, $p = 0.03$) were more common among patients with RIFLE class failure. They also had the highest mortality (53.9%,

$p = 0.01$). Oliguric patients were ~ 23 times more likely than their non-oliguric counterparts to be initiated on renal replacement therapy (RRT) (RR = 23.38, 95% CI: 3.07 – 178.16). Diuretic infusion was also a strong predictor for RRT initiation (RR = 10.00, 95% CI: 2.77 – 36.12). Hypervolemic patients were twice more likely to die during hospitalization in both unadjusted and adjusted models (RR = 2.06, 95% CI: 1.09 – 3.90, and aRR = 2.45, 95% CI: 1.09 – 5.51, respectively). Mechanical ventilation and RRT initiation were associated with higher likelihood of death (ARR = 13.23, 95% CI: 1.90 – 92.04, and ARR = 2.20, 95% CI: 1.18 – 4.12, respectively).

Patients with RIFLE class Failure were about thrice more likely than patients with RIFLE class Risk to die in both the unadjusted (RR = 2.76, 95% CI: 1.35 – 5.65), and adjusted models (ARR = 2.88, 95% CI: 1.38 – 6.04). Children with AKI had longer PICU stay (0.0003) and higher mortality (< 0.0001) than the non-AKI group.

Conclusion: Severe AKI predicted high mortality in critically ill children.

Keywords: Acute Kidney Injury – Intensive Care Unit – Pediatric Rifle.

782. Vitamin D Deficiency in Egyptian Mothers and Their Neonates and Possible Related Factors

El Rifai NM, Abdel Moety GA, Gaafar HM and Hamed DA

The Journal of Maternal Fetal and Neonatal Medicine, 27(10): 1-5 (2014) IF: 1.208

Objective: To correlate vitamin D level in Egyptian mothers with that of their newborns, and examine risk factors related to maternal vitamin D deficiency.

Methods: A cross-sectional study was carried out at the university teaching hospital in Cairo, Egypt. Serum 25(OH) D levels were measured by enzyme-linked immunosorbent assay in 135 pregnant women at ≥ 37 weeks' gestation immediately before delivery and in cord blood of their newborns.

Results: The levels of serum 25(OH) D were 32.6 ± 21.4 ng/ml in mothers and 16.7 ± 10 ng/ml in their newborns. Maternal vitamin D level was strongly correlated with that of the newborns ($r = 0.7$, $p < 0.0001$). Maternal vitamin D deficiency/insufficiency and neonatal vitamin D deficiency/insufficiency were encountered in (40%, 28.9% and 60%, 32.6% respectively). Maternal vitamin D levels showed significant correlations with maternal body mass index (BMI; $r = -0.201$, $p = 0.021$), gestational age at delivery ($r = 0.315$, $p \leq 0.0001$), fish consumption ($r = 0.185$, $p = 0.032$), educational level ($r = 0.29$, $p = 0.001$), and skin exposure ($r = 0.247$, $p = 0.004$).

Conclusion: Maternal vitamin D levels strongly correlate with neonatal levels. Maternal vitamin D deficiency is a real problem in Egypt; this is generally related to high BMI, low fish consumption, low educational level, and limited skin exposure.

Keywords: Mothers; Neonates; Vitamin D.

783. Role of Online Hemodiafiltration in Improvement of Inflammatory Status in Pediatric Patients With End-Stage Renal Disease

Morad AA, Bazaraa HM, Abdel Aziz RE, Abdel Halim DA, Shoman MG and Saleh ME.

Iranian Journal of Kidney Diseases, 8: 481-485 (2014) IF: 0.979

Introduction: Patients with end-stage renal disease are known to suffer from chronic inflammation as the result of an ongoing subacute cytokine induction, which may contribute considerably to dialysis-related long-term morbidity and mortality. In order to assess the inflammatory risk associated with online hemodiafiltration compared to conventional hemodialysis, we compared the cytokine induction profile of pediatric patients during treatment with each these modalities of dialysis.

Materials and Methods: Thirty pediatric patients on regular hemodialysis for at least 6 months were shifted to online hemodiafiltration. We collected serum samples before and 6 months after initiation of online hemodiafiltration. The target pro-inflammatory cytokines selected were interleukin-6, tumor necrosis factor- α , and high-sensitivity C-reactive protein.

Results: High-sensitivity C-reactive protein decreased significantly on hemodiafiltration. The mean C-reactive protein level after 6 months was $3.41 \mu\text{g/mL}$ in the online hemodiafiltration as compared to $7.98 \mu\text{g/mL}$ in the hemodialysis group ($P = .01$). Plasma interleukin-6 and tumor necrosis factor- α also decreased significantly on hemodiafiltration and the values were 100.44 pg/mL versus 168.40 pg/mL ($P = .002$) and 11.45 pg/mL versus 15.70 pg/mL ($P = .008$), respectively, for the hemodiafiltration and hemodialysis groups.

Conclusions: Online hemodiafiltration is associated with dampened pro-inflammatory cytokine profile compared to conventional hemodialysis in children with end-stage renal disease.

Keywords: End-Stage Renal.

784. Acute Hemolytic Anemia as An Initial Presentation of Wilson Disease in Children

El Raziky MS, Ali A, El Shahawy A and Hamdy MM.

J Pediatr Hematol Oncol, 36.3: 173-178 (2014) IF: 0.956

Background: Wilson disease (WD) is an inherited disorder of copper metabolism. Hemolytic anemia in WD occurs in up to 17% of patients at some point during their illness.

Aim: To screen for WD among children presenting with hemolytic anemia.

Methodology: Twenty cases (mean age, 8.8 ± 3.9 y) with Coombs-negative hemolytic anemia, attending the hematology clinic of children hospital, Cairo University, were screened for WD by serum ceruloplasmin level, 24 hours urinary copper before and after D-penicillamine challenge test, and slit-lamp examination for detecting Kayser-Fleischer rings.

Results: No case had low ceruloplasmin, whereas bilateral Kayser-Fleischer rings was detected in 5% of our cases. Urinary copper was elevated in 5% before and in 40% after D-penicillamine challenge test. According to the scoring system used, 1 case had definite WD and 7 cases were likely to have WD. These 8 (40%) cases were referred to as group B. Group B had a significantly lower hemoglobin, mean corpuscular volume, mean corpuscular hemoglobin, and reticulocytes ($P = 0.04$, 0.001 , 0.04 , and 0.04 , respectively) and a significantly higher urinary copper after penicillamine ($P = 0.000$) when compared with group A (unlikely WD).

Conclusion: WD is not uncommon in children with hemolytic anemia after exclusion of other common causes.

Keywords: Wilson Disease; Hemolytic Anemia; Screening.

785. Oxidant-Antioxidant Status in Egyptian Children With Sickle Cell Anemia: A Single Center Based Study

El-Ghamrawy MK, Hanna WM, Abdel-Salam A, El-Sonbaty MM, Youness ER and Adel A

Jornal De Pediatria, 90(3): 286-292 (2014) IF: 0.935

Objective: the present study was conducted to investigate the oxidant-antioxidant status in Egyptian children with sickle cell anemia.

Methods: the serum levels of total antioxidant capacity (TAO), paraoxonase (PON), vitamin E, nitrite, and malondialdehyde (MDA) were measured in 40 steady state children with homozygous sickle cell anemia (24 males and 16 females) and 20 apparently healthy age- and gender-matched controls.

Results: mean serum TAO, PON, vitamin E, and nitrite levels were significantly lower in the group with sickle cell anemia, whereas mean serum MDA was significantly higher in these children compared to controls. No significant differences in mean levels of TAO, PON, nitrite, vitamin E, and MDA were found in sickle cell anemia patients receiving hydroxyurea when compared with those not receiving hydroxyurea. A significant negative correlation between serum nitrite and the occurrence of vaso-occlusive crises (VOC) was observed ($r=-0.3$, $p=0.04$). PON level was found to be positively correlated with patients' weight and BMI ($r=-0.4$, $p=0.01$; $r=-0.7$, $p<0.001$, respectively), but not with frequency of VOC. The area under the curve of serum nitrite in predicting occurrence of VOC was 0.782, versus 0.701 for PON, and 0.650 for TAO ($p=0.006$). Serum MDA was not correlated with nitrite, PON, TAO, or vitamin E levels. No significant correlations were detected between serum nitrite and hemoglobin or antioxidant enzymes.

Conclusion: children with sickle cell anemia have chronic oxidative stress that may result in increased VOC, and decreased serum nitrite may be associated with increases in VOC frequency. A novel finding in this study is the decrease in PON level in these patients, which is an interesting subject for further research.

Keywords: Anemia Falciforme; Antioxidantes; Antioxidants; Children; Crianças; Malondialdehyde; Malondialdeído; Nitrite; Nitrito; Paraoxonase; Sickle Cell Anemia.

786. Hypertrophic Cardiomyopathy: Prognostic Factors and Survival Analysis in 128 Egyptian Patients

El-Saiedi SA, Seliem ZS and Esmail RI

Cardiology In the Young, 24: 702-708 (2014) IF: 0.857

Background: Hypertrophic cardiomyopathy is an important cause of disability and death in patients of all ages. Egyptian children may differ from Western and Asian patients in the pattern of hypertrophy distribution, clinical manifestations, and risk factors.

Objectives: The aim of our study was to report the clinical characteristics and outcomes of Egyptian children with hypertrophic cardiomyopathy studied over a 7-year duration and to determine whether the reported adult risk factors for sudden cardiac death are predictive of the outcome in these affected children.

Study Design and Methods: This retrospective study included 128 hypertrophic cardiomyopathy children. The data included

personal history, family history, physical examination, baseline laboratory measurements, electrocardiogram, and Holter and echocardiographic results. Logistic regression analysis was used for the detection of risk factors of death.

Results: Fifty-one out of 128 patients died during the period of the study. Of the 51 deaths, 36 (70.5%) occurred in patients presenting before 1 year of age. Only eight patients had surgical intervention. Extreme left ventricular hypertrophy, that is, interventricular septal wall thickness or posterior wall thickness Z-score >6 , sinus tachycardia, and supraventricular tachycardia were found to be independent risk factors for prediction of death in patients with hypertrophic cardiomyopathy.

Conclusions: At our Egyptian tertiary care centre, hypertrophic cardiomyopathy has a relatively worse prognosis when compared with reports from Western and Asian series. Infants have a worse outcome than children presenting after the age of 1 year. A poorer prognosis in childhood hypertrophic cardiomyopathy is predicted by an extreme left ventricular hypertrophy, the presence of sinus tachycardia, and supraventricular tachycardia.

Keywords: Hypertrophic Cardiomyopathy; Echocardiography; Children.

787. Influence of Iron Regulating Genes Mutations on Iron Status in Egyptian Patients With Sickle Cell Disease

Hala A. Abdel Rahman, Heba H. Abou-Elew, Reem M. El-Shorbagy, Rania Fawzy and Ilham Youssry

Annals of Clinical and Laboratory Science, 44(3): 304-309 (2014) IF: 0.839

Background: Mutations of HAMP gene encoding the major iron regulator peptide hepcidin and HFE gene encoding hemochromatosis protein have been implicated in iron overload. The aim of this work was first to analyze the frequency of G71D mutation of HAMP gene and H63D mutation of HFE gene in sickle cell disease (SCD) patients and secondly to study the relative contributions of these genetic variations on iron status.

Methods: This study was performed on a total of 92 Egyptian subjects: 47 SCD patients and 45 age- and sex- matched healthy controls. Genotyping of G71D of HAMP and of H63D of HFE variants was performed by polymerase chain reaction-restriction fragment length polymorphism analysis. Estimation of iron overload was based on steady-state serum ferritin and transferrin saturation.

Results: Genotyping of HAMP-G71D and HFE-H63D variants in SCD patients revealed that 61.7% showed a wild type genetic profile in both genes, 14.9% had a variation in HAMP-G71D, 27.7% in HFE-H63D, and 4.3% in both. Patients with either HAMP-G71D or HFE-H63D variants did not show significant difference in iron overload parameters in relation to wild type patients. Multivariate regression analysis revealed that the number of mutations harbored by SCD patients affects serum ferritin level ($p=0.054$), albeit it was not statistically significant.

Conclusions: HAMP-G71D and HFE-H63D variants are not uncommon among the Egyptian SCD patients. Neither of them alone is a major determinant of iron overload, nevertheless, the number of harbored mutations may increase the probability of iron overload in these patients.

Keywords: HAMP; HFE; Sickle cell Disease; Iron overload.

788. Clinical and Ultrasonographical Characterization of Childhood Cystic Kidney Diseases in Egypt

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Renal Failure, 36: 694-700 (2014) IF: 0.775

Background: Renal cystic disorders (RCD) constitute an important and leading cause of end-stage renal disease (ESRD) in children. It can be acquired or inherited; isolated or associated with extrarenal manifestations. The precise diagnosis represents a difficult clinical challenge.

Methods: The aim of this study was to define the pattern of clinical phenotypes of children with renal cystic diseases in Pediatric Nephrology Center, Cairo University. We have studied the clinical phenotypes of 105 children with RCD [45 (43%) of them had extrarenal manifestations].

Results: The most common disorders were the presumably inherited renal cystic diseases (65.7%) mainly nephronophthisis and related ciliopathies (36.2%), as well as polycystic kidney diseases (29.5%). Moreover, multicystic dysplastic kidneys accounted for 18% of study cases. Interestingly, eight syndromic cases are described, yet unclassified as none had been previously reported in the literature.

Conclusion: RCD in this study had an expanded and complex spectrum and were largely due to presumably inherited/genetic disorders (65.7%). Moreover, we propose a modified algorithm for clinical and diagnostic approach to patients with RCD.

Keywords: Multicystic Dysplastic Kidneys; Nephronophthisis, Polycystic Kidney; Disease; Renal Ciliopathies; Ultrasonography.

789. Treatment of Hepatitis B and C in Children

El-Shabrawi M and Hassanin F.

Minerva Pediatrica, 66: 473-489 (2014) IF: 0.723

Chronic viral hepatitis B and C infections are highly prevalent and create a substantial burden to healthcare systems globally. These two chronic infections are the cause of significant global morbidity and mortality with approximately 1 million annual deaths attributable to them and their sequelae. Children are vulnerable to both infections. The availability of new drugs and new therapeutic strategies are increasing the complexity and individualizing the management of children with viral hepatitis. Therefore, it is extremely important to educate and advise pediatricians concerning the new lines of treatment. More than 350 million persons worldwide are infected with HBV. Although its incidence has dramatically declined since the implementation of universal immunization programs in many countries, scores of children are still being infected each year. Despite its benign course, chronic hepatitis B (CHB) during childhood and adolescence, 3-5% and 0.01-0.03% of chronic carriers develop cirrhosis or hepatocellular carcinoma (HCC), respectively, before adulthood. Treatment of CHB in childhood has been hampered by the long delay in licensing new drugs for pediatric use. Safe and effective antiviral therapies are available in adults, but few are labeled for use in children, and an accurate selection of whom to treat and the identification of the right timing for treatment are needed to optimize response and reduce the risk of antiviral resistance. Although several guidelines on the management of adult patients with CHB have been published by major international societies, the clinical approach to infected children is still evolving, and is mostly based on the expert opinions.

Standard interferon (IFN)- α is still the treatment of choice for most children with HBV infection. Licensing of highly-effective nucleoside/nucleotide analogues (NA) for older children and adolescents has opened new possibilities of treatment. However, the risk of emergence of drug resistant strains is a public health problem and a major long-term issue for young patients. Before starting a child on NAs, the risks of treatment should be carefully weighed against the possible benefits. As the management of special patient populations is problematic and not evidence-based, their referral to highly specialized centers is strongly recommended. The World Health Organization estimates that over 250 million people worldwide are chronically infected with HCV. In countries where adults have a high prevalence of HCV infection, an increased prevalence in children can also be expected. In Egypt, for example, approximately 1-2% of children are infected. The child infected with HCV must be over 2 years old in order to be treated by a licensed drug. The standard of care therapy is pegylated IFN- α plus ribavirin with success rates as similar in adults. The first-wave, first-generation oral direct acting anti-virals (DAAs) telaprevir and boceprevir were licensed by the FDA for use in HCV genotype 1 infection in adults in 2011. Telaprevir and boceprevir must be coadministered with pegylated IFN- α and ribavirin. Sofosbuvir, the second-wave DAA has been approved in adults in January 2014 and other DAAs are on the way of approval soon in adults. Some DAAs are being tested for children and the results are eagerly awaited.

Keywords: Hepatitis B - Hepatitis C - Child - Liver Diseases.

790. Pediatric Air Gun Shot Injury

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Saudi Medical Journal, 12: 1507-1509 (2014) IF: 0.554

Air guns (AGs) use air or another compressed gas to propel a projectile. Different injuries may occur in children due to their body structure, which is less-resistant with thin soft tissue coverage that can be easily penetrated by an AG shot. We present 3 cases of pediatric AG shot injury. The first-case had right lumber deep tissue penetration of AG pellet without internal damage, the second-case had a complex course of pellet into the perineum, and the third-case was shot in the left shoulder. All cases were accidentally shot. The shooters were all children, and relatives of the victims. All patients were generally stable on arrival. Two cases were operated, and one received conservative management. On follow up, no complications were noted. At first sight, AGs and air rifles may appear relatively harmless, but they are potentially lethal and children should not be allowed to play with them.

Keywords: Pediatric; Air Gun Shot; Injury.

791. Toe Tourniquet Syndrome

Naglaa M Kamal, Ubaid U. Khan, Shazia J. Mirza and Talal A. Al-Malki

Saudi Medical Journal, 35: 865-867 (2014) IF: 0.554

Toe tourniquet syndrome refers to external, mechanical, circumferential constriction of the toes. We report a series of 4 infants with toe tourniquet syndrome from Saudi Arabia who presented during wintertime with very similar symptoms (approximately 48 hours of inconsolable crying and irritability), similar involved region (toes), and similar constricting agent (hairs). Immediate removal of the hair fibers was carried out in all patients, fortunately followed by fast healing with no signs of

tissue necrosis. The prompt diagnosis and treatment of the condition were vital in attaining the good outcome and preventing ischemic complications.

Keywords: Toe Tourniquet Syndrome; Saudi; Pediatrics.

792. the Role of Intensive Phototherapy in Decreasing the Need for Exchange Transfusion in Neonatal Jaundice

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J. of Pakistan Medical Association, 64: 5-8 (2014) IF: 0.403

Objectives: To assess the effectiveness of intensive phototherapy in reducing the need for exchange transfusion and the duration of phototherapy.

Methods: The prospective study with historical controls was conducted at Cairo University Paediatric Hospital, from February to July 2012e n

, and comprised 360 newborns with indirect hyperbilirubinaemia. The 183 subjects were treated with Bilisphere 360 (Bilisphere group) compared with 177 who had been treated with conventional phototherapy (control group). Both groups were subjected to complete clinical evaluation and laboratory investigations.

Results: Bilisphere 360 decreased the need for exchange transfusion in 19 (10.4%) neonates of the Bilisphere group versus 130 (73.4%) of the control group ($p < 0.001$); decreased the level of serum bilirubin as exchange transfusion (6.7 mg/dl [24.9%] in the subjects vs. 6.9 mg/dl [22.7%] in the controls); shortened the duration of phototherapy (2.7 days in the subjects, vs. 4.2 days in the controls; $p < 0.001$).

Conclusion: The use of Bilisphere 360 in the treatment of indirect pathological hyperbilirubinaemia is as effective as exchange transfusion in lowering Total Serum Bilirubin when its level is within 2-3 mg/dl (34-51 $\mu\text{mol/l}$) of the exchange level. Bilisphere 360 is effective in reducing needs for exchange transfusion and duration of phototherapy.

Keywords: Intensive Phototherapy, Exchange Transfusion, Neonatal Jaundice.

793. Do Term Newborns Respond Similarly To Different Painful Procedures?

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Iranian Journal of Pediatrics, 24 (6): 679-684 (2014) IF: 0.334

Objective: Although many methods for pain assessment in newborns are available, none of them are widely accepted. Our aim was to answer the question: do newborns respond similarly to different painful procedures?

Methods: Sixty term newborns were involved in non-randomized prospective study. They were classified into 2 groups: Group A (n=30) who needed intubation and Group B (n=30) who necessitated umbilical vein catheterization. Close observation prior to and 10 minutes after the painful procedures was performed for recording of physiological and behavioral indicators. Plasma renin activity (PRA) was measured before and 10 minutes after the painful procedures.

Findings: There was statistically significant difference between the 2 groups as regards physiological and hormonal responses to pain ($P < 0.05$). Apart from palmar sweating and crying, there was

no significant difference in behavioral response ($P > 0.05$). The median pre- and post-intubation levels of PRA were 3.04 and 12.05 ng/ml/hour, respectively. There was significant ($P < 0.001$) increase of PRA after intubation. On the other hand, the median pre- and post-catheterization levels of PRA were 5.21 and 9.19 ng/ml/hour, respectively. There was significant ($P < 0.001$) increase of PRA after umbilical vein catheterization. We found that PRA was the only indicator of pain in group A ($P = 0.047$). On the other hand, we did not find any indicator of pain in group B.

Conclusion: We concluded that full-term newborns vary in their physiological and hormonal responses to different painful procedures but their behavioral response is the same.

Keywords: Pain assessment; Newborns; Plasma renin activity; Intubation; Umbilical vein catheterization.

794. Mutation of Congenital Chloride Losing Diarrhea in Saudi Children

Abdulla A. Alharthi, Naglaa M. Kamal, Samer E. Ismail, Gaber M. G. Shehab, Hamdi M. Youssef and Yousri M. Hussein

Wulfenia, 21: 234-242 (2014) IF: 0.294

Congenital Chloride Diarrhea (CLD) is a watery diarrhea with metabolic alkalosis and excess chloride in feces. It is an autosomal recessive inherited disease caused by mutations in SLC26A3 gene with higher incidence in Arab countries. Due to Arab consanguineous marriages, only one founder mutation (Gly187Ter) was reported in exon5. We sequenced exon5 to study the molecular background in 27 CLD children from Taif, Saudi Arabia. Interestingly, the mutation (NG_008046.1:g.17175G>T, ss904491498) was consistent in all children. These results will support developing CLD early detection kits and specific treatments. Adding it to the Saudi pre-marital check-up program would greatly decrease CLD burden. We are looking forward to include screening for the reported founder mutation in the Saudi pre-marital check-up program hoping to decrease the burden of this inherited lifelong disease and with the challenge of developing specific treatment

Keywords: Chloride Diarrhea (CLD); Congenital Chloride Losing Diarrhea (CCD), SNP, Founder Mutation.

795. Ocular Manifestations in Egyptian Children and Young Adults With Sickle Cell Disease

Mona Kamal El-Ghamrawy, Hanan F. El Behairy, Amal El Menshawry, Seham A. Awad, Ahmed Ismail and Mohamed Salah Gabal

Indian Journal of Hematology and Blood Transfusion, 30(4): 275-280 (2014) IF: 0.234

In sickle cell disease (SCD), ocular lesions result from stasis and occlusion of small eye vessels by sickled erythrocytes. Vaso-occlusive disease of the retina can be responsible for nonproliferative (NPR) and proliferative retinopathy (PR). Patients are often asymptomatic until serious complications arise as, vitreous hemorrhage and retinal detachment. This work aimed to study the frequency and pattern of ocular manifestations in Egyptian children and young adults with SCD. In this cross-sectional study, 40 steady state patients (80 eyes) aged 2-28 years (30 children and 10 young adults) with established diagnosis of SCD (26 with homozygous SS and 14 with S/ β thalassemia underwent complete ophthalmic examination with dilated funduscopy. Fluorescein angiography was performed for patients

=12 years old. The overall frequency of retinal lesions was 47.5 % (46.2 and 50 % of SS and S/β patients respectively). PR and NPR were evident in 32.5 and 27.5 % of all enrolled patients respectively (five patients having both). Peripheral retinal occlusion was a frequent ocular finding in both groups; the youngest patient showing PR was 15 years old. Older age, longer disease duration and splenectomy were significantly more prevalent among patients with PR. Despite lack of visual symptoms, children and young adults are at risk of PR. Frequency of retinal lesions was comparable in SS and S/β patients. Periodic ophthalmologic examination starting at the age of 12 years is recommended for timely-identification of retinal lesions thus minimizing the risk of sight threatening retinopathy.

Keywords: Children; Ocular; Retinopathy; Sick Cell Disease.

796. Nutritional Biomarkers in Children and Adolescents With Beta-Thalassemia-Major: an Egyptian Center Experience

Laila M. Sherief, Sanaa M. Abd El-Salam, Naglaa M. Kamal, Osama El safy, Mohamed A. A. Almalky, Seham F. Azab, Hemat M. Morsy and Amal F. Gharieb

Biomed Research International, 2014: 1-7 (2014)

Background and Aim: Trace elements and vitamins play a vital role in human body to perform its function properly. Thalassaemic patients are at risk of micronutrient deficiency. This study estimated levels of vitamins A, C, E, B12, folic acid, total homocysteine (tHcy), and methylmalonic acid (MMA) along with trace elements, zinc, copper, and selenium in Beta-thalassaemia-major patients.

Methods: This study included 108 patients with Beta-thalassaemia-major and 60 age and sex matched healthy children. Serum levels of vitamin A, E, C, tHcy, and MMA were estimated by high pressure liquid chromatography while serum levels of folic acid and B12 were estimated by thin layer chromatography. Serum zinc, copper, and selenium were determined by atomic absorption spectrometry.

Results: There was a significant decrease of vitamins A, C, E, and B12 and trace elements zinc, copper, and selenium in thalassaemic patients as compared to controls. tHcy and MMA were significantly elevated in patients. No significant correlations were found between the serum levels of the studied vitamins and trace elements as regards age, frequency of transfusion, duration of transfusion, and serum ferritin.

Conclusion: The level of various nutritional biomarkers (vitamins A, C, E, and B12 and trace elements zinc, copper, selenium) was reduced in chronically transfused Egyptian thalassaemic patient. These patients should have periodic nutritional evaluation and supplementation. Multicenter studies are highly recommended.

Keywords: Nutritional Biomarkers; Children; Adolescents; Beta-Thalassaemia-Major; Egyptian.

797. Rheumatic Heart Disease in Africa: the Mosi-O-Tunya Call to Action

Sahar Mohamed Shaker Abd El-fattah Sheta

The Lancet Global Health, 2 (8): e438–e439 (2014)

Rheumatic heart disease is a neglected post-infectious chronic disease of children and young adults that continues to maim and kill millions of people needlessly. Sub-Saharan Africa is the hotspot of the world, with a prevalence of 5-7 per 1000 in

children aged 5–14 years in 2005.¹ This information galvanised the Pan African Society of Cardiology (PASCAR), together with the WHO Regional Office for Africa (WHO-AFRO), the World Heart Federation, and the South African National Department of Health to convene the first All-Africa Workshop on rheumatic fever and rheumatic heart disease on Oct 15–16, 2005, near Drakensberg in South Africa.

Keywords: Rheumatic heart disease; Rheumatic fever.

Dept. of Physiology

798. Effect of Ghrelin on Chronic Liver Injury and Fibrogenesis in Male Rats: Possible Role of Nitric Oxide

Kabil NN, Seddiek HA, Yassin NA and Gamal-Eldin MM

Peptides, 52: 90-97 (2014) IF: 2.614

Recent studies have revealed that ghrelin may be an antioxidant and anti-inflammatory agent in many organs, however its role in chronic liver injury (CLI) remains unclear. The role of nitric oxide (NO) in CLI is controversial as evidence suggests that NO is either a primary mediator of liver cell injury or exhibits a protective effect against injurious stimuli. Recent evidence demonstrated that the therapeutic potential for ghrelin was through eNOS activation and increase in NO production. However, its role on NO production in the liver has not been previously investigated. The aim of this study was to investigate the role of ghrelin in treatment of CLI, and whether this action is mediated through NO. Forty male rats were divided into four groups: Group I: Control; Group II: chronic liver injury (CLI); Group III: CLI+Ghrelin; and Group IV: CLI+Ghrelin+l-NAME. Liver enzymes and tumor necrosis factor alpha (TNF-α), were measured to assess hepatocellular injury. Liver tissue collagen content, malondialdehyde (MDA), gene expression of Bax, Bcl-2, and eNOS were assessed to determine the mechanism of ghrelin action. Results showed that ghrelin decreased serum liver enzymes and TNF-α levels. Ghrelin also reduced liver tissue collagen, MDA, and Bax gene expression, and increased Bcl-2 and eNOS gene expression. The effects on TNF-α, collagen, MDA, Bax, and eNOS were partially reversed in Group IV, suggesting that ghrelin's action could be through modulation of NO levels. Therefore, ghrelin's hepatoprotective effect is partially mediated by NO release.

Keywords: Liver Injury Fibrosis Thioacetamide Ghrelin Nitric Oxide.

799. Cognitive Effects of Acute Restraint Stress in Male Albino Rats and the Impact of Pretreatment With Quetiapine Versus Ghrelin

Amin SN, Gamal SM, Esmail RS, Aziz TM and Rashed LA

J Integr Neurosci, 13: 669-692 (2014) IF: 1.121

Stress is any condition that seriously affects the balance of the organism physiologically and psychologically. Stress activates the hypothalamic-pituitary-adrenal (HPA) releasing glucocorticoid hormones that produce generalized effects on different body systems including the nervous system. This study aimed to investigate the effect of acute restraint stress (ARS) on cognitive performance by measuring spatial working memory in Y-maze, behavior (anxiety and exploratory behavior) in open field test, expression of synaptophysin and glial fibrillary acidic protein

(GFAP) in the hippocampus by immunohistochemistry, dopaminergic receptors (D2) in the basal ganglia by gene expression and comparing the effect of ghrelin and quetiapine on the previous parameters. 36 adult male albino rats constituted the animal model of this work and have been divided into six groups: control group, control group exposed to ARS, quetiapine group, quetiapine group exposed to ARS, ghrelin group and ghrelin group exposed to ARS. We demonstrated more neuroprotective effect for quetiapine compared to ghrelin on stress response, anxiety behavior and working spatial memory impairment due to ARS.

Keywords: Acute Stress; D2 Dopaminergic Receptors; GFAP; Basal Ganglia; Hippocampus; Synaptophysin.

Dept. of Public Health

800. Genetic Polymorphisms in Nqo1 and Sod2: Interactions With Smoking, Schistosoma Infection, and Bladder Cancer Risk in Egypt

David Goerlitz, Sania Amr, Chiranjeesh Dash, Doa'a A. Saleh, Mai El-Daly, Mohamed Abd El-Hamid, Sherif El-Kafrawy, Tamer Hifnawy, Sameera Ezzat, Mohamed A. Abd El-Aziz, Hussein Khaled, Yun-Ling Zheng, Nabil Mikhail and Christopher A. Loffredo

Urologic Oncology Seminars and Original Investigations, - (2014) IF: 3.363

Background: Bladder cancer is the most prevalent form of cancer in men among Egyptians, for whom tobacco smoke exposure and *Schistosoma haematobium* (SH) infection are the major risk factors. We hypothesized that functional polymorphisms in NAD(P)H: quinone oxidoreductase 1 (NQO1) and superoxidodismutase2 (SOD2), modulators of the effect of free active oxidative species, can influence an individual's susceptibility to these carcinogenic exposures and hence the risk of bladder cancer.

Methods: We assessed the effects of potential interactions between functional polymorphisms in the NQO1 and SOD2 genes and exposure to smoking and SH infection on bladder cancer risk among 902 cases and 804 population-based controls in Egypt. We used unconditional logistic regression to estimate the odds ratios (OR) and confidence intervals (CI) 95%.

Results: Water pipe and cigarette smoking were more strongly associated with cancer risk among individuals with the TT genotype for SOD2 (OR [CI95%] ¼ 4.41 [1.86–10.42]) as compared with those with the CC genotype (OR [CI95%] ¼ 2.26 [0.97–6.74]). Conversely, the risk associated with SH infection was higher among the latter (OR [CI95%] ¼ 3.59 [2.21–5.84]) than among the former (OR [CI95%] ¼ 1.86 [1.33–2.60]). Polymorphisms in NQO1 genotype showed a similar pattern, but to a much lesser extent. The highest odds for having bladder cancer following SH infection were observed among individuals with the CC genotypes for both NQO1 and SOD2 (OR [CI95%] ¼ 4.41 [2.32–8.38]).

Conclusion: Our findings suggest that genetic polymorphisms in NQO1 and SOD2 play important roles in the etiology of bladder cancer by modulating the effects of known contributing factors such as smoking and SH infection.

Keywords: Nqo1; Sod2; Bladdercancer; Epidemiology; Smoking; Schistosomiasis.

801. Multiple Pregnancies, Hepatitis C, and Risk for Hepatocellular Carcinoma in Egyptian Women

Sania Amr, Emily A Iarocci, Ghada R Nasr, Doa'a Saleh, Jan Blancato, Kirti Shetty and Christopher A Loffredo

Bmc Cancer, 29: 893-897 (2014) IF: 3.319

Background: The reasons for the worldwide sex disparity in the incidence of hepatocellular carcinoma (HCC) remain elusive. We investigated the role of multiple pregnancies on the associations between viral hepatitis C (HCV) infection and HCC risk among Egyptian women.

Methods: We used data collected from blood specimens and questionnaires administered to female HCC cases and controls in Cairo, Egypt, from 1999 through 2009. HCV infection was defined as being sero-positive for either anti-HCV antibodies or HCV-RNA. Using logistic regression models we calculated odds ratios (OR) and 95% confidence intervals (CI) to estimate the associations between being HCV positive and HCC risk, and how it is modified by the number of pregnancies, after adjustment for other factors, including hepatitis B status.

Results: Among 132 confirmed female cases and 669 controls, the risk of HCV-related HCC increased with the number of pregnancies. Women infected with HCV had higher risk for HCC if they had more than five pregnancies, as compared to those who had five or fewer pregnancies (adjusted OR (95% CI): 2.33 (1.29-4.22)). The association of HCV infection with HCC risk was significantly greater among the former (21.42 (10.43-44.00)) than among the latter (6.57 (3.04-14.25)).

Conclusion: Having multiple pregnancies increases the risk of HCV-related HCC among Egyptian women, raising questions about the roles of estrogens and other pregnancy-related hormones in modulating HCV infection and its progression to HCC

Keywords: Hepatocellular Carcinoma; Hepatitis C; Epidemiology; Pregnancy; Women's Health.

802. Knowledge Translation in Africa for 21st Century Integrative Biology: the "Know-Do Gap" in Family Planning With Contraceptive Use Among Somali Women

Ahmed A. Ahmed, Abdullahi A. Mohamed, Ibrahim A. Guled, Hayfa M. Elamin and Alaa H. Abou-Zeid

Omics A Journal of Integrative Biology, 18: 696-704 (2014) IF: 2.73

An emerging dimension of 21st century integrative biology is knowledge translation in global health. The maternal mortality rate in Somalia is amongst the highest in the world. We set out to study the "know-do" gap in family planning measures in Somalia, with a view to inform future interventions for knowledge integration between theory and practice. We interviewed 360 Somali females of reproductive age and compared university-educated females to women with less or no education, using structured interviews, with a validated questionnaire. The mean age of marriage was 18 years, with 4.5 pregnancies per marriage. The mean for the desired family size was 9.3 and 10.5 children for the university-educated group and the less-educated group, respectively. Importantly, nearly 90% of the university-educated group knew about family planning, compared to 45.6% of the less-educated group. All of the less-educated group indicated that they would never use contraceptives, as compared to 43.5% of the

university-educated group. Prevalence of contraceptive use among ever-married women was 4.3%. In the less-educated group, 80.6% indicated that they would not recommend contraceptives to other women as compared to 66.0% of the university-educated group. There is a huge gap between knowledge and practice regarding family planning in Somalia. The attendant reasons for this gap, such as level of education, expressed personal religious beliefs and others, are examined here. For primary health care to gain traction in Africa, we need to address the existing “know-do” gaps that are endemic and adversely impacting on global health. This is the first independent research study examining the knowledge gaps for family planning in Somalia in the last 20 years, with a view to understanding knowledge integration in a global world. The results shall guide policy makers, donors, and implementers to develop a sound family planning policy and program to improve maternal and child health in 21st century primary healthcare.

Keywords: Family Planning Somalia Knowledge Translation Africa.

803. Translating Biotechnology to Knowledge-Based Innovation, Peace, and Development? Deploy A Science Peace Corps—An Open Letter to World Leaders

Hekim N, Coşkun Y, Sınav A, Abou-Zeid AH, Ağırbaşı M, Akintola SO, Aynacıoğlu Ş, Bayram M, Bragazzi NL, Dandara C, Dereli T, Dove ES, Elbeyli L, Endrenyi L, Erciyas K, Faris J, Ferguson LR, Göğüş F, Güngör K, Gürsoy M, Gürsoy UK, Karaömerlioğlu MA, Kickbusch I, Kılıç T, Kılınç M, Kocagöz T, Lin B, LLerena A, Manolopoulos VG, Nair B, Özkan B, Pang T, Sardaş Ş, Srivastava S, Toraman C, Üstün K, Warnich L, Wonkam A, Yalcıner MC, Yaşar Ü and Özdemir V.

Omic A Journal of Integrative Biology, 18: 415-420 (2014) IF: 2.73

Scholarship knows no geographical boundaries. This science diplomacy and biotechnology journalism article introduces an original concept and policy petition to innovate the global translational science, a Science Peace Corps. Service at the new Corps could entail volunteer work for a minimum of 6 weeks, and up to a maximum of 2 years, for translational research in any region of the world to build capacity manifestly for development and peace, instead of the narrow bench-to-bedside model of life science translation. Topics for translational research are envisioned to include all fields of life sciences and medicine, as long as they are linked to potential or concrete endpoints in development, foreign policy, conflict management, post-crisis capacity building, and/or peace scholarship domains. As a new instrument in the global science and technology governance toolbox, a Science Peace Corps could work effectively, for example, towards elucidating the emerging concept of “one health”—encompassing human, environmental, plant, microbial, ecosystem, and planet health—thus serving as an innovative crosscutting pillar of 21st century integrative biology. An interdisciplinary program of this caliber for development would link 21st century life sciences to foreign policy and peace, in ways that can benefit many nations despite their ideological differences. We note that a Science Peace Corps is timely. The Intergovernmental Panel on Climate Change (IPCC) of the United Nations released the Fifth Assessment Report on March 31, 2014. Worryingly, the report underscores that no person or nation will remain untouched by the climate change, highlighting the shared pressing life sciences challenges for global society. To this end,

we recall that President John F. Kennedy advocated for volunteer work that has enduring, transgenerational, and global impacts. This culminated in establishment of the Peace Corps in 1961. Earlier, President Abraham Lincoln aptly observed, “nearly all men can stand adversity, but if you want to test a man's character, give him power.” We therefore petition President Barack Obama, other world leaders, and international development agencies in positions of power around the globe, to consider deploying a Science Peace Corps to cultivate the essential (and presently missing) ties among life sciences, foreign policy, development, and peace agendas. A Science Peace Corps requires support by a credible and independent intergovernmental organization or development agency for funding, and arbitration in the course of volunteer work when the global versus local (glocal) value-based priorities and human rights intersect in synergy or conflict. In all, Science Peace Corps is an invitation to a new pathway for competence in 21st century science that is locally productive and globally competitive. It can open up scientific institutions to broader considerations and broader inputs, and thus cultivate vital translational science in a world sorely in need of solidarity and sustainable responses to the challenges of 21st century science and society.

804. Knowledge and Perceptions of Hepatitis C Infection and Pesticides Use in Two Rural Villages in Egypt

Doa'a A Saleh, Sania Amr, Irene A Jillson, Judy Huei-yu Wang, Walaa A Khairy and Christopher A Loffredo

Bmc Public Health, 14 (1): 501-507 (2014) IF: 2.321

Background: Hepatocellular carcinoma (HCC), one of the most fatal types of malignancy, is increasing worldwide, and particularly in Egypt where there is a confluence of its contributing factors, including high prevalence of hepatitis C virus (HCV) infection, widespread use of pesticides, and diets that are contaminated by aflatoxin B1 (AFB1) in rural areas. We investigated knowledge, attitudes, and prevention practices related to HCV infection and pesticides use in rural Egypt, where over half of the population resides and agriculture is the predominant occupation.

Methods: From two rural villages we recruited 67 residents aged 18–80 years, who completed a 40-item survey that included questions about demographics, knowledge of and protective measures relevant to pesticides use in the home and in agriculture, awareness and perceptions of HCV infection and its treatment and prevention.

Results: Among the 67 study participants, gender distribution was equal, the mean age was 47.2, and one third never attended school. More than 50% reported using pesticides at home, but fewer reported having some knowledge about its health effects. Twelve participants were agricultural workers, and 11 of them applied pesticides in the field and knew about their toxicity; however only one person was correctly using the appropriate protective equipment. Among all the participants, 52 did not know what causes HCV infection, and 42 of those who knew it was a virus mentioned incorrect modes of transmission; and 30 did not know the disease manifestations.

Conclusion: In rural Egypt, there is a significant lack of knowledge of HCV infection and its transmission mode and limited use of protective measures against pesticides despite familiarity with these chemicals.

Keywords: HCV; Pesticides; Liver Cancer; Hepatocellular Carcinoma; Knowledge.

805. Agricultural Workers and Urinary Bladder Cancer Risk in Egypt

Sania Amr, Rebecca Dawson, Doa'a A. Saleh, Laurence S. Magder, Nabil N. Mikhail, Diane Marie St. George, Katherine Squibb, Hussein Khaled and Christopher A. Loffredo

Archives of Environmental and Occupational Health, 69(1): 3-10 (2014) IF: 0.617

The authors examined the associations between farming and the risk for squamous cell (SCC) or urothelial cell (UC) carcinoma of the urinary bladder among Egyptians. The authors used data from a multicenter case-control study (1,525 male and 315 female cases, and 2,069 male and 547 female age- and residence-matched, population-based controls) to calculate adjusted odds ratios (AORs) and 95% confidence intervals (CIs). Men in farming and who never smoked had increased risk for either SCC or UC (AOR [95% CI]: 4.65 [2.59–8.36] and 6.22 [3.82–10.15], respectively). If they ever smoked, their risks were 2.27 (1.75–2.95) and 1.93 (1.58–2.35), respectively. Women in farmer households were at increased risk for SCC (1.40 [0.93–2.09] and UC [1.25 (0.82–1.89)], although not statistically significant. Occupational and environmental exposures to farming increased the risk for bladder cancer among Egyptians

Keywords: Agricultural Workers; Bladder Cancer; Egypt; Epidemiology; Tobacco Smoke Exposure.

Dept. of Rheumatology

806. Prevalence of Comorbidities in Rheumatoid Arthritis and Evaluation of Their Monitoring: Results of An International, Cross-Sectional Study (COMORA)

Dougados M, Soubrier M, Antunez A, Balint P, Balsa A, Buch MH, Casado G, Detert J, El-Zorkany B, Emery P, Hajjaj-Hassouni N, Harigai M, Luo SF, Kurucz R, Maciel G, Mola EM, Montecucco CM, McInnes I, Radner H, Smolen JS, Song YW, Vonkeman HE, Winthrop K and Kay J.

Annals of the Rheumatic Diseases, 73: 62-68 (2014) IF: 9.27

Background: PATIENTS with rheumatoid arthritis (RA) are at increased risk of developing comorbid conditions.

Objectives: To evaluate the prevalence of comorbidities and compare their management in RA patients from different countries worldwide.

Methods: Study Design: international, cross-sectional.

Patients: consecutive RA patients.

Data Collected: demographics, disease characteristics (activity, severity, treatment), comorbidities (cardiovascular, infections, cancer, gastrointestinal, pulmonary, osteoporosis and psychiatric disorders).

Results: Of 4586 patients recruited in 17 participating countries, 3920 were analysed (age, 56±13 years; disease duration, 10±9 years (mean±SD); female gender, 82%; DAS28 (Disease Activity Score using 28 joints)-erythrocyte sedimentation rate, 3.7±1.6 (mean±SD); Health Assessment Questionnaire, 1.0±0.7 (mean±SD); past or current methotrexate use, 89%; past or current use of biological agents, 39%. The most frequently associated diseases (past or current) were: depression, 15%; asthma, 6.6%; cardiovascular events (myocardial infarction,

stroke), 6%; solid malignancies (excluding basal cell carcinoma), 4.5%; chronic obstructive pulmonary disease, 3.5%. High intercountry variability was observed for both the prevalence of comorbidities and the proportion of subjects complying with recommendations for preventing and managing comorbidities. The systematic evaluation of comorbidities in this study detected abnormalities in vital signs, such as elevated blood pressure in 11.2%, and identified conditions that manifest as laboratory test abnormalities, such as hyperglycaemia in 3.3% and hyperlipidaemia in 8.3%.

Conclusions: Among RA patients, there is a high prevalence of comorbidities and their risk factors. In this multinational sample, variability among countries was wide, not only in prevalence but also in compliance with recommendations for preventing and managing these comorbidities. Systematic measurement of vital signs and laboratory testing detects otherwise unrecognised comorbid conditions.

Keywords: Objectives To Evaluate The Prevalence Of Comorbidities.

807. Polymorphisms of Interleukin 6 and Interleukin 10 in Egyptian People With Behcet's Disease

Talaat RM, Ashour ME, Bassyouni IH and Raouf AA

Immunobiology, 219(8): 573-582 (2014) IF: 3.18

Cytokines play critical roles in the pathogenesis of Behçet's disease (BD). They mediated many of the effectors and regulatory functions of immune and inflammatory responses. Many studies have linked Interleukin-6 (IL-6) and Interleukin-10 (IL-10) pathologically to BD. Thus, this study aimed to investigate the associations between IL-6 and IL-10 promoter single-nucleotide polymorphisms (SNPs) and the susceptibility to BD and their implication on plasma levels. We genotyped IL-6 -174 G/C (rs1800795) using Mutagenically Separated Polymerase Chain Reaction PCR (MS-PCR) and IL-10 -1082 G/A (rs1800896) and -819 C/T (rs1800871) using Sequence Specific Primer PCR (SSP-PCR) in 87 Egyptian patients and 97 controls. The plasma levels of IL-6 and IL-10 were measured using Enzyme-linked Immunosorbent Assay (ELISA). Significant increase in the frequency of -1082 GG genotype ($P < 0.05$, $OR = 2.25$, $95\%CI = 1.03-4.91$) and significant decrease in the frequency of -1082 GA genotype ($P < 0.05$, $OR = 0.53$, $95\%CI = 0.29-0.96$) was demonstrated in BD patients compare to controls. Patients with genital ulcer had significantly lower frequency of -1082 GG ($P < 0.05$, $OR = 0.2$, $95\%CI = 0.04-0.99$) and G allele ($P < 0.05$, $OR = 0.28$, $95\%CI = 0.08-0.93$), while patients with ocular manifestations had significantly higher frequency of -1082 G allele ($P < 0.01$, $OR = 2.28$, $95\%CI = 1.19-4.36$). BD patients had significantly higher level of IL-6 ($P < 0.001$) and significantly lower level of IL-10 ($P < 0.001$) compared to controls. The changes in the level of cytokines were independent of any genotype of IL-6 or any genotype/haplotype of IL-10. Patients with active disease state had significantly higher level of IL-6 compared to patients in remission ($P < 0.05$). In conclusion, our preliminary study indicates that the polymorphism at IL-10 -1082 G/A may play a role in BD susceptibility. The significant increase in IL-6 level and the significant decrease in IL-10 level in BD patients were independent of any particular genotype in IL-6 or any particular genotype/haplotype in IL-10.

Keywords: Behçet's Disease; Cytokines; IL-10; IL-6; Polymorphism; Snp.

808. Autoantibodies Against Complement C1q in Patients With Behcet's Disease: Association With Vascular Involvement

Bassyouni IH, Gamal S, Talaat RM and Siam I

Modern Rheumatology, 24(2): 316-320 (2014) IF: 2.206

The aim of our study was to determine the prevalence of anti-C1q antibodies and their possible association with clinical presentation in Behcet's disease (BD) patients with special emphasis for patients with vascular involvement.

Plasma anti-C1q Abs levels were measured using an enzyme-linked immunosorbent assay in 51 BD patients and 25 age- and gender-matched healthy controls.

We found elevated concentrations of anti-C1q more frequently in patients with BD (18 %) than in healthy controls (8 %).

The highest prevalence was found in patients with vascular BD (42 %) which was significantly higher than patients without vascular BD and healthy controls ($p = 0.025$). Furthermore, patients with vascular BD had the highest mean anti-C1q levels when compared to BD patients without vascular involvement or healthy control subjects ($p = 0.015$).

We did not find significant differences in the prevalence of any other organ involvement between BD patients with elevated vs. normal anti-C1q ab levels. Anti-C1q ab levels positively correlated with ESR ($r = 0.383$, $p = 0.006$) and negatively with C4 ($r = -0.304$, $p = 0.030$).

In conclusion, we found an increased prevalence of anti-C1q autoantibodies in BD patients with vascular involvement. Further large scale longitudinal studies are required to assess and clarify the significance and the pathogenic role of anti-C1q antibodies in BD and other autoimmune diseases in which vasculitis is a component.

Keywords: Anti-C1q antibodies; Behcet's disease; Complement; Vascular disease.

809. Subclinical Reduced G6PD Activity in Rheumatoid Arthritis and Sjögren's Syndrome Patients: Relation To Clinical Characteristics, Disease Activity and Metabolic Syndrome.

Gheita TA, Kenawy SA, El Sisi RW, Gheita HA and Khalil H.

Modern Rheumatology, 24: 612-617 (2014) IF: 2.206

Objective: Glucose-6-phosphate dehydrogenase (G6PD) is an important site of metabolic control in the pentose phosphate pathway. The purpose of this study was to investigate the enzyme activity of G6PD in Rheumatoid Arthritis (RA) and Sjögren's Syndrome (SS) patients not known to be deficient in this enzyme. It was also within the scope of the aim to find the relation of G6PD to the presence of metabolic syndrome (MetS) in these patients.

Methods: Erythrocyte G6PD activity was evaluated in 40 RA patients, 30 SS patients and in 30 age- and sex-matched control. The clinical characteristics, disease activity score (DAS28), SS disease activity (SSDAI) and damage (SSDDI) indices and presence of MetS of the included patients were analyzed in relation to the enzyme level.

Results: The G6PD activity in RA patients (7.72 ± 3.57 U/g Hb) was significantly reduced compared to that in the SS patients (11.55 ± 3.14 U/g Hb) and control (13.23 ± 3.34 U/g Hb) especially those with MetS (4.61 ± 1.84 U/g Hb) ($p < 0.001$).

There was a significant negative correlation of the G6PD activity with the disease duration and DAS28 ($p < 0.001$).

Conclusion: The results of this study, suggest that G6PD not only does not protect against MetS in RA, but may even be considered a risk factor for the development of this disorder. The identification of regulatory tools for G6PD activity may prove promising for treating the associated metabolic disorders and chronic inflammation in RA.

Keywords: G6pd; Rheumatoid Arthritis; Sjogrens Syndrome; Metabolic syndrome.

810. Detection of asymptomatic cranial Neuropathies in Patients with Systemic Lupus Erythematosus and their relation to antiribosomal P antibody levels and disease activity

Gaber W, Ezzat Y, El Fayoumy NM, Helmy H and Mohey AM

Clin Rheumatol, 33: 1459-1466 (2014) IF: 1.774

The objectives of this study are to assess the risk of asymptomatic cranial neuropathy among patients with systemic lupus erythematosus (SLE) and find any association with disease activity and antiribosomal P antibodies.

This study is a case-control study including 60 female patients and 30 healthy female controls. Disease activity was measured with the SLE disease activity index (SLEDAI). All patients were evaluated using evoked potentials, blink reflex, and levels of antiribosomal P antibodies. Patients with abnormal electrophysiological parameters had significantly higher levels of antiribosomal P antibodies ($P=0.034$) and secondary antiphospholipid syndrome ($P=0.044$). Antiribosomal P antibodies.

Keywords: Antiribosomal P Antibodies; Auditory Brain Reflex; Evoked Blink Reflex; Systemic Lupus Erythematosus.

811. Involvement of IL-23 in Enteropathic Arthritis Patients With Inflammatory Bowel Disease: Preliminary Results

Gheita TA, El Gazzar II, El-Fishawy HS, Aboul-Ezz MA and Kenawy SA.

Clinical Rheumatology, 33: 713-717 (2014) IF: 1.774

The role of interleukin (IL)-23 in the pathogenesis of inflammatory bowel disease (IBD) remains unclear. The aim of this work was to study the serum level of IL-23 in IBD with and without arthritis and determine its relation to the subsets and clinical features of the disease. Thirty-seven patients with IBD including 11 with arthritis were included in the study with a mean age of 30.86 ± 4.66 years. Twenty healthy subjects served as control. Seronegative spondyloarthropathy was present in 11 (29.73 %) of the IBD patients; Crohn's disease (CD) was present in 23 and 14 had ulcerative colitis (UC). Serum level of IL-23 was measured in all patients and control by ELISA. IL-23 was significantly higher in IBD patients (46.24 ± 27.19 pg/ml) compared to control (24.1 ± 2.31 pg/ml) ($p < 0.0001$) being higher in CD patients (52.57 ± 32.78 pg/ml) compared to those with UC (35.86 ± 6.41 pg/ml) ($p=0.026$). Furthermore, it was significantly higher in those with peripheral and/or axial arthritis (67.73 ± 40.85 pg/ml) compared to patients without (37.15 ± 10.37 pg/ml) ($p=0.03$). There was a tendency to a higher level in males (49.15 ± 30.97 pg/ml) compared to females (38.4 ± 9.54 pg/ml). Serum IL-23 is increased in IBD especially those with CD

associated with arthritis and sacroiliitis. The IL-23 could be added to the biomarkers of development of arthritis in IBD patients. These results also confirm the findings of previous studies on the critical role played by IL-23 in the pathogenesis of IBD making it an important new therapeutic target for these patients.

Keywords: IL23; IBD.

812. The Effect of Leflunomide On the Eye Dryness in Secondary Sjögren's Syndrome Associated With Rheumatoid Arthritis and in Rheumatoid Arthritis Patients

Amira Shahin, Sameh El-Agha and Ghada El-Azkalany

Clinical Rheumatology, 33: 925-930 (2014) IF: 1.774

The aim of this work was to clarify the effect of leflunomide (LEF) on the eye dryness in patients with secondary Sjögren's syndrome associated with rheumatoid arthritis (RA-sSS) and in patients with rheumatoid arthritis (RA). Seventy-five female patients, 45 with RA-sSS (group A) and 30 with RA (group B), taking methotrexate at a dose of 20 mg/week for more than 6 months were enrolled in this study. They all had a loading dose of leflunomide then were maintained at a dose of 20 mg/day in addition to methotrexate for another 3 months. The modified disease activity score (DAS28) was calculated and modified Schirmer's-I test was performed. Assessment of disease parameters was done to all patients before and after 3 months of taking LEF. The mean modified Schirmer's-I test showed a significant decrease after 3 months of taking LEF in group A ($3 \hat{A} \pm 1.6$ before versus $1.9 \hat{A} \pm 1.6$ after 3 months, $P < 0.001$), while this difference was non-significant in group B ($21.3 \hat{A} \pm 10$ versus $19.9 \hat{A} \pm 11$). One patient (group A) developed peripheral ulcerative keratitis (PUK) with exacerbation of disease activity (DAS-28 = 6.9) that improved by taking corticosteroids. Three patients (group A) had aggravation of punctate keratoconjunctivitis sicca with punctate erosions without PUK. The condition improved dramatically by stopping LEF and using topical lubricants. We report in this study a significant deterioration of the eye dryness in patients with sSS-RA after 3 months of receiving LEF in spite of the significant improvement of their DAS28. This finding was not clearly detected in RA patients. Close monitoring of eye dryness changes by special tests in patients using LEF is recommended, especially in cases with sSS-RA having very low baseline values.

Keywords: Eye Dryness; Leflunomide; Peripheral Ulcerative Keratitis; Punctate Keratoconjunctivitis Sicca; Rheumatoid Arthritis; Secondary Sjögren's Syndrome.

813. Therapeutic Potential of Hydroxychloroquine On Serum B-Cell Activating Factor Belonging To the Tumor Necrosis Factor Family (BAFF) in Rheumatoid Arthritis Patients

Amina A. Mahdy, Hala A. Raafat, Hussein S. El-Fishawy and Tamer A. Gheita

Bulletin of Faculty of Pharmacy, Cairo University, 52: 37-43 (2014)

Objective: To assess the serum B-cell activating factor belonging to the tumor necrosis factor family (BAFF) level in rheumatoid arthritis (RA) patients in view of different treatment regimens received and evaluate its relation with disease activity.

Patients and methods: Ninety female RA patients were included. Sixty were on disease modifying anti-rheumatic drugs

(DMARDs); 34 on hydroxychloroquine (HCQ) plus methotrexate (MTX), 26 on leflunomide (LFN) plus MTX and 30 newly diagnosed cases not yet on any treatment. Thirty age and gender matched healthy subjects served as controls. Full history taking, clinical examination and relevant laboratory investigations were performed. Disease activity score, in 28 joints (DAS-28), was calculated.

Results: Serum BAFF level was significantly higher in patients (1.82 ± 0.91 ng/ml) compared to control (0.71 ± 0.33 ng/ml; $p < 0.001$). There was a significantly lower BAFF and disease activity in patients receiving DMARDs (1.55 ± 0.73 ng/ml and 3.08 ± 0.73) compared to new cases (2.36 ± 1.02 ng/ml and 3.46 ± 0.82) ($p < 0.001$ and $p = 0.036$, respectively). Those receiving HCQ + MTX had a lower BAFF level (1.29 ± 0.51 ng/ml) compared to those receiving LFN + MTX (1.94 ± 0.85 ng/ml; $p = 0.002$). The BAFF level significantly correlated with the presence of anti-CCP antibodies, DAS28 and MTX dose in all RA patients ($r = 0.24$, $p = 0.02$; $r = 0.504$, $p < 0.001$; $r = 0.51$, $p < 0.001$, respectively). Only DAS28 and MTX dose would highly influence the BAFF level ($p = 0.015$ and $p = 0.001$, respectively).

Conclusion: Elevated level of BAFF in RA has been confirmed with a notable relation to disease activity making it a promising marker. The beneficial effect of hydroxychloroquine in dampening BAFF level throws light on the importance of considering it in combination among the newly developed biologics that also target B-cells.

Keywords: Serum BAFF; RA; DAS28; Hydroxychloroquine; Methotrexate; Leflunomide.

Dept. of Urology Dept

814. Slow VS Rapid Delivery Rate Shock Wave Lithotripsy for Pediatric Renal Urolithiasis: A Prospective Randomized Study

Salem HK, Fathy H, Elfayoumy H, Aly H, Ghonium A, Mohsen MA and Hegazy Ael R

Journal of Urology, 191(5):1370-1374 (2014) IF: 3.753

Purpose: We compared slow vs fast shock wave frequency rates in disintegration of pediatric renal stones less than 20 mm.

Materials and Methods: Our study included 60 children with solitary 10 to 20 mm radiopaque renal stones treated with shock wave lithotripsy. Patients were prospectively randomized into 2 groups, ie those undergoing lithotripsy at a rate of 80 shock waves per minute (group 1, 30 patients) and those undergoing lithotripsy at a rate of 120 shock waves per minute (group 2, 30 patients). The 2 groups were compared in terms of treatment success, anesthesia time, secondary procedures and efficiency quotient.

Results: Stone clearance rate was significantly higher in group 1 (90%) than in group 2 (73.3%, $p = 0.025$). A total of 18 patients in group 1 (60%) were rendered stone-free after 1 session, 8 required 2 sessions and 1 needed 3 sessions, while shock wave lithotripsy failed in 3 patients. By comparison, 8 patients (26.6%) in group 2 were rendered stone-free after 1 session, 10 (33.3%) required 2 sessions and 4 (13.3%) needed 3 sessions to become stone-free. Mean general anesthesia time was significantly longer in group 1 ($p = 0.041$). Postoperatively 2 patients in group 1 and 4 in group 2 suffered low grade fever (Clavien grade II). Significantly more secondary procedures (percutaneous nephrolithotomy, repeat shock wave lithotripsy) were required in group 2 ($p = 0.005$). The predominant stone analysis was calcium oxalate dihydrate in both groups. Efficiency quotient was 0.5869 and 0.3437 for group 1 and group 2, respectively ($p = 0.0247$).

Conclusions: In children with renal stones slow delivery rates of shock wave lithotripsy have better results regarding stone clearance than fast delivery rates.

Keywords: High-Energy Shock Waves; Kidney Calculi; Lithotripsy; Pediatrics; Urolithiasis.

815. Holmium: YAG Laser Ureteroscopic Lithotripsy for Ureteric Calculi in Children: Predictive Factors for Complications and Success

Elsheemy MS, Maher A, Mursi K, Shouman AM, Shoukry AI, Morsi HA and Meshref A.

World Journal of Urology, 32 (4): 985-990 (2014) IF: 3.423

Objectives: To evaluate the impact of age, stone size, location, radiolucency, extraction of stone fragments, size of ureteroscope and presence and degree of hydronephrosis on the efficacy and safety of holmium:YAG (Ho:YAG) laser lithotripsy in the ureteroscopic treatment of ureteral stones in children.

Methods: Between October 2011 and May 2013, a total of 104 patients were managed using semirigid Ho:YAG ureterolithotripsy. Patient age, stone size and site, radiolucency, use of extraction devices, degree of hydronephrosis and size of ureteroscope were compared for operative time, success and complications.

Results: In all, 128 URS were done with a mean age of 4.7 years. The mean stones size was 11 mm. Success rate was 81.25 %. Causes of failure were 12.5 % access failure, 1.5 % extravasation and 4.7 % stone migration. Overall complications were 23.4 %. Failure of dilatation and extravasation were detected only in children <2 years old. Extravasation was significantly higher in smaller ureters and cases with stone size >15 mm. Stone migration was significantly higher in upper ureteric stones.

Conclusions: Failure and complications rates in Ho:YAG ureterolithotripsy were significantly affected by younger age (<2 years), upper ureteric stones and smaller ureters but were not related to stone radiolucency or degree of hydronephrosis. Larger stones (>15 mm) were associated with increased complications. After multivariate analysis, the age of the patients remained significant predictor for failure of dilatation and stone migration, while size of the ureter was the only significant predicting factor for failure.

Keywords: Holmium Laser Intracorporeal Lithotripsy Stones Endourology Children.

816. Circulating miRNAs 21 and 221 as Biomarkers for Early Diagnosis of Prostate Cancer

Sameh Kotb, Ashraf Mosharafa, Mona Essawi, Heba Hassan, Alaa Meshref and Ahmed Morsy

Tumor Biology, 35: 12613-12617 (2014) IF: 2.84

To compare the expression of two promising circulating micro-ribonucleic acids (miRNAs 21 and 221) in patients with prostate cancer to subjects without cancer and to evaluate their potential role as specific noninvasive molecular biomarkers for prostate cancer diagnosis, circulating miRNAs 21 and 221 expression profiles were analyzed in 20 men aged 50–75 years, presenting with lower urinary tract symptoms (LUTSs) and undergoing transrectal ultrasound (TRUS)-guided prostate biopsy based on either elevated serum prostatespecific antigen (PSA) (>4.0 ng/ml) or suspicious digital rectal examination (DRE). The performance of miRNAs 21 and 221 in differentiating prostate cancer from

nonmalignant cases was evaluated and compared to DRE and elevated PSA. miRNA 21 was overexpressed in 90 % of group A vs. 10 % of group B, while miRNA 221 was overexpressed in 80 % of group A vs. 20 % of group B (p=0.001). MiRNA 21 overexpression had the highest performance as a diagnostic test with a sensitivity of 90 % and a specificity 90 % (p=0.02). No correlations were noted between Gleason score of prostate cancer cases and relative quantity (RQ) 21 (r=-0.355, p=0.292) or RQ 221 (r=-0.044, p=0.892). Our study showed that serum miRNAs 21 and 221 expression profiling tests may be used as specific noninvasive molecular biomarkers for prostate cancer diagnosis due to their higher sensitivity and specificity with a high negative predictive value leading to a decrease in the biopsies taken for patients with elevated serum PSA values.

Keywords: Mirnas . Prostate Neoplasms . Diagnosis .

817. Effect of Multiple Access Tracts During Percutaneous Nephrolithotomy on Renal Function: Evaluation of Risk Factors for Renal Function Deterioration

Amr S. Fayad, Mohamed G. Elsheikh, Ashraf Mosharafa, Ragheb El-Sergany, Mohammed A. Abdel-Rassoul, Ahmed Elshenofy, Hisham Ghamrawy, Ahmed Abd El Bary and Tarek Fayad

Journal of Endourology, 28: 775-779 (2014) IF: 2.095

Purpose: To assess the impact of multiple access tracts during percutaneous nephrolithotomy (PCNL) on short and midterm renal function, and to determine risk factors predicting renal function deterioration and/or recoverability. Patients and Methods: Patients undergoing PCNL with multiple punctures were prospectively enrolled. Preoperative evaluation included dimercaptosuccinic acid and diethylenetriaminepentaacetic acid renography. Patients were classified according to baseline renal function into patients with normal (<1.4mg/dL) serum creatinine (group A) and patients with elevated (≥1.4mg/dL) serum creatinine (group B). Patients were followed with serial serum creatinine evaluations and a repeated renography at 12 months. Factors evaluated for possible impact on renal function changes included preoperative renal function, number of access tracts, hypertension, and diabetes mellitus.

Results: There were 102 patients 21 to 65 (mean 39.9) years who completed the study. Fifty patients (group A) had normal preoperative serum creatinine levels and glomerular filtration rate (GFR), which showed no statistically significant change 12 months after PCNL. Fifty-two patients had baseline renal impairment (group B), and they experienced statistically significant worsening of the serum creatinine level and GFR at 12 months postoperatively (P<0.001). Ten (19.23%) patients in group B had a significant deterioration of GFR more than 25%. Independent risk factors for this poor outcome were elevated (≥1.4 mg/dL) preoperative serum creatinine level, diabetes, and hypertension.

Conclusion: PCNL with multiple tracts carries a risk of adversely affecting renal function. Preoperative baseline renal impairment, diabetes, and hypertension are risk factors for significant renal function deterioration after the procedure.

Keywords: Percutaneous nephrolithotomy; Multiple tracts; Renal function.

818. Management of Obstructive Calcular Anuria With Acute Renal Failure in Children Less Than 4 Years in Age: A Protocol for Initial Urinary Drainage in Relation To Planned Definitive Stone Management

ElSheemy MS, Shoukry AI, Shouman AM, ElShenoufy A, Aboulela W, Daw K, Hussein AA and Morsi HA

J. of Pediatric Urology, 10 (6): 1126-1132 (2014) IF: 1.413

Objectives: To describe and evaluate our protocol for management of children 4 years old with obstructive calcular anuria (OCA) and acute renal failure (ARF) to improve selection of initial urinary drainage (ID) method and to facilitate subsequent definitive stone management (DSM) as studies discussing this special group of patients are still few. **Patients and Methods:** Patients with a contraindication to any method of ID were excluded. Decision (percutaneous nephrostomy (PCN) or double J (JJ) stent) was based on degree of hydronephrosis and planned DSM. We used 4.8-5Fr JJ or 6-8Fr PCN under general anesthesia and fluoroscopic guidance. According to our protocol, JJ is inserted for hydronephrosis grade 1. When the hydronephrosis is >grade 1, patients with radiolucent stones were treated by JJ whatever the site of the stone. When the stones were radiopaque, PCN was reserved for stones in a solitary functioning kidney and bilateral ureteric stones prepared for subsequent bilateral ureterolithotomy (or stone prepared for ureterolithotomy in a solitary kidney). After normalization of renal functions, DSM was staged attacking only one side before discharge. Both sides were cleared at the same session in cases with bilateral ureterolithotomy. Renal or ureteric stones suitable for SWL in a solitary kidney were treated with percutaneous nephrolithotripsy (PNL) or ureteroscopy. This was followed also in patients with bilateral stones suitable for SWL by clearing one side using ureteroscopy or PNL before discharge. Open surgery (OS) was reserved for cases with failed ureteroscopy or PNL, for ureteric stones >2.5 cm in size or very large volume complex renal stones. Stone free rate (SFR) was evaluated by CT. Our protocol was evaluated as regard recovery of renal functions, complications, and number of interventions to clear stones. **Results:** This study included 62 boys and 22 girls presented with anuria for 1-4 days. JJ and PCN were inserted in 105 and 30 ureterorenal units (URU), respectively. Creatinine returns normal within 72 h. JJ insertion formed a part of DSM in 78/159 (49%) URU (stones prepared for extracorporeal shockwave lithotripsy or oral chemolytic dissolution therapy). PCN was the ideal tract for subsequent PNL in 11/159 (6.9%) URU. Accordingly, ID participated by 55.97% in DSM. Both operative and imaging times were slightly longer with PCN than JJ. There was no statistically significant difference in the insertion success or mean period to return to normal chemistry. Complications of both methods were mild and without any significant difference. Endourologic procedures constituted the majority of our interventions. Open surgical and endoscopic interventions for clearance of stones (including ID, treatment conversion and 2ry procedures) were done once for 25 patients, twice for 43 patients while it was needed three times for 16 patients. Total number of interventions was 149 procedures. SFR was 94%. **Conclusion:** Our protocol ensures adequate ID with minimal complications when using our selection criteria in children ≤4 years in age with OCA and ARF. It also minimizes number of subsequent procedures to clear stones. Complications and success in insertion and drainage were equivalent in PCN and JJ groups.

Keywords: Anuria; Children; Nephrostomy; Stents; Urinary Calculi.

819. Surgical Complications and Graft Function Following Live-Donor Extraperitoneal Renal Transplantation in Children 20 Kg Or Less

ElSheemy MS, Shouman AM, Shoukry AI, Soaida S, Salah DM, Yousef AM, Morsi HA, Fadel FI and Sadek SZ

Journal of Pediatric Urology, 10 (4): 737-743 (2014) IF: 1.413

Objectives: To evaluate the effect of patient, surgical, and medical factors on surgical complications and graft function following renal transplantation (Tx) in children weighing ≤ 20 kg, because the number of this challenging group of children is increasing. **Patients and Methods:** Between June 2009 and October 2013, 26 patients received living donor renal allotransplant using the extraperitoneal approach (EPA). The immunosuppression regimen was composed of prednisolone, mycophenolate mofetil, and ciclosporin or tacrolimus. **Results:** The mean weight was 16.46 ± 2.61 kg. Mean cold ischemia time was 53.85 ± 12.35 min. The graft survival rate (GSR) and patient survival rate (PSR) were 96% at 3 years. Acute rejection episodes (AREs) occurred in eight patients (30%). Postoperative surgical complications were ureteral leakage (3), vesicoureteric reflux (2), and renal vein thrombosis (2) (with one graft nephrectomy). Mean follow-up was 37.5 ± 7.4 months. **Conclusion:** Excellent PSR and GSR can be achieved in low weight (<20 kg) recipients. Even in very low weight patients, the EPA was used. No cases were reported with primary graft non-function due to use of living donors, increasing pre-Tx body weight to at least 10 kg and maintaining adequate filling pressure before graft reperfusion. The presence of related donors and use of induction therapy and tacrolimus decreased the rate of ARE while the presence of pre-Tx lower urinary tract surgical interventions increased the rate of ureteric complications, but this was statistically insignificant. **Keywords:** Renal transplantation; Extraperitoneal approach; Live donor; Low body weight children; Pediatric.

820. Human Urinary Myiasis Due To Larvae of Clogmia (Telmatoscopus) Albipunctata Williston (Diptera: Psychodidae) First Report in Egypt

El-Badry AA, Salem HK and El-Aziz Edmardash YA.

J Vector Borne Dis, 51(3):247-249 (2014) IF: 0.647

Human myiasis is defined as “the infestation of the tissue of living human with dipterous larvae”¹. Parasitologically myiasis could be classified as obligatory, facultative or accidental. Clinically myiasis may be classified according to part of the body tissue invaded. Cutaneous myiasis is the commonest type. Body cavity myiasis; nasopharyngeal, ocular, aural and the gastrointestinal tract urogenital system are less common. Urethral myiasis is exceptionally rare, even in sites usually protected by clothes, inaccessible for the flies¹⁻². A large number of fly species may cause urinary myiasis. Larvae of *Fannia scalaris*³ is the most frequent cause of urinary myiasis. Other fly genera *Musca*, *Sarcophaga*, *Lucilia*, *Wohlfahrtia* or *Calliphora* were also associated with cases of urinary myiasis⁴. Few cases of urinary myiasis were caused by *Eristalis*^{5,6}, *Psychoda*⁷ and *Megaselia*⁸ flies. Cases of urinary myiasis were caused by larvae of *Clogmia albipunctata* worldwide⁹ but had never been reported before in our region.

Keywords: *Clogmia Albipunctata*; Egypt; Human Myiasis.

Faculty of Medicine

Dept. of Andrology & Sexology

114. Girth Augmentation of the Penis Using flaps “Shaeer’s augmentation Phalloplasty”: the Superficial Circumflex Iliac Flap

Osama Shaeer

Journal of Sexual Medicine, 11: 1856-1862 (2014) IF: 3.15

Introduction: Penile girth augmentation can be achieved by various techniques, among which are liposuction injection, synthetic grafts, and autologous grafts, with variable outcome, mostly related to viability and receptivity of the tissue used for augmentation. Flaps are considered superior to grafts considering their uninterrupted blood supply.

Aim: The current work describes long-term experience with penile girth augmentation using the superficial circumflex iliac artery and vein (SCIAV) flap.

Methods: SCIAV flap was used for penile girth augmentation in 40 candidates who followed up for a minimum of 18 months. The flap was mobilized from the groin region. The penis was pulled out of a peno-pubic incision. The flap was tunneled under the pubic region to emerge at the base of the penis and was sutured to the subcoronal area and on either sides of the spongiosum. Another session was required for either de-bulking of the oversized flap (four overweight candidates), flap pedicle (n=6), or for donor site scar revision (n=11).

Main Outcome Measures: Gain in girth in centimeters was evaluated.

Results: Excluding dropouts (n=8) and participants who had encountered de-bulking of the flap body (n=4), 40 participants had a preoperative average flaccid girth (AFG) of 9.3±1.1cm. Immediately postoperative AFG was 14.9±1.1?cm (P<0.001). Postoperative AFG at the final follow-up visit (a minimum of 18 months) was 14.5±1.1 cm (55.6% gain compared with baseline, P< 0.001).

Conclusion: SCIAV flap is a reliable option for long-lasting and sizable penile girth augmentation. One-stage augmentation is more suited for non-obese candidates. A second session may be indicated in overweight candidates or for scar revision.

Keywords: Girth; Augmentation; Penis; Flap; Widening; Broadening.

115. Same-Session Dorsal Vein Ligation and Testing by Intracavernous Injection Prior to Penile Prosthesis Implantation (DVL-ICI-PPI)

Osama Shaeer and Kamal Shaeer

Journal of Sexual Medicine, 11: 2333-2337 (2014) IF: 3.15

Introduction: Complications of penile prosthesis implantation (PPI) are rare, nevertheless can be grave. In cases with veno-occlusive dysfunction (VOD), alternative surgical techniques such as dorsal vein ligation (DVL) are controversial. Some patients may opt for trial at DVL to avoid the possible complications of PPI. However, this may be associated with disappointment if DVL fails and another procedure is required.

Aim: The aim if this study is to evaluate the results of a combined approach involving DVL, same-session testing by intracavernous injection (ICI) of prostaglandin E1 (PGE1), and immediate

implantation of a penile prosthesis (PPI) in case of poor response to DVL.

Main outcome measures: Long-term erectile function in cases with favorable intraoperative response to DVL.

Methods: Twenty-six patients with refractory VOD were operated upon. Through a peno-pubic incision, DVL was performed, followed by ICI of 20µg PGE1 in two divided doses, 10µg each, 15 minutes apart. Group 1 exhibited full rigidity in response to the first dose. Group 2 exhibited full rigidity in response to the second dose. PPI was not performed for either. Group 3 exhibited suboptimal response to both doses, and PPI was performed through the same incision. Patients were followed up from 24 to 48 months using International Index of Erectile Function-5 scoring.

Results: For Group 1 (n=8), six patients experienced normal erectile function following DVL throughout the whole follow-up period of 48 months (23.1% of all patients), and two patients relapsed. Group 2 (n=6) (23.1%) reported normal erectile function for an average of 6 months, then relapsed. Group 3 (n=12) had a penile prosthesis implanted in the same setting.

Conclusion: Combined DVL-ICI-PPI can spare around 23.1% of young patients with VOD from PPI, at no additional risk. Full response to 10µg PGE1 at intraoperative testing carries good prognosis to DVL on the long run. Investigation of a larger number of patients is necessary before reaching a final conclusion.

Keywords: Penile prosthesis; Vein ligation; Venoligation; Veno-occlusive erectile dysfunction; Penile implant; Vascular surgery.

116. Skin Reduction Technique for Correction of Lateral Deviation of the Erect Straight Penis

Osama Shaeer

Journal of Sexual Medicine, 11: 1863-1866 (2014) IF: 3.15

Introduction: Lateral deviation of the erect straight penis (LDESP) refers to a penis that despite being straight in the erect state, points laterally, yet can be directed forward manually without the use of force. While LDESP should not impose a negative impact on sexual function, it may have a negative cosmetic impact.

Aim: This work describes skin reduction technique (SRT) for correction of LDESP.

Methods: Counseling was offered to males with LDESP after excluding other abnormalities. Surgery was performed in case of failed counseling. In the erect state, the degree and direction of LDESP were noted. Skin on the base of the penis on the contralateral side of LDESP was excised from the base of the penis and the edges approximated to correct LDESP. Further excision was repeated if needed. The incision was closed in two layers.

Main Outcome Measure: Long-term efficacy of SRT was the main outcome measure.

Results: Out of 183 males with LDESP, 66.7% were not sexually active. Counseling relieved 91.8% of cases. Fifteen patients insisted on surgery, mostly from among the sexually active where the complaint was mutual from the patient and partner. SRT resulted in full correction of the angle of erection in 12 cases out of 15. Two had minimal recurrence, and one had major recurrence indicating re-SRT.

Conclusions: LDESP is more common a complaint among those who have not experienced coital relationship, and is mostly relieved by counseling. However, sexually active males with this

complaint are more difficult to relieve by counseling. A minority of patients may opt for surgical correction. SRT achieves a forward erection in such patients, is minimally invasive, and relatively safe, provided the angle of erection can be corrected manually without force. Shaeer O. Skin reduction technique for correction of lateral deviation of the erect straight penis.

Keywords: Penile deviation; Penile curvature; Bent penis; Penile bending; Lateral deviation of the erect straight penis; Skin reduction technique.

117. The Global Online Sexuality Survey (GOSS): Male Homosexuality Among Arabic-Speaking Internet Users in the Middle East—2010

Osama Shaeer and Kamal Shaeer

Journal of Sexual Medicine, 11: 2414-2420 (2014) IF: 3.15

Introduction.: The prevalence of male homosexuality is difficult to elicit considering the sensitivity of one's sexual orientation. The Global Online Sexuality Survey (GOSS) is an online epidemiologic study of male and female sexuality. The onlinenature of GOSS allows more confidentiality and wider geographic reach, particularly important in investigating sexual issues within the more conservative societies.

Aim: This study aims to determine the prevalence of male homosexuality among Internet users in the Arabic-speaking Middle East and the unique characteristics of this subset of the population.

Main Outcome Measures: Prevalence of male homosexuality.

Methods: In the year 2010, GOSS was offered to Arabic-speaking web surfers above 18 years of age in the Middle East. Potential participants were invited via advertising on Facebook®. Invitations were dispatched randomly with the exception of geographic region and age, regardless web surfing preferences. GOSS relied in part on validated questionnaires such as the International Index of Erectile Function, as well on other nonvalidated questions.

Results: 17.1% reported desire toward the same sex, of whom 5.6% had homosexual encounters, mostly in the form of external stimulation rather than intercourse, and exclusively undercover. An overwhelming majority was egodystonic (78.2%).

Conclusion: This—to our knowledge—the first online survey to address the prevalence of homosexual orientation and practice in the Middle East, discriminating desire from practice, ego-syntonic from ego-dystonic, and investigating the pattern of practice. Homosexual desire is present in the Middle East as it is around the world, and homosexual encounters are as prevalent. Yet, the undercover and ego-dystonic states prevail.

Keywords: Homosexuality; Survey; Internet; Middle east; Arab.

Dept. of Cardiology

118. Comparison Between Ultrasound-Guided Compression And Para-Aneurysmal Saline Injection In The Treatment Of Postcatheterization Femoral Artery Pseudoaneurysms

Mahmoud Farouk Mohamed Mohamed El-Mahdy

Am J Cardiol, 13:: 871-876 (2014) IF: 3.425

Management of postcatheterization femoral artery pseudoaneurysm (FAP) is problematic. Ultrasound-guided compression (UGC) is

painful and cumbersome. Thrombin injection is costly and may cause thromboembolism. Ultrasound-guided para-aneurysmal saline injection (PASI) has been described but was never compared against other treatment methods of FAP. We aimed at comparing the success rate and complications of PASI versus UGC. We randomly assigned 80 patients with postcatheterization FAPs to either UGC (40 patients) or PASI (40 patients). We compared the 2 procedures regarding successful obliteration of the FAP, incidence of vasovagal attacks, procedure time, discontinuation of antiplatelet and/or anticoagulants, and the Doppler waveform in the ipsilateral pedal arteries at the end of the procedure. There was no significant difference between patients in both groups regarding clinical and vascular duplex data. The mean durations of UGC and PASI procedures were 58.14 – 28.45 and 30.33 – 8.56 minutes, respectively (p [0.045). Vasovagal attacks were reported in 10 (25%) and 2 patients (5%) treated with UGC and PASI, respectively (p [0.05). All patients in both groups had triphasic Doppler waveform in the infrapopliteal arteries before and after the procedure. The primary and final success rates were 75%, 92.5%, 87.5%, and 95% for UGC and PASI, respectively (p [0.43). In successfully treated patients, there was no reperfusion of the FAP in the follow-up studies (days 1 and 7) in both groups. In conclusion, ultrasound-guided PASI is an effective method for the treatment of FAP. Compared with UGC, PASI is faster, less likely to cause vasovagal reactions, and can be more convenient to patients and physicians. 2014 Elsevier Inc. All rights reserved.

Keywords: Comparison between ultrasound; Guided compression; Para; Aneurysmal saline injection in the treatment of postcatheterization femoral artery pseudoaneurysms.

Dept. of Clinical & Chemical Pathology

119. Predictors of Red Cell Alloimmunization in Multitransfused Egyptian Patients with β -Thalassemia

Eiman Hussein, Nermeen Desooky, Abeer Rihan and Abeer Kamal

Arch Pathol Lab Med, 138: 684-688 (2014) IF: 2.88

Thalassemia is a major health problem in Egypt. Red blood cell alloimmunization is an important complication in transfusion-dependent patients.

Objectives: To determine alloimmunization prevalence in Egyptian patients with β -thalassemia and to evaluate risk factors that could influence alloimmunization, with the hope of minimizing transfusion-associated risks in those patients.

Design: Records of 272 patients with β -thalassemia who are receiving regular blood transfusions, matched for ABO-Rh(D), were analyzed. Alloantibody identification was performed by DiaMed-ID microtyping system. Autoantibodies were detected by direct Coombs test.

Results: Alloimmunization incidence was 22.8% with 123 alloantibodies detected in 62 patients. The most common alloantibody was Rh-related (37.4%; 46 of 123), comprising anti-E (14.6%; 18 of 123), anti-D (8.9%; 11 of 123), anti-C (8.9%; 11 of 123), and anti-c (4.9%; 6 of 123), followed by anti-Kell (26%; 32 of 123), anti-MNS (9.8%; 12 of 123), anti-Kidd (8.9%; 11 of 123) anti-Duffy (8.1%; 10 of 123), anti-Le (5.7%; 7 of 123), anti-Lu (2.4%; 3 of 123), and anti-P1 (1.6%; 2 of 123). Anti-D antibodies developed in 34.5% of all Rh negative patients. Eighty percent of all anti-D antibodies developed in patients older than

18 years. Males had the highest alloimmunization incidence. Alloimmunization incidence increased with the number of units transfused ($P = .01$). Patients who received unfiltered blood had a higher alloimmunization rate than did those who always received leukoreduced blood ($P = .001$). Splenectomized patients had a higher alloimmunization rate (32%; 40 of 125) than did those who did not have a splenectomy (16.3%; 24 of 147; $P = .003$). Autoantibodies occurred in 1.5% (4 of 272) of all patients.

Conclusion: Transfusion of leukoreduced and phenotypically matched cells for selective antigens may help reduce expenses and risks of alloimmunization in patients with thalassemia.

Keywords: Red cell alloimmunization; Multitransfusion.

120. Interleukin-18-607C/A Gene Polymorphism In Egyptian Asthmatic Children

Hala Hamdi Shaaban, Abeer Mohamed Mohy, Abdel-Rahman Ahmed Abdel-Razek and Amira Abdel Wahab

Molecular Diagnosis and Therapy, 18(4): 427-434 (2014)
IF: 2.589

Background Asthma is a multifactorial respiratory disease determined by interactions of multiple disease susceptibility genes and environmental factors. Interleukin (IL)-18 is an important cytokine for initiating and perpetuating the catabolic and inflammatory response in allergic asthma. A number of single nucleotide polymorphisms that influence IL-18 production are found in the gene promoter region.

Objectives: The aim of this study was to investigate the association of IL-18 -607C/A promoter polymorphism with asthma and whether this polymorphism influenced the severity of asthma in affected children. The influence of this promoter gene polymorphism on total serum IgE level in studied subjects was also investigated.

Subjects and Methods: This study was carried out at the Allergy Clinic of Abu El Reesh Children's Hospital at Cairo University, Egypt. This study included 40 asthmatic children, subdivided into four groups according to different degrees of asthma severity, and 20 apparently healthy subjects as the control group. All cases were subjected to history taking, clinical examination, and the following laboratory investigations: complete blood count, total serum IgE level assay by ELISA and genomic DNA extraction, and analysis for IL-18 -607C/A promoter gene polymorphism using the PCR-RFLP (restriction fragment length polymorphism) technique.

Results: In the present study the IL-18 -607AA genotype frequency was higher in cases (22.5 %) than in the control group (15 %); however, the difference was not statistically significant ($p = 0.773$). No statistically significant difference between the degree of asthma severity and IL-18 -607C/A polymorphism was found ($p = 0.489$). No significant association could be detected upon comparing the frequencies of C and A alleles among the two studied groups ($p = 0.366$). Also, no significant differences were demonstrated for the allele frequencies when the intermittent with mild [odds ratio (OR) = 2.72, 95 % CI 1.03–2.33, $p = 0.067$], intermittent with moderate, and severe (OR = 2.8, 95 % CI 1.01–8.5, $p = 0.066$) asthma groups were compared. The median value of the total serum IgE level in asthmatic cases with the mutant genotype (AA) was significantly higher [360 IU/L (96.6–1,340 IU/L)] than in the control group [119 IU/L (70.6–158.9 IU/L)] ($p = 0.033$).

Conclusion: No significant statistical difference was encountered regarding the distribution of IL-18 -607C/A genotypes and allele frequencies in asthma patients and healthy controls. Also, there were no significant associations between asthma severity and different genotypes or alleles. The median value of the total serum IgE level in asthmatic cases with the mutant genotype (AA) was significantly higher than in the control group. Thus, IL-18 -607AA genotype frequency might be related to higher total serum IgE.

Keywords: Asthmatic; IL-18; PCR; RFLP.

121. Blood Donor Recruitment Strategies and their Impact on Blood Safety in Egypt

Eiman Hussein

Transfusion and Apheresis Science, 50: 63-67 (2014) IF: 1.072

Introduction: Because of the high incidence of HCV, blood safety presents a serious challenge in Egypt. Given the constrained economy which limits the implementation of nucleic acid amplification technology, proper recruitment of blood donors becomes of paramount importance. To evaluate the effectiveness of blood donor recruitment strategies, the seroprevalence of positive infectious markers among blood donors was studied.

Materials and methods: Donors' records covering the period from 2006–2012 were reviewed. Blood donations were screened for HCV antibodies, HBs antigen (HBsAg), HIV-1 and 2 and syphilis antibodies.

Results: of 308,762 donors, 63.4% were voluntary donors (VD). VD of 2011–2012 were significantly younger than family replacement donors (RD). The overall prevalences of HCV antibodies, HBsAg, HIV and syphilis antibodies were 4.3%, 1.22%, 0.07%, and 0.13%, respectively. All tested markers (except HIV) were significantly higher among RD, when compared to VD ($P < 0.0001$). A consistent steady trend for decrease in HCV seropositivity was observed in RD and VD from 8.9% and 4.2% to 3.8% and 1.5%, respectively. A trend for decrease in HBsAg was demonstrated in VD from 1.2% to 0.53%.

Conclusion: The decreasing trends in HCV antibody and HBs antigen is promising and may reflect the improved donor selection criteria.

Keywords: HIV; HBV; HCV; Syphilis; Voluntary donors; Family donors.

122. Evaluation of Infectious Disease Markers in Multitransfused Egyptian Children with Thalassemia

Eiman Hussein

Annals of Clinical and Laboratory Science, 44: 62-66 (2014)
IF: 0.893

In an attempt to evaluate blood supply safety and the potential effect of the screening tests performed in our center, the frequency of hepatitis C virus (HCV) antibody, hepatitis B surface antigen (HBsAg), and human immunodeficiency virus (HIV) antibody were evaluated among multitransfused Egyptian children with thalassemia. Samples from 200 children with β thalassemia were tested for HCV antibody, HBsAg, and HIV-1 and 2 antibodies. ELISA was used for all tests. HCV positive samples were confirmed by RT-PCR. The study included 96 males and 104 females. Their mean age was 9.2 ± 4.5 . Forty-eight

patients were positive for HCV antibody (24%); all were confirmed positive by PCR. Four HCV-positive patients were also HBsAg-positive. Six patients (3%) were HBsAg-positive. No patient was HIV-positive. Older ages were significantly associated with an increased incidence of positive infectious markers ($p < 0.05$). The frequency of HCV infection is considerably high among Egyptian children with thalassemia. It is therefore important to implement measures to improve blood transfusion screening; nucleic acid testing, which could help reduce transmission of HCV during the window period, should be considered

Keywords: HCV; HIV; HBV.

123. Clinical and Quality Evaluation of Red Blood Cell Units Collected Via Apheresis Versus Those Obtained Manually

Eiman Hussein and Azza Enein

Lab Med, 45: 34-37 (2014) IF: 0.489

To evaluate the impact of collection procedure on the in vitro quality of red blood cells (RBC), we studied 30 units of apheresis-prepared RBC (ARBC) and 30 units of manually collected RBC (MRBC). We performed assays on day 1 and day 21 of the study, evaluating red cell mass volume (RCM); rate of hemolysis; pH, and levels of sodium, potassium, adenosine triphosphate (ATP), 2,3-diphosphoglycerate (2,3-DPG) and glucose. Eight patients with aplastic anemia received RBC transfusions of both components and their post-transfusion hematocrit (HCT) levels were compared. On day 21, we observed a significant drop of sodium and glucose levels in the ARBC group, compared with the MRBC group ($P < 0.05$). ARBC group demonstrated higher RCM that provided significantly higher HCT values to our group of anemic patients ($P < 0.05$). Hemolysis was significantly lower in the ARBC group, compared with the MRBC group ($P < 0.05$). At day 21, both groups had no detectable 2,3-DPG. Specimens from both groups retained ATP in sufficiently healthy amounts. The ARBC group demonstrated higher RCM and lower hemolysis levels compared with the MRBC group.

Keywords: Apheresis-prepared red cells; Manually prepared red cells; Hemolysis; in vivo assay, In vitro assay; Storage days.

124. Transforming Growth Factor- β 1 Gene Expression in Hepatocellular Carcinoma: A Preliminary Report

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Arab Journal of Gastroenterology, 15: 142-147 (2014)

Background: and study aims The transforming growth factor (TGF)- β signalling pathway plays a dual role in hepatocarcinogenesis. It has been recognised for its role as a tumour suppressor as well as a tumour promoter depending on the cellular context. The aim of this study was to investigate the clinical significance of serum TGF- β 1 level and TGF- β 1 messenger RNA (mRNA) in the peripheral blood of liver cirrhosis and hepatocellular carcinoma (HCC) patients as noninvasive biomarkers in diagnosing HCC.

Patients and methods: Twenty patients were allocated to each of the liver cirrhosis and HCC groups, in addition to 20 healthy

volunteers. TGF- β 1 gene expression in peripheral blood was quantitated using real-time polymerase chain reaction (PCR), while serum TGF- β 1 was analysed using enzyme-linked immunosorbent assay (ELISA).

Results: TGF- β 1 gene expression was significantly lower in HCC patients (median 0.401 (0.241–0.699) fold change) than in liver cirrhosis patients (median 0.595 (0.464–0.816)) ($p = .042$) and normal controls (median 1.00 (0.706–1.426) fold change) ($p = 0.001$). TGF- β 1 gene expression showed significant positive correlation with serum TGF- β 1 ($r = 0.272$, $p = 0.036$) and significant negative correlation with alpha-fetoprotein (AFP) ($r = -0.528$, $p = 0.001$). Receiver operating characteristic (ROC) analysis was conducted for TGF- β 1 gene expression in comparison with AFP. The area under the curve for TGF- β 1 gene expression was 0.688 (95% CI = 0.517–0.858) ($p = 0.042$) and AFP was 0.869 (95% CI = 0.761–0.976) ($p = 0.001$). The sensitivity and specificity of TGF- β 1 gene expression were 65% and 75%, respectively, at a cutoff value of 0.462 fold change.

Conclusion: TGF- β 1 gene expression in the peripheral blood may be used as a molecular marker for the diagnosis of HCC. Additional studies on a large-scale population are necessary to gain greater insight into the impact of TGF- β 1 gene expression in the pathogenesis of HCC.

Keywords: Transforming growth factor- β 1; Gene expression; Hepatocellular carcinoma; Real-time PCR.

Dept. of Dermatology

125. Transforming Growth Factor- β 1 Gene Polymorphism in Mycosis Fungoides

A. A. Zayed, M. R. E. Abdel-Halim, K. S. Sayed, F. N. Mohammed, D. M. Hany and K. S. Amr

Clinical and Experimental Dermatology, 39: 806-809 (2014)

IF: 1.234

Background: Dysregulation in transforming growth factor (TGF)- β 1 signalling pathways has been linked to cancer.

Aim: To study the association between single nucleotide polymorphisms (SNPs) of the TGF- β 1 gene and mycosis fungoides (MF).

Methods: Using restriction fragment length polymorphism analysis, SNPs in the TGF- β 1 gene were studied in 55 patients with MF of different stages and in 100 apparently healthy controls.

Results: A significant difference was found between patients and controls in distribution of the different TGF- β 1 genotypes, with mutant forms (T/C, T/T) encountered significantly more often in patients with MF ($P < 0.001$). The heterozygous genotype (T/C) was significantly associated with patch stage MF, whereas the homozygous genotype (T/T) was significantly associated with tumour stage (stage IIb) MF ($P = 0.001$), although this study included only a small number of these patients.

Conclusions: Mutant TGF- β 1 genotypes are significantly associated with MF in Egyptian patients, with the homozygous genotype (T/T) having a stronger association with tumour stage (stage IIb).

Keywords: β 1 gene.

Dept. of Diagnostic Radiology

126. Colorectal Cancer Liver Metastases: Long-Term Survival and Progression-free Survival After Thermal Ablation Using Magnetic Resonance-Guided Laser-Induced Interstitial Thermotherapy in 594 Patients: Analysis of Prognostic Factors

Thomas J. Vogl, Alena Dommermuth, Britta Heinle, Nour-Eldin A. Nour-Eldin, Thomas Lehnert, Katrin Eichler, Stephan Zangos, Wolf O. Bechstein and Nagy N.N. Naguib

Investigative Radiology, 2014 Jan;49(1): 48-56 (2014) IF: 4.453

Purpose: The purpose of this study was the evaluation of prognostic factors for long-term survival and progression-free survival (PFS) after treatment of colorectal cancer (CRC) liver metastases with magnetic resonance-guided laser-induced interstitial thermotherapy (LITT).

Patients And Methods: We included 594 patients (mean age, 61.2 years) with CRC liver metastases who were treated with LITT. The statistical analysis of the long-term survival and PFS were based on the Kaplan-Meier method. The Cox regression model tested different parameters that could be of prognostic value. The tested prognostic factors were the following: sex, age, the location of primary tumor, the number of metastases, the maximal diameter and total volume of metastases and necroses, the quotient of total volumes of metastases and necroses, the time of appearance of liver metastases and location in the liver, the TNM classification of CRC, extrahepatic metastases, and neoadjuvant treatments.

Results: The median survival was 25 months starting from the date of the first LITT. The 1-, 2-, 3-, 4-, and 5-year survival rates were 78%, 50.1%, 28%, 16.4%, and 7.8%, respectively. The median PFS was 13 months. The 1-, 2-, 3-, 4-, and 5-year PFS rates were 51.3%, 35.4%, 30.7%, 25.4%, and 22.3%, respectively. The number of metastases and their maximal diameter were the most important prognostic factors for both long-term survival and PFS. Long-term survival was also highly influenced by the initial involvement of the lymph nodes.

Conclusions: For patients treated with LITT for CRC liver metastases, the number and size of metastases, together with the initial lymph node status, are significant prognostic factors for long-term survival.

Keywords: Colorectal cancer; liver metastases; LITT

127. Whole-Body MR Angiography: First Experiences with the New Tim CT Technology with Single Contrast Injection.

Nagy N.N. Naguib, Kevin Bohrt, Nour-Eldin A. Nour-Eldin , Boris Schulz , Ahmed M. Tawfik , Petra Siebenhandel, Boris Bodelle, Katrin Eichler, Anton Moritz, Thomas J. Vogl and Stephan Zangos

Journal of Magnetic Resonance Imaging, 39(2): 434-439 (2014) IF: 2.788

Purpose: To assess image quality, presence of artifacts, arterial stenosis, and interobserver agreement of Tim-CT in assessment of the arterial system using contrast-enhanced whole-body-MRA (CE-Wb-MRA) with a single contrast-medium injection in patients with arteriosclerosis.

Materials and Methods: The retrospective study included 18 patients (mean age, 68 years). A total of 468 arteries were evaluated. CE-Wb-MRA was performed using Tim-CT technology on a 1.5 Tesla (T) MRI after injecting a single dose of Vasovist. Evaluations were independently performed by two radiologists. The arterial system was divided into seven anatomic locations. Each radiologist assessed the image quality, degree of artifacts, and arterial stenosis in different locations.

Results: All Wb-MRA examinations were technically successful. Image quality : 28.42% arteries were excellent, 29.17% were good, 22.54% were satisfactory, 9.40% were poor, and 5.13% of insufficient quality. Occurrence of artifacts: 37.25% were free of artifacts, 49.44% minimal artifacts not affecting diagnosis, and 13.31% strong artifacts not permitting a diagnosis. A total of 60.00% arteries showed no stenosis, 8.76% were =50% stenotic, 5.17% were 51-75% stenotic, 4.38% were 76-99%, and 8.54% total occlusion. The interobserver agreement was good for supra-aortic, pelvic, and upper and lower leg regions.

Conclusion: CE-Wb - MRA using the TimCT technology and with a single contrast injection is a feasible tool for whole-body MRA.

Keywords: Whole - body ; MR angiography; TimCT technology.

128. Neoadjuvant TACE Before Laser Induced Thermotherapy (LITT) in the Treatment of Non-Colorectal non-breast Cancer Liver Metastases: Feasibility and Survival Rates

Thomas J.Vogl, Martin Kreuzträger, Tatjana Gruber-Rouh, Katrin Eichler, Nour-Eldin A.Nour-Eldin, Stephan Zangos and Nagy N.N. Naguib

European Journal of Radiology, 83: 1804-1810 (2014) IF: 2.16

Purpose: To evaluate safety, feasibility and overall survival rates for transarterial chemoembolization (TACE) alone or combined with MR-guided laser-induced-thermotherapy (LITT) in liver metastases of non-colorectal and non-breast cancer origin.

Methods and Materials: Included were patients with unresectable non-colorectal non-breast cancer liver metastases with progression under systemic chemotherapy. Excluded were patients with Karnofsky score = 70, respiratory, renal and cardiovascular failure, and general TACE contraindications. TACE using Mitomycin alone, Mitomycin-Gemcitabine or Mitomycin-Gemcitabine-Cisplatin was performed to all patients. After TACE 146 metastases were ablated with MR-guided LITT. To be eligible for LITT metastases should be < 5 cm in size and = 5 in number. Tumor response was evaluated using MRI according to RECIST. Survival was evaluated using Kaplan-Meier analysis.

Results: A total of 110 patients (mean age 59.2 years) with 371 metastases received TACE (mean 5.4 sessions/patient, n=110) with 76 (69%) receiving LITT (mean 1.6 session/patient) afterwards. TACE resulted in a mean decrease of mean maximum diameter of $52\% \pm 26.6$ and volume change of $-68.5\% \pm 22.9$ in the 25 patients (23%) with partial response. Stable disease (n=59, 54%). Progressive disease (n=26, 23%). The RECIST outcome after LITT showed complete response (n=13, 17%), partial response (n=1, 1%), stable situation (n=41, 54%) and progressive disease (n=21, 28%). The mean time to progression (TTP) was 8.6 months. Median survival of all patients was 21.1 months.

Conclusion: TACE with different protocols alone and in combination with LITT is a feasible palliative treatment option

resulting in a median survival of 21.1 months for unresectable liver metastases of non-colorectal and non-breast cancer origin.

Keywords: Liver metastases; Neoadjuvant treatment; Transarterial chemoembolization.

129. Risk Factor Analysis of Pulmonary Hemorrhage Complicating CT-Guided Lung Biopsy in Coaxial and Non-Coaxial Core Biopsy Techniques In 650 Patients

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European Journal of Radiology, 83: 1945-1952 (2014) IF: 2.16

Purpose: To evaluate the risk factors involved in the development of pulmonary hemorrhage complicating CT-guided biopsy of pulmonary lesions in coaxial and non-coaxial techniques.

Materials and Methods: Retrospective study included CT-guided percutaneous lung biopsies in 650 consecutive patients (407 males, 243 females; mean age 54.6 years, SD: 5.2) from November 2008 to June 2013. Patients were classified according to lung biopsy technique in coaxial group (318 lesions) and non-coaxial group (332 lesions). Exclusion criteria for biopsy were: lesions <5mm in diameter, uncorrectable coagulopathy, positive-pressure ventilation, severe respiratory compromise, pulmonary arterial hypertension or refusal of the procedure. Risk factors for pulmonary hemorrhage complicating lung biopsy were classified into: (a) patient's related risk factors, (b) lesion's related risk factors and (d) technical risk factors. Radiological assessments were performed by two radiologists in consensus. Mann-Whitney U test and Fisher's exact tests for statistical analysis. p values <0.05 were considered statistically significant.

Results: Incidence of pulmonary hemorrhage was 19.6% (65/332) in non-coaxial group and 22.3% (71/318) in coaxial group.

The difference in incidence between both groups was statistically insignificant (p=0.27). Hemoptysis developed in 5.4% (18/332) and in 6.3% (20/318) in the non-coaxial and coaxial groups respectively.

Traversing pulmonary vessels in the needle biopsy track was a significant risk factor of the development pulmonary hemorrhage (incidence: 55.4% (36/65, p=0.0003) in the non-coaxial group and 57.7% (41/71, p=0.0013) in coaxial group). Other significant risk factors included: lesions of less than 2 cm (p value of 0.01 and 0.02 in non-coaxial and coaxial groups respectively), basal and middle zonal lesions in comparison to upper zonal lung lesions (p=0.002 and 0.03 in non-coaxial and coaxial groups respectively), increased lesion's depth from the pleural surface (p=0.021 and 0.018 in non-coaxial and coaxial groups respectively), increased distance of traversed lung in the needle track of more than 2.5 cm (p=0.001 in both groups). Insignificant risk factors were patient's age, gender or emphysema in both groups (p value >0.1 in both groups). Concomitant incidence of pneumothorax was 32.3% (21/65) in non-coaxial group and 36.6% (26/71) in coaxial group. Pulmonary hemorrhage in the majority of cases was treated conservatively.

Conclusion: Pulmonary hemorrhage complicating CT-guided core biopsy of pulmonary lesions, showed insignificant difference between coaxial and non-coaxial techniques. Significant risk factors of pulmonary hemorrhage included small and basal

lesions, increased lesion's depth from pleural surface, increased length of aerated lung parenchyma crossed by biopsy needle and passing through vessels within the lung during puncture.

Keywords: Pulmonary hemorrhage; CT-guide ; Lung biopsy; Coaxial ; Non-coaxial core biopsy.

130. CT Volumetric Assessment of Pulmonary Neoplasms after Radiofrequency Ablation: when to Consider a Second Intervention?

Nour-Eldin A. Nour-Eldin, Nagy N.N. Naguib, Ahmed M. Tawfik, Tatjana Gruber-Rouh, Stefan Zangos and Thomas J. Vogl.

Journal of Vascular Interventional Radiology, 25(3): 347-354 (2014) IF: 2.149

Purpose: To determine the minimal follow-up time point to predict therapeutic response to radiofrequency (RF) ablation of lung tumors.

Materials and Methods: A retrospective study design was approved by the institutional review board. From January 2008 to January 2010, 78 patients (46 men and 32 women; mean age, 58.9 y) underwent computed tomography (CT)-guided percutaneous RF ablation of pulmonary malignancies. A single RF multitined electrode was used to treat 100 index tumors, 6 primary lesions, and 94 metastatic lesions. CT volumetric measurements of ablated tumors were made before ablation and 24 hours, 3-6 weeks, 3 months, 6 months, 9 months, and 12 months after ablation. An unpaired t test and Spearman rank correlation coefficient were used to analyze the volumetric changes.

Results: Complete successful ablation was achieved in 80% of index tumors. The mean time to detection of tumor residue or recurrence tumor residue or recurrence was 6.7 months after ablation. In successfully ablated lesions, the mean volume before ablation was 1.81 cm(3) (standard deviation [SD], 1.71); in failed ablation lesions, the mean volume before ablation was 2.58 cm(3) (SD, 2.8) (P = .42).

The earliest statistically significant follow-up time point that showed a difference in the volumetric measurements of failed and successful ablations as well as the earliest significant correlation with the 12-month point was 3 months (P = .025, Spearman R = 0.72). Secondary tumor control after repeat ablation was statistically significant for lesions ablated at a 3-month interval (four out of five lesions) (P = .04).

Conclusions: CT volumetric assessment of ablated tumors revealed that 3 months was the earliest time point that may determine the response of a pulmonary ablation or repeat intervention.

Keywords: CT; Volumetric assessment; Pulmonary neoplasms; Radiofrequency ablation.

Dept. of Ear Nose & Throat

J Res_id: 2914

131. Transnasal Endoscopic Medial Maxillectomy In Recurrent Maxillary Sinus Inverted Papilloma

Reda H. Kamel, Ahmed F. Abdel Fattah and Ayman G. Awad

Rhinology, 52-4: 381-385 (2014) IF: 2.779

Background: Maxillary sinus inverted papilloma entails medial maxillectomy and is associated with high incidence of recurrence.

Objective: To study the impact of prior surgery on recurrence rate after transnasal endoscopic medial maxillectomy.

Methodology: Eighteen patients with primary and 33 with recurrent maxillary sinus inverted papilloma underwent transnasal endoscopic medial maxillectomy. Caldwell-Luc operation was the primary surgery in 12 patients, transnasal endoscopic resection in 20, and midfacial degloving technique in one. The follow-up period ranged between 2 to 19.5 years with an average of 8.8 years.

Results: Recurrence was detected in 8/51 maxillary sinus inverted papilloma patients (15.7 %), 1/18 of primary cases (5.5 %), 7/33 of recurrent cases (21.2 %); 3/20 of the transnasal endoscopic resection group (15%) and 4/12 of the Caldwell-Luc group (33.3%). Redo transnasal endoscopic medial maxillectomy was followed by a single recurrence in the Caldwell-Luc group (25%), and no recurrence in the other groups.

Conclusion: Recurrence is more common in recurrent maxillary sinus inverted papilloma than primary lesions. Recurrent maxillary sinus inverted papilloma after Caldwell-Luc operation has higher incidence of recurrence than after transnasal endoscopic resection.

Keywords: inverted papilloma; maxillary sinus; recurrence; endoscopic surgery; medial maxillectomy.

132. Use of the Nine-Step Inflation/Deflation TEST and Resting Middle-ear Pressure Range as Predictors of Middle-ear Barotrauma in Aircrew Members

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The Journal of Laryngology and Otolaryngology, 128: 612-617 (2014)
IF: 0.7

Objective: To explore the role of the nine-step inflation/deflation tympanometric test and resting middle-ear pressure range as predictors of barotrauma in aircrew members.

Methods: A prospective, non-randomised study was conducted on 100 aircrew members.

Resting middle-ear pressure was measured and the nine-step inflation/deflation test performed on all subjects before flights. Subjects were allocated to two groups according to resting middle-ear pressure range (group A, within the range of +26 to +100 and -26 to -100 mmH₂O; group B, -25 to +25 mmH₂O). All aircrew members were assessed after flights regarding the presence and the grade of barotrauma.

Results: In both groups, the sensitivity and specificity values of the entire post-inflation/deflation test were close to those of the post-deflation part of the test. The post-deflation test had a higher negative predictive value than the post-inflation test. Ears with resting middle-ear pressure lower than -55 mmH₂O experienced barotrauma, regardless of good or poor post-inflation or post-deflation test results.

Conclusion: In an aircrew member, a resting middle-ear pressure within the range of -55 and +50 mmH₂O, together with good post-deflation test results, are considered reliable predictors of fitness to fly.

Keywords: Barotrauma; Altitude; Middle ear; Tympanometry; Eustachian tube.

Dept. of Endemic

133. Historical Epidemiology of Hepatitis C Virus (HCV) in Selected Countries

Bruggmann P, Berg T, Øvrehus AL, Moreno C, Brandão Mello CE, Roudot-Thoraval F, Marinho RT, Sherman M, Ryder SD, Sperl J, Akarca U, Balık I, Bihl F, Bilodeau M, Blasco AJ, Buti M, Calinas F, Calleja JL, Cheinquer H, Christensen PB, Clausen M, Coelho HS, Cornberg M, Cramp ME, Dore GJ, Doss W, Duberg AS, El-Sayed MH, Ergör G, Esmat G, Estes C, Falconer K, Félix J, Ferraz ML, Ferreira PR, Frankova S, García-Samaniego J, Gerstoft J, Giria JA, Gonçalves FL Jr, Gower E, Gschwantler M, Guimarães Pessoa M, Hézode C, Hofer H, Husa P, Idilman R, Kåberg M, Kaita KD, Kautz A, Kaymakoglu S, Krajden M, Krarup H, Laleman W, Lavanchy D, Lázaro P, Marotta P, Mauss S, Mendes Correa MC, Müllhaupt B, Myers RP, Negro F, Nemecek V, Örmeci N, Parkes J, Peltekian KM, Ramji A, Razavi H, Reis N, Roberts SK, Rosenberg WM, Sarmento-Castro R, Sarrazin C, Semela D, Shiha GE, Sievert W, Stärkel P, Stauber RE, Thompson AJ, Urbanek P, van Thiel I, Van Vlierberghe H, Vandijck D, Vogel W, Waked I, Wedemeyer H, Weis N, Wiegand J, Yosry A, Zekry A, Van Damme P, Aleman S and Hindman SJ.

Journal of Viral Hepatitis, 21: 5-33 (2014) IF: 3.307

Chronic infection with hepatitis C virus (HCV) is a leading indicator for liver disease. New treatment options are becoming available, and there is a need to characterize the epidemiology and disease burden of HCV. Data for prevalence, viremia, genotype, diagnosis and treatment were obtained through literature searches and expert consensus for 16 countries. For some countries, data from centralized registries were used to estimate diagnosis and treatment rates. Data for the number of liver transplants and the proportion attributable to HCV were obtained from centralized databases. Viremic prevalence estimates varied widely between countries, ranging from 0.3% in Austria, England and Germany to 8.5% in Egypt. The largest viremic populations were in Egypt, with 6,358,000 cases in 2008 and Brazil with 2,106,000 cases in 2007. The age distribution of cases differed between countries. In most countries, prevalence rates were higher among males, reflecting higher rates of injection drug use. Diagnosis, treatment and transplant levels also differed considerably between countries. Reliable estimates characterizing HCV-infected populations are critical for addressing HCV-related morbidity and mortality. There is a need to quantify the burden of chronic HCV infection at the national level.

Keywords: HCV; Diagnosis; Disease burden; Epidemiology; Hepatitis C; Incidence; Mortality; Prevalence; Treatment

134. Strategies to Manage Hepatitis C Virus (HCV) Disease Burden

Wedemeyer H, Duberg AS, Buti M, Rosenberg WM, Frankova S, Esmat G, Örmeci N, Van Vlierberghe H, Gschwantler M, Akarca U, Aleman S, Balık I, Berg T, Bihl F, Bilodeau M, Blasco AJ, Brandão Mello CE, Bruggmann P, Calinas F, Calleja JL, Cheinquer H, Christensen PB, Clausen M, Coelho HS, Cornberg M, Cramp ME, Dore GJ, Doss W, El-Sayed MH, Ergör G, Estes C, Falconer K, Félix J, Ferraz ML, Ferreira PR, García-Samaniego J, Gerstoft J, Giria JA, Gonçalves FL Jr, Guimarães Pessoa M, Hézode C, Hindman SJ, Hofer H, Husa P, Idilman R, Kåberg M, Kaita KD, Kautz A, Kaymakoglu S, Krajden M,

Krarpup H, Laleman W, Lavanchy D, Lázaro P, Marinho RT, Marotta P, Mauss S, Mendes Correa MC, Moreno C, Müllhaupt B, Myers RP, Nemecek V, Øvrehus AL, Parkes J, Peltekian KM, Ramji A, Razavi H, Reis N, Roberts SK, Roudot-Thoraval F, Ryder SD, Sarmiento-Castro R, Sarrazin C, Semela D, Sherman M, Shiha GE, Sperl J, Stärkel P, Stauber RE, Thompson AJ, Urbanek P, Van Damme P, van Thiel I, Vandijck D, Vogel W, Waked I, Weis N, Wiegand J, Yosry A, Zekry A, Negro F, Sievert W, Gower E.

Journal of Viral Hepatitis, 21: 60-89 (2014) IF: 3.307

The number of hepatitis C virus (HCV) infections is projected to decline while those with advanced liver disease will increase. A modeling approach was used to forecast two treatment scenarios: (i) the impact of increased treatment efficacy while keeping the number of treated patients constant and (ii) increasing efficacy and treatment rate. This analysis suggests that successful diagnosis and treatment of a small proportion of patients can contribute significantly to the reduction of disease burden in the countries studied. The largest reduction in HCV-related morbidity and mortality occurs when increased treatment is combined with higher efficacy therapies, generally in combination with increased diagnosis. With a treatment rate of approximately 10%, this analysis suggests it is possible to achieve elimination of HCV (defined as a >90% decline in total infections by 2030). However, for most countries presented, this will require a 3-5 fold increase in diagnosis and/or treatment. Thus, building the public health and clinical provider capacity for improved diagnosis and treatment will be critical.

Keywords: HCV; Diagnosis; Disease burden; Epidemiology; Hepatitis C

135. The Present and Future Disease Burden of Hepatitis C Virus (HCV) Infection with Today's Treatment Paradigm

H. Razavi, I. Waked, C. Sarrazin, R. P. Myers, R. Idilman, F. Calinas, W. Vogel, M. C. Mendes Correa, C. H_ezode, P. L_ azaro, U. Akarca, S. Aleman, I. Baltk, T. Berg, F. Bihl, M. Bilodeau, A. J. Blasco, C. E. Brandão Mello, P. Bruggmann, M. Buti, J. L. Calleja, H. Cheinquer, P. B. Christensen, M. Clausen, H. S. M. Coelho, M. E. Cramp, G. J. Dore, W. Doss, A. S. Duberg, M. H. El-Sayed, G. Ergör, G. Esmat, K. Falconer, J. F_ elix, M. L. G. Ferraz, P. R. Ferreira, S. Frankova, J. García-Samaniego, J. Gerstoft, J. A. Giria, F. L. Gonc_ ales Jr, E. Gower, M. Gschwantler, M. Guimarães Pessôa, S. J. Hindman, H. Hofer, P. Husa, M. K_ aberg, K. D. E. Kaita, A. Kautz, S. Kaymakoglu, M. Krajden, H. Krarpup, W. Laleman, D. Lavanchy, R. T. Marinho, P. Marotta, S. Mauss, C. Moreno, K. Murphy, F. Negro, V. Nemecek, N. Örmeci, A. L. H. Øvrehus, J. Parkes, K. Pasini, K. M. Peltekian, A. Ramji, N. Reis, S. K. Roberts,

Journal of Viral Hepatitis, 21: 34-59 (2014) IF: 3.307

The disease burden of hepatitis C virus (HCV) is expected to increase as the infected population ages. A modelling approach was used to estimate the total number of viremic infections, diagnosed, treated and new infections in 2013. In addition, the model was used to estimate the change in the total number of HCV infections, the disease progression and mortality in 2013-2030. Finally, expert panel consensus was used to capture current treatment practices in each country. Using today's treatment paradigm, the total number of HCV infections is projected to

decline or remain flat in all countries studied. However, in the same time period, the number of individuals with late-stage liver disease is projected to increase. This study concluded that the current treatment rate and efficacy are not sufficient to manage the disease burden of HCV. Thus, alternative strategies are required to keep the number of HCV individuals with advanced liver disease and liver-related deaths from increasing.

Keywords: HCV; Diagnosis; Disease burden; Epidemiology; Hepatitis C; Incidence; Mortality; Prevalence; Treatment ; Incidence; Mortality; Prevalence; Scenarios; Treatment.

136. Tamoxifen Downregulates MxA Expression by Suppressing TLR7 Expression in PBMCs of Males Infected with HCV

Injie O. Fawzy, Mohamed Negm, Rasha Ahmed, Gamal Esmat, Nabila Hamdi and Ahmed I. Abdelaziz

Journal of Medical Virology, 86: 1113-1119 (2014) IF: 2.217

Gender discrepancies in immune response to HCV infections and during HCV therapy exist and previous findings including those from this research team indicate the female sex hormone, 17 β -estradiol (E2), to be one probable cause of such inconsistencies. Also, it was recently demonstrated that estrogen receptor modulator Tamoxifen (TAM) exerts an upmodulating/ enhancing effect on the TLR7 and JAK-STAT pathways in PBMCs of premenopausal females infected with HCV. Pursuing this work, a discrepancy was noticed in the results from male patients, therefore this study aimed to determine whether the effects of TAM previously observed in the PBMCs of women would hold true in PBMCs from males infected with HCV. Isolated PBMCs were pooled and relative expression of the TLR7 was quantified using RTqPCR. Sets of PBMCs were treated with exogenous interferon alpha (IFN α) or the TLR7 ligand, Imiquimod; these stimulations were performed with and without E2 and TAM pretreatment and the relative gene expressions of TLR7 and MxA were measured. Pretreatment with E2 and IFN α downregulated TLR7 (**P= 0.0080) and TAM further decreased this expression significantly (*P= 0.0284). TAM pretreatment also caused a significant downregulation in MxA expression in Imiquimod-stimulated PBMCs (*P= 0.0218). In conclusion, TAM displays several paradoxical effects in PBMCs of males infected with HCV compared to those of females. Contrary to the previous study involving premenopausal females, in PBMCs of infected males TAM may decrease IFN α release as indicated by reduced MxA expression possibly via the suppression of TLR7 expression.

Keywords: Interferon alpha; JAK-STAT pathway; Gender.

137. Can Transient Elastography, Fib-4, Forns Index, and Lok Score Predict Esophageal Varices In HCV-Related Cirrhotic Patients?

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Gastroenterología Y Hepatología., 37(2): 58-65 (2014) IF: 0.832

Background: Gastroesophageal varices are present in approximately 50% of patients with liver cirrhosis. The aim of this study was to evaluate liver stiffness measurement (LSM), Fib-4, Forns Index and Lok Score as noninvasive predictors of esophageal varices (EV) .

Methods: This prospective study included 65 patients with HCV-related liver cirrhosis. All patients underwent routine laboratory tests, transient elastography (TE) and esophagogastroduodenoscopy. FIB-4, Forns Index and Lok Score were calculated. The diagnostic performances of these methods were assessed using sensitivity, specificity, positive predictive value, negative predictive value, accuracy and receiver operating characteristic curves.

Results: All predictors (LSM, FIB-4, Forns Index and Lok Score) demonstrated statistically significant correlation with the presence and the grade of EV. TE could diagnose EV at a cutoff value of 18.2 kPa. FIB-4, Forns Index, and Lok Score could diagnose EV at cutoff values of 2.8, 6.61 and 0.63, respectively. For prediction of large varices (grade 2, 3), LSM showed the highest accuracy (80%) with a cutoff of 22.4 kPa and AUROC of 0.801. Its sensitivity was 84%, specificity 72%, PPV 84% and NPV 72%. The diagnostic accuracies of FIB-4, Forns Index and Lok Score were 70%, 70% and 76%, respectively, at cutoffs of 3.3, 6.9 and 0.7, respectively. For diagnosis of large esophageal varices, adding TE to each of the other diagnostic indices (serum fibrosis scores) increased their sensitivities with little decrease in their specificities. Moreover, this combination decreased the LR- in all tests.

Conclusion: Noninvasive predictors can restrict endoscopic screening. This is very important as non invasiveness is now a major goal in hepatology.

Keywords: Esophageal varices ; HCV ; Liver stiffness measurement ; Noninvasive predictors; Serum fibrosis scores.

138. Virologic Response And Breakthrough in Chronic Hepatitis B Egyptian Patients Receiving Lamivudine Therapy

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Annals of Gastroenterology, 27(4): 380-386 (2014)

Background: Lamivudine monotherapy is effective in suppressing hepatitis B virus (HBV) replication to undetectable levels by PCR, in ameliorating liver disease and to some extent in achieving HBsAg seroconversion. This study aimed at assessing the virological and biochemical responses as well as breakthrough in HBeAg-negative chronic HBV (CHB) Egyptian patients receiving lamivudine therapy.

Methods: This retrospective study included 140 CHB patients with positive serum HBV-DNA by quantitative PCR assays and negative HBeAg who had never received prior anti-viral therapy for HBV. According to duration of lamivudine therapy (100 mg/day) patients were grouped into: group I (n=59) who received lamivudine for 1 year, group II (n=50) who received lamivudine for 2 years, and group III (n=31) who received lamivudine for 3 years.

Results: In group I, 76.3% patients had virologic response but this was reduced in group II and group III to 72% and 67.7% respectively. None of the patients in group I developed virologic breakthrough, whereas 12% and 25.8% in groups II and III respectively developed breakthrough. In group I, 25% of patients having high pre-treatment viremia showed virologic response compared to 84.6% and 83.3% having mild and moderate viremia respectively (P<0.01). However, in groups II and III, there was no significant relationship between pre-treatment viremia and virologic response. No significant relationship was found

between pre-treatment viral load and incidence of breakthrough within each group.

Conclusion: Lamivudine remains one of the antiviral therapies for HBeAg negative CHB patients. The rates of maintained virologic and biochemical responses to lamivudine decrease in time due to selection of drug-resistant mutants and, hence, breakthrough.

Keywords: Chronic HBV; Lamivudine; HBeAg; Virologic response; Virologic breakthrough.

Dept. of Forensic & Toxicology

139. Retrospective Study of Positive Physical Torture Cases in Cairo (2009 & 2010)

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Journal of Forensic and Legal Medicine, 24: 37-45 (2014)
IF: 0.989

Torture is the most serious violation of a person's fundamental right to personal integrity and a pathological form of human interaction. In this study, the prevalence of torture in Cairo during the years 2009 & 2010 is 10.97% of the total number of cases examined at the medico legal authority of Egypt in Zenhom (11.29% in 2010 & 10.36% in 2009).

The number of cases under this study is 367 (175 cases in 2009, 192 cases in 2010). Torture is more prevalent in the year 2010 than in the year 2009. The largest prevalence of torture was found in the area of south Cairo (120 cases; 32.7%) while the least was found in the area of west Cairo (50 cases; 13.6%). The victims included 336 males (91.6%) and 31 females (8.4%) with male to female ratio 10.8: 1.

The most commonly affected age group in the studied victims was the age group of the third decade (171 cases; 46.6%) while the least was the age group above the sixth decade (6 cases; 1.6%).

The most commonly affected site of injury was head & neck (243 cases; 66.2%) while the least was abdomen (17 cases; 4.6%). The most common type of injury was bruises (258 cases; 70.3%) while the least was electrocution (5 cases; 1.4%). Regarding the causal instrument, the most commonly used instrument was blunt object (333 cases; 90.7%) while the least was electric current (5 cases; 10%). Hitting with a stick leaving the characteristic shape of elongated abrasion & bruises was found in 35 cases (9.5%) and characteristic lesion of handcuff, which is blunt trauma wounds around wrists or ankles, was found in 68 cases (18.5%). There was one case of hair torture (0.3%) & 5 cases of sexual torture (1.5%). Permanent infirmity left in victims was positive in 24 cases (6.5%) and negative in 343 cases (93.5%) while deformity left in victims was positive in 10 cases (3%) and negative in 357 cases (97%). All permanent infirmity cases were male. Of the 24 cases of permanent infirmity, 83.3% were subjected to blunt trauma and 79.2% were injured in the upper limbs & this is statistically significant.

Keywords: Torture; Ill-treatment; Prevalence; Prevention; Forensic; Medicine.

Dept. of Histology**140. Autologous Bone Marrow-Derived Cell Therapy Combined with Physical Therapy Induces Functional Improvement in Chronic Spinal Cord Injury Patients**

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Cell Transplantation, 23: 729-745 (2014) IF: 3.57

Spinal cord injuries (SCI) cause sensory loss and motor paralysis. They are normally treated with physical therapy, but most patients fail to recover due to limited neural regeneration. Here we describe a strategy in which treatment with autologous adherent bone marrow cells is combined with physical therapy to improve motor and sensory functions in early stage chronic SCI patients. In a phase I/II controlled single-blind clinical trial (clinicaltrials.gov identifier: NCT00816803), 70 chronic cervical and thoracic SCI patients with injury durations of at least 12 months were treated with either intrathecal injection(s) of autologous adherent bone marrow cells combined with physical therapy or with physical therapy alone. Patients were evaluated with clinical and neurological examinations using the American Spinal Injury Association (ASIA) Impairment Scale (AIS), electrophysiological somatosensory-evoked potential, magnetic resonance imaging (MRI), and functional independence measurements. Chronic cervical and thoracic SCI patients (15 AIS A and 35 AIS B) treated with autologous adherent bone marrow cells combined with physical therapy showed functional improvements over patients in the control group (10 AIS A and 10 AIS B) treated with physical therapy alone, and there were no long-term cell therapy-related side effects. At 18 months posttreatment, 23 of the 50 cell therapy-treated cases (46%) showed sustained functional improvement. Compared to those patients with cervical injuries, a higher rate of functional improvement was achieved in thoracic SCI patients with shorter durations of injury and smaller cord lesions. Therefore, when combined with physical therapy, autologous adherent bone marrow cell therapy appears to be a safe and promising therapy for patients with chronic SCI of traumatic origin. Randomized controlled multicenter trials are warranted.

Keywords: Spinal cord injury (SCI); Cell therapy; Physical therapy; Motor; Sensory function; Clinical trial.

Dept. of Internal Medicine**141. New-Onset Diabetes and Hypertension as Complications of Liver Transplantation**

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Transplantation Proceedings, 46: 870-872 (2014) IF: 0.984

Background: Among the many complications that can occur after liver transplantation are diabetes and hypertension. In this study, we evaluated the overall prevalence of and identified predictors for post-transplantation diabetes and hypertension.

Methods: This study was retrospective. We collected the data of the patients from the database in the liver transplant unit.

Results: Incidence of new-onset diabetes after transplantation (NODAT) was 25% and incidence of post-transplantation hypertension was 20%. No predictors were found for NODAT.

Predictors of post-transplantation hypertension were body mass index and use of cyclosporine.

Conclusions: Diabetes and hypertension are common after liver transplantation. Predictors of post-transplantation hypertension are high body mass index and use of cyclosporine.

Keywords: Complications of Liver Transplantation

142. Blood Pressure is a Risk Factor for Progression of Diabetic Retinopathy in Normotensive Patients with Type 2 Diabetes: Correlation with Carotid Intima-Media Thickness

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Endocrine Regulations, 48: 189-194 (2014)

Objective: Carotid atherosclerotic lesions have been described more frequently in patients with diabetes and microvascular disease than in those with uncomplicated diabetes. In this study, we investigated the role of blood pressure as a risk factor of diabetic retinopathy in normotensive patients with type 2 diabetes. We also assessed the correlation of carotid intima-media thickness with both blood pressure and diabetic retinopathy.

Methods: The study group consisted of 140 normotensive patients (68 males and 72 females) with type 2 diabetes and diabetic retinopathy. Carotid intima-media thickness was evaluated using high-resolution B-mode ultrasonography. Diabetic retinopathy was assessed and graded, using colored fundus photography and fundus fluorescein angiography, as either non-proliferative or proliferative.

Results: Patients with proliferative diabetic retinopathy showed a higher systolic and diastolic blood pressure ($p < 0.01$). Carotid intima-media thickness was higher in patients with proliferative than non-proliferative diabetic retinopathy ones (1.094 ± 0.142 vs. 0.842 ± 0.134 mm, respectively; $p < 0.001$). Carotid intima-media thickness showed positive correlation with both systolic ($p < 0.001$) and diastolic blood pressures ($p < 0.01$). No significant differences were found between males and females in any of the studied parameters.

Conclusion: Our study proves that both systolic and diastolic blood pressures are important risk factors for the progression of retinopathy in normotensive patients with type 2 diabetes. We also demonstrate that carotid intima-media thickness, as a marker of atherosclerosis, is strongly correlated with both blood pressure and diabetic retinopathy in those patients.

Keywords: Blood pressure; Type 2 diabetes; Non-proliferative diabetic retinopathy; Proliferative diabetic retinopathy; Carotid intima-media thickness.

143. Haptoglobin Phenotypes as a Risk factor for Coronary artery Disease in Type 2 diabetes mellitus: an Egyptian Study

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Egyptian Journal of Medical Human Genetics, 15 (3): 257-264 (2014)

Objective: Diabetes has long been known to be an independent risk factor for cardiovascular disease. Recognition of diabetic individuals at greatest risk of developing coronary artery disease (CAD) would have important public health importance by

allowing the distribution of limited resources to be directed on those who would most benefit from aggressive management. Several functional differences between haptoglobin (Hp) phenotypes have been demonstrated that appear to have important biological and clinical consequences in the development of CAD in patients with type 2 DM. The present study was conducted to demonstrate the relationship between the Hp phenotypes and the development of CAD among Egyptian patients with type 2 DM. To our knowledge this work had not been carried out in Egypt before.

Subjects and methods: The study included 160 subjects divided into three groups. Group I: 72 type 2 DM patients without CAD, Group II: 48 type 2DM patients with developed CAD, Group III: 40 age and gender matched apparently healthy subjects to serve as controls. All patients and controls were subjected to full history taking, complete clinical examination, and routine laboratory investigations. Serum C-reactive protein (CRP) levels and serum haptoglobin levels were measured. Polymerase chain reaction (PCR) was used for Hp phenotypes' determination.

Results: Analysis revealed association between Hp2-2 phenotype and the presence of CAD in type 2 DM. Hp and CRP serum levels were significantly higher in patients with CAD. Although the levels of Hp did not reach significance among patients with different Hp phenotypes yet the individual with Hp2-2 phenotype had trend toward higher level.

Conclusion: Hp2-2 phenotype is considered to be a major susceptibility gene for the development of CAD in type 2 DM. Awareness of this gene susceptibility should raise future research for proper treatment and prevention of CAD development in type 2 DM.

Abbreviations: Hp, haptoglobin; CAD, coronary artery disease; DM, diabetes mellitus; CRP, serum C-reactive protein; PCR, polymerase chain reaction; ECG, electro-cardiograph; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBS, fasting blood sugar; 2hsBS, 2 hours postprandial blood glucose; HbA1c, glycated hemoglobin; TC, total cholesterol; TG, triglycerides; LDL-c, low density Lipoprotein cholesterol; HDL-c, high density lipoprotein cholesterol.

Keywords: Type 2 DM; Haptoglobin polymorphism; CAD; Oxidative stress; Polymerase chain reaction (PCR).

144. The Diagnostic Value of Detection of CD20 Positive Infiltrates in Renal Biopsies with Acute Allograft Rejection: A Pilot Study

Ashraf Genina, Wesam Ismail and Amin Roshdy Soliman

Arab J Nephrology Transplantation, 7(2): 97-101 (2014)

Introduction: The recognition of antibody mediated rejection has led to re-appreciation of the role of B cells in acute and chronic allograft rejection. The presence of CD20 positive lymphocytic infiltrates in acute cellular rejection has been associated with poor clinical outcomes and reduced graft survival. Recently molecular gene analysis has shown that grafts with antibody-mediated rejection (ABMR) have lower expression of CD20.

Methods: We reviewed 28 renal allograft biopsies, including 13 biopsies from patients who experienced acute ABMR and a matched group of 15 patients with acute T cell mediated rejection (TCMR) to serve as controls. All biopsies were stained by anti-CD20 and anti-CD8 antibodies.

Results: All twenty-eight biopsies were found to have CD20 positive cells within their interstitial infiltrate. The distribution of

CD20 positive cells varied from sparse cells to small or dense clusters in the interstitium. We found no statistically significant differences in CD20 or CD8 cell counts between the ABMR and TCMR groups. We noticed a weak positive correlation between the numbers of CD20 positive cells and the grade/severity of rejection but it didn't reach statistical significance ($r=0.37$, $p=0.06$). However, we found a significant positive correlation between the number of CD20 positive cells and intimal arteritis score ($r=0.39$, $p < 0.05$).

Conclusion: Our findings suggest that there is a possible relation between the presence of CD20 positive lymphocytic infiltrates and a more severe histological form of rejection. However, we failed to establish a relationship between their actual presence in the interstitial infiltrate and distinct mechanisms of graft rejection.

Keywords: Acute allograft rejection; CD20; CD8; C4d.

Dept. of Neurology

145. Blink Reflex in Type 2 Diabetes Mellitus

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J Clin Neurophysiol, 31(6): 552-555 (2014) IF: 1.595

Purpose: An evaluation of the extent of damage of the central nervous system in diabetes mellitus is of high value in current research. Electrophysiological abnormalities are frequently present in asymptomatic patients with diabetes mellitus. Diabetic cranial neuropathy is one of the complications of the disease. Blink reflex is used to diagnose subclinical cranial neuropathy. The objective is to test the utility of blink reflex in detecting subclinical cranial nerve involvement in patients with type 2 diabetes mellitus.

Methods: Forty patients with type 2 diabetes mellitus, aged from 30 to 60 years examined clinically and neurologically. Blink reflex and nerve conduction studies for the upper and lower limbs were performed and compared with 20 matched normal controls.

Results: Diabetic patients with peripheral neuropathy showed significant prolonged distal latency and reduced amplitudes of the R2C response compared with the control, patients without peripheral neuropathy showed insignificant changes. Alteration of R2 correlated with the type of treatment and the duration of the disease. In patients without peripheral neuropathy, ulnar sensory distal latencies showed significant positive correlation with R2I latency, whereas its Conduction Velocity (CV) showed significant positive correlation with R2C amplitudes and negative correlation with R2C latency.

Conclusions: R2C is the most sensitive parameter in the blink reflex, which can help in the diagnosis of subclinical diabetic cranial neuropathy.

Keywords: Diabetic neuropathy; Cranial neuropathy; Blink reflex; Peripheral neuropathy.

Dept. of Ophthalmology

146. Non-Penetrating Filtration Surgery Versus Trabeculectomy for Open-Angle Glaucoma

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The Cochrane Database of Systematic Reviews, 2: (2014) IF: 5.939

Background: Glaucoma is the second commonest cause of blindness worldwide. Non-penetrating glaucoma surgeries have been developed as a safer and more acceptable surgical intervention to patients compared to conventional procedures.

Objectives: To compare the effectiveness of non-penetrating trabecular surgery compared with conventional trabeculectomy in people with glaucoma.

Search Methods: We searched CENTRAL (which contains the Cochrane Eyes and Vision Group Trials Register) (The Cochrane Library 2013, Issue 8), Ovid MEDLINE, Ovid MEDLINE In-Process and Other Non-Indexed Citations, Ovid MEDLINE Daily, Ovid OLDMEDLINE (January 1946 to September 2013), EMBASE (January 1980 to September 2013), Latin American and Caribbean Literature on Health Sciences (LILACS) (January 1982 to September 2013), the metaRegister of Controlled Trials (mRCT) (www.controlled-trials.com), ClinicalTrials.gov (www.clinicaltrials.gov) and the WHO International Clinical Trials Registry Platform (ICTRP) (www.who.int/ictcp/search/en). We did not use any date or language restrictions in the electronic searches for trials. We last searched the electronic databases on 27 September 2013.

Selection Criteria: This review included relevant randomised controlled trials (RCTs) and quasi-RCTs on participants undergoing standard trabeculectomy for open-angle glaucoma compared to non-penetrating surgery, specifically viscocanalostomy or deep sclerectomy, with or without adjunctive measures.

Data Collection and Analysis: Two review authors independently reviewed the titles and abstracts of the search results. We obtained full copies of all potentially eligible studies and assessed each one according to the definitions in the 'Criteria for considering studies' section of this review. We used standard methodological procedures expected by The Cochrane Collaboration.

Main Results: We included five studies with a total of 311 eyes (247 participants) of which 133 eyes (participants) were quasi-randomised. One hundred and sixty eyes which had trabeculectomy were compared to 151 eyes that had non-penetrating glaucoma surgery (of which 101 eyes had deep sclerectomy and 50 eyes had viscocanalostomy). The confidence interval (CI) for the odds ratio (OR) of success (defined as achieving target eye pressure without eye drops) does not exclude a beneficial effect of either deep sclerectomy or trabeculectomy (OR 0.98, 95% CI 0.51 to 1.88). The odds of success in viscocanalostomy participants was lower than in trabeculectomy participants (OR 0.33, 95% CI 0.13 to 0.81). We did not combine the different types of non-penetrating surgery because there was evidence of a subgroup difference when examining total success. The odds ratio for achieving target eye pressure with or without eye drops was imprecise and was compatible with a beneficial effect of either trabeculectomy or non-penetrating filtration surgery (NPFS) (OR 0.79, 95% CI 0.35 to 1.79). Operative adjuvants were used in both treatment groups; more commonly in the NPFS group compared to the trabeculectomy group but no clear effect of their use could be determined. Although the studies were too small to provide definitive evidence regarding the relative safety of the surgical procedures we noted that there were relatively fewer complications with non-filtering surgery compared to trabeculectomy (17% and 65% respectively). Cataract was more commonly reported in the trabeculectomy studies. None of the five trials used quality of life measure questionnaires. The methodological quality of the studies was not good. Most studies were at high risk of bias in at least one domain and for many, there was lack of certainty due to incomplete

reporting. Adequate sequence generation was noted only in one study. Similarly, only two studies avoided detection bias. We detected incomplete outcome data in three of the included studies.

Authors' Conclusions: This review provides some limited evidence that control of IOP is better with trabeculectomy than viscocanalostomy. For deep sclerectomy, we cannot draw any useful conclusions. This may reflect surgical difficulties in performing non-penetrating procedures and the need for surgical experience. This review has highlighted the lack of use of quality of life outcomes and the need for higher methodological quality RCTs to address these issues. Since it is unlikely that better IOP control will be offered by NPFS, but that these techniques offer potential gains for patients in terms of quality of life, we feel that such a trial is likely to be of a non-inferiority design with quality of life measures.

Keywords: Non-penetrating; glaucoma; trabeculectomy; eyes

147. Predicting Transepithelial Phototherapeutic Keratectomy Outcomes Using Fourier Domain Optical Coherence Tomography

Catherine Cleary, Yan Li, Maolong Tang, Nehal Samy El Gendy, and David Huang

Cornea, 33(3): 280-287 (2014) IF: 2.36

Purpose: The aim of this study was to use Fourier domain optical coherence tomography to predict transepithelial phototherapeutic keratectomy outcomes.

Methods: This is a prospective case series. Subjects with anterior stromal corneal opacities underwent an excimer laser phototherapeutic keratectomy (PTK) combined with a photorefractive keratectomy using the VISX S4 excimer laser (AMO, Inc, Santa Ana, CA). Preoperative and postoperative Fourier domain optical coherence tomography images were used to develop a simulation algorithm to predict treatment outcomes. Main outcome measures included preoperative and postoperative uncorrected distance visual acuities and corrected distance visual acuity.

Results: Nine eyes of 8 patients were treated. The nominal ablation depth was 75 to 177 μ m centrally and 62 to 185 μ m peripherally. Measured PTK ablation depths were 20% higher centrally and 26% higher peripherally, compared with those for laser settings. Postoperatively, the mean uncorrected distance visual acuity was 20/41 (range, 20/25–20/80) compared with 20/103 (range, 20/60–20/400) preoperatively. The mean corrected distance visual acuity was 20/29 (range, 20/15–20/60) compared with 20/45 (range, 20/30–20/80) preoperatively. The MRSE was +1.38 \pm 2.37 diopters (D) compared with 22.59 \pm 2.83 D (mean \pm SD). The mean astigmatism magnitude was 1.14 \pm 0.83 D compared with 1.40 \pm 1.18 D preoperatively. Postoperative MRSE correlated strongly with ablation settings, central and peripheral epithelial thickness ($r = 0.99$, $P < 0.00001$). Central islands remained difficult to predict and limited visual outcomes in some cases.

Conclusions: Optical coherence tomography measurements of opacity depth and 3-dimensional ablation simulation provide valuable guidance in PTK planning. Post-PTK refraction may be predicted with a regression formula that uses epithelial thickness measurements obtained by optical coherence tomography. The laser ablation rates described in this study apply only to the VISX laser.

Keywords: Optical coherence tomography; Fourier domain optical coherence tomography; PTK; Image-guided surgery; Corneal opacity; Corneal dystrophy; Corneal scar.

148. Pneumatic trabecular Bypass Versus Trabeculotomy in the Management of Primary Congenital Glaucoma

Mohamed Ahmed Lotfy Eldaly

Graefe's Archive for Clinical and Experimental Ophthalmology, 252: 989-994 (2014) IF: 2.333

Background: The optimal surgical management in primary congenital glaucoma (PCG) remains a subject of debate. The aim of this study was to assess efficacy of pneumatic trabecular bypass (PTB) in comparison to conventional trabeculotomy (T) in the treatment of PCG.

Methods: In a prospective comparative experimental study, one eye per child suffering from PCG underwent either PTB or T. Complete examinations were performed before surgery, postoperatively at one and seven days, then monthly for a minimum of six months. The main outcome measures were the IOP, number of IOP-lowering medications, change in cup/disc ratio, and corneal clarity.

Results: Seventeen eyes (patients) were operated on for PTB compared to 25 eyes (patients) in the T group. The mean (\pm SD, range) preoperative IOP in the PTB and T groups was 34.7 (6.4, 26-48) mmHg and 26.4 (6.6, 18-44) mmHg, respectively, and these dropped at six months of follow-up to 14.9 (3.6, 11-24) mmHg and 18.8 (8.0, 6-34) mmHg, respectively. The mean reductions of IOP were 55.87 (\pm 11) and 28.4 (\pm 28.8), ($p=0.001$), where those for cup/disc ratio were 39.0 (\pm 29) and 17.5 (\pm 39.7) ($p=0.088$) in the PTB and T groups, respectively. The number of IOP-lowering medications had dropped from 1.77 ± 0.5 to 0.77 ± 1.0 in PTB patients, compared to an insignificant change in the T group (0.64 ± 0.9 & 0.62 ± 0.9 pre- and post-operatively respectively). Corneal clarity improved in 13 eyes (76.5 %) in the PTB group, while three eyes (12 %) had worsened in the T group. Total cumulative chances for success were 88.2 % (15 out of 17 eyes), compared to 56 % (14 out of 25 eyes), in the PTB and T groups, respectively ($p=0.027$).

Conclusions: PTB is a promising surgical technique for the control of primary congenital glaucoma. A randomized controlled trial with a longer follow-up is recommended.

Keywords: Congenital glaucoma; Trabeculotomy; Pneumatic; Trabecular bypass

149. A New Combination Formula for Treatment of Fungal Keratitis: an Experimental Study

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Journal of Ophthalmology, 2014: 1-7 (2014) IF: 1.935

To formulate and evaluate slow release ketoconazole and ketorolac to treat fungal keratitis and associated inflammation. Methods. Experimental study with the following outcome measures. Pharmaceutical Evaluation. Mucoadhesive gels containing ketoconazole and ketorolac were used. Microbiological in vitro evaluation was performed using cup method. In vivo evaluation was performed on 24 rabbits divided

into 2 groups, 12 rabbits each, group A (fast release formula; 6 times daily) and group B (slow release formula; 3 times daily). Each group was divided into two subgroups (6 rabbits each). Both eyes of rabbits were inoculated with *Candida albicans*. The left eye of all rabbits received the combination formulae. The right eye for one subgroup received ketoconazole as control 1 while the other subgroup received placebo as control 2. Clinical follow-up was done and, finally, the corneas were used for microbiological and pathological evaluation. Results. Gels containing high polymer concentration showed both high viscosity and mucoadhesion properties with slower drug release. The infected eyes treated with slow release formula containing both drugs showed better curing of the cornea and pathologically less inflammation than eyes treated with fast release formula. Conclusion. Slow release formula containing ketoconazole and ketorolac showed higher activity than fast release formula against fungal keratitis and associated inflammation.

Keywords: Fungal keratitis; Ketoconazole; Ketorolac.

150. Scleral Shield: Primary Results of a new Surgical Technique in Augmenting Porous Orbital Implant Protection

Tamer I. Gawdat and Rania A. Ahmed

Eur J Ophthalmol, 24 (6): 948-952 (2014) IF: 1.058

Purpose: To evaluate the value of using an additional scleral shield in providing further protection of inserted Medpor® implants in eviscerated globes.

Methods: This was a prospective interventional case series that included 30 patients with blind and/ or disfiguring globe that warranted evisceration. Cases with intraocular masses, retained intraocular foreign bodies, as well as secondary ball implantation were excluded. All patients underwent regular evisceration with porous polyethylene ball (Medpor®) implantation. The sutured wound was further covered by scleral patch graft followed by closure of Tenon capsule and conjunctiva in separate layers. Patients were evaluated for implant exposure and all of them completed at least 4 years of follow-up.

Results: The study involved 26 male and 4 female participants with age ranging from 16 to 65 years (mean 40.74 ± 15.86 years). The Medpor sizes varied from 16 to 22 mm in diameter. It is a simple extra step with no reported exposure, infection, or granulomas during the 4 years of follow-up.

Conclusions: Scleral shield is a simple surgical technique that provides an extra layer of autogenous tissue to cover inserted orbital implant following evisceration with promising results in preventing their exposure.

Keywords: Evisceration; Exposure; Medpor; Sclera.

151. Personal A-Constant in Relation to Axial Length with Various Intraocular Lenses

Mohamed A. Eldaly and Khaled A. Mansour

Indian Journal of Ophthalmology, 62 (7): 788-791 (2014) IF: 0.927

Purpose: To study the relationship between the axial length and personal A-constant for the 1-piece Tecnis (Abbott ZCB00), AcrySof MA60AC (Alcon) and the Quatrix aspheric preloaded (CROMA) intraocular lenses (IOL).

Materials And Methods: Patients matching the inclusion criteria were further subdivided according to the implanted IOL in this prospective comparative study. The obtained refractive outcomes were introduced into the formula installed in the biometry machine (Humphrey model 820 ultrasonic biometer) to obtain the personal A-constant for each eye. Polynomial regression analysis was done to study the individualized A-constant for each type of IOL in relation to preoperative axial length measurement.

Results: Two hundred and forty five eyes of 186 patients were enrolled into this study, of whom 73 eyes with Tecnis 1-piece, 116 eyes with MA60AC, and 56 eyes with Quatrix. The median of personalized A-constant for Tecnis 1-piece, MA60AC, and Quatrix were 119.21 (SD 1.3, Std. Mean error 0.15), 119 (SD 1.2, Std. Mean error 0.11) and 120.4 (SD 1.2, Std. Mean error 0.16) respectively. Regression plots for the same range of axial length among all the groups showed that the Tecnis1 group followed the same pattern of the Quatrix group in which there was a linear relationship of a trend towards myopia when the axial length had increased and a hyperopic shift when decreased. This relationship changed into a plateau when the axial length became in the range of 23.5 mm to 27 mm in the MA60AC group.

Conclusions: Personal A-constant follows different trends with different IOLs even for the same range of axial length

Keywords: A-constant; Biometry; Individualized; Intraocular lenses; Personal; Tecnis.

Dept. of Orthopaedic

152. Management of Displaced Intra-Articular Calcaneal Fractures Using the Limited open Sinus Tarsi Approach and Fixation by Screws only Technique.

Ahmed Abdelazeem, Ahmed Khedr, Mostafa Abousayed, Ahmed Seifeldin and Sherif Khaled

International Orthopaedics, 38(3): 601-606 (2014) IF: 2.019

Purpose: Evaluation of management of the displaced intraarticular calcaneal fractures (DIACF) Sanders types II and III by using minimally invasive sinus tarsi approach and fixation by screws only technique.

Methods: Open reduction using the limited lateral approach and internal fixation using screws only was studied in 33 patients with unilateral isolated simple DIACF with a mean age of 35 years (15 type II patients and 18 type III patients). All patients were evaluated both clinically and radiologically.

Results: With a mean follow-up period of 28.8 months (range 12–53 months), no cases of failure of reduction or displacement of hardware were detected. The mean AOFAS was 91.73 points while the mean MFS was 95.09 points. Twenty-eight patients were able to resume their pre-injury level of work while the remaining five refrained to sedentary jobs. The mean pre-operative Bohlert's angle was 2.8° (range from -38° to 24°) while postoperatively it was 19.4° (range 5° to 49°). There was no statistically significant difference when comparing the results (AOFAS p-value 1.00, MFS p-value 0.81) between Sanders' type II and III fractures. One patient had postoperative superficial wound infection. Seven patients complained of prominent screw heads. Complex regional pain syndrome occurred in seven patients and was treated successfully at six months duration.

Conclusion: The limited open sinus tarsi approach can be used successfully to treat displaced Sanders type II and III fractures. It

allows for adequate visualization and reduction. Fixation by screws only is also sufficient.

Keywords: Fracture calcaneus; Footinjuries; Sanders; Sinus tarsi; Limited open; Screws only; Intra-articular fractures; Less invasive.

153. Multiple Arthroscopic Debridement and Graft Retention in Septic Knee Arthritis After ACL Reconstruction: A Prospective Case–Control Study

Ahmed Abdel-Aziz, Yasser A. Radwan and Ahmed Rizk

International Orthopaedics, 38: 73-82 (2014) IF: 2.019

Purpose: This study was undertaken to prospectively analyse, at a mean five-year follow-up, the clinical, functional, and radiographic outcomes in patients who developed postoperative acute septic knee arthritis following anterior cruciate ligament (ACL) reconstruction using hamstring autograft. We also assessed the effect of multiple arthroscopic debridement and graft retention on the functional outcomes in comparison with the matched control group.

Methods: From a consecutive case series of 2,560 ACL-injured patients who were treated with arthroscopic ACL reconstruction, we report on 24 cases with postoperative septic knee arthritis. These patients were individually matched for age, sex, comorbidity, body mass index (BMI) and preinjury Tegner activity scale in a ratio of 1/1. Clinical, laboratory, synovial fluid analysis and culture were performed. Arthroscopic debridement and graft retention was done for all cases, in addition to antibiotic therapy IV. A detailed physical examination, KT1000 laxity testing, Lysholm knee score, Tegner activity level scale, International Knee Documentation Committee (IKDC), and Knee Injury and Osteoarthritis Outcome Score (KOOS) were completed.

Results: In all cases, treatment of infection was successful after a median of three (range one to six) repeated arthroscopic graft debridement and retention, in addition to antibiotic therapy IV. At an average of five years follow-up, two patients had over five millimetres manual maximum side-to-side difference in laxity. There were no significant differences between groups regarding Lysholm score, IKDC and KOOS. Median final Tegner activity score was 5.5 versus 7 in the control group (p=0.004). Complications included graft rupture in three patients, loss of range of motion in five, Sudeck's atrophy in one and moderate joint narrowing in two. There were no recurrences of septic arthritis or bone infection.

Conclusion: Graft retention seems not only possible but appropriate in view of the experience presented in this article for postoperative septic knee arthritis using hamstring autograft. A potential residual complication is arthrofibrosis, which deserves maximum attention.

Keywords: Septic knee; Hamstring; ACL; Graft retention; Arthroscopic; Debridement.

154. Short-Segment Fixation Through a Limited Ilioinguinal Approach for treating anterior Acetabular fractures: A Historical-Control Study

Mohamed Abo-Elsoud, Yasser A. Radwan, Mohamed Gobba and Fouad Sadek

International Orthopaedics, 38: 1469-1475 (2014) IF: 2.019

Purpose : We evaluated the potential advantages of short-segment fixation of certain anterior acetabular fracture patterns through a limited ilioinguinal approach.

Methods: Two patient groups were studied. The first group comprised 22 patients (20 men, two women; average age 36 years) treated using the short-segment fixation protocol through a limited ilioinguinal approach. We modified the use of short pelvic brim plates, spring plates and posterior-column screws as reduction and fixation tools (leaving the distal end of the fracture unfixed) to keep the dissection entirely lateral to the iliac vessels. The second (control) group comprised 31 patients with matched fracture patterns fixed through the standard ilioinguinal approach. All patients were followed up for a minimum of two years. The estimated amount of blood loss (primary outcome measure), operative time, postoperative radiographic assessment of reduction quality and functional score assessment (secondary outcome measures) were compared between groups.

Results: The short-segment-fixation group had significantly less blood loss ($p < 0.0001$) and shorter operative time ($p = 0.002$) compared with the control group. However, there were no significant differences in the quality of fracture reduction and functional scores between groups at the final follow-up. No major complications were encountered in either group.

Conclusion: Short-segment fixation through a limited ilioinguinal approach is a safe and effective alternative for treating certain patterns of anterior acetabular fractures. Decreased blood loss and shorter operative time with less soft tissue dissection are the main advantages of this approach.

Keywords: Ilioinguinal; Acetabulum; Fractures; Short segment.

155. Anterior Cruciate Ligament Reconstruction Using Hamstring Autograft in Over-40 Patients. Does Preoperative Arthritic Changes Matter?

Yasser A. Radwan, Ali M. Reda Mansour, Ahmed Rizk and George Malak

European Orthopaedics and Traumatology, 5: 253-260 (2014)

Introduction: The purpose of this study was to assess the effect of osteoarthritis on the outcome of arthroscopic anterior cruciate ligament (ACL) reconstruction, and to assess the effect of the procedure on the progression of osteoarthritis.

Material and methods: Forty-two patients, age above 40, presenting by symptomatic instability secondary to rupture of the ACL were enrolled in a prospective cohort study. Cases were divided into two groups according to the absence of osteoarthritic changes (group I, 19 patients) or presence of osteoarthritic changes (group II, 23 patients) in preoperative radiographs. ACL anatomic single bundle reconstruction by the anteromedial portal technique using hamstring autograft fixed by biodegradable interference fit screws was done for all patients, and a fixed postoperative rehabilitation protocol was applied. Data were recorded and statistical analysis of the preoperative, 1 year follow up, and final follow up (average 41 months in group I and 42 months in group II) results of both groups was conducted.

Results: The average patient age at the time of operation was 44.5 years in group I versus 46.4 years in group II. The follow-up median pain scores, ROM, modified Lysholm scores were significantly better in group I compared to group II. On the contrary, the difference between preoperative and 1 year postoperative scores and the percentage of improvement of the modified Lysholm score were significantly higher in group II.

Deterioration of the radiographic grade of osteoarthritis in the final follow-up was declared in 15.8 % of patients of group I and in 21.7 % of patients of group II ($P = 0.71$). Age, concomitant meniscus injury, and presence of preoperative arthritic changes, and cartilage defect had no statistically significantly effect on the success rate. Patients who had ACL reconstruction more than 2 years after injury and those with higher body mass index (BMI) had worse outcome than those who had earlier reconstruction and lower BMI.

Conclusion: Patients having preoperative mild to moderate arthritic changes will indeed benefit from ACL reconstruction at short term, although their overall functional outcome seemed to be inferior to the outcome of non-arthritic patients. However, osteoarthritic changes deteriorate over time in both groups especially when there is preoperative mild to moderate arthritic changes.

Keywords: ACL; Over 40; Hamstring; Osteoarthritis.

156. Salmonella osteomyelitis: A Rare Differential Diagnosis in osteolytic Lesions Around the knee

Khaled Hamed Salem

Journal of Infection and Public Health, 7(1): 66-69 (2014)

Salmonella osteomyelitis in immunocompetent adults is uncommon. It usually has a diaphyseal location or present as spondylitis. Metaphyseal affection is extremely rare. A 51-year-old male presented with refractory knee pain. Plain X-rays showed a rounded osteolytic lesion in the proximal tibia without marginal sclerosis. A minimal C-reactive protein elevation and a normal leucocytic count were present. Further imaging raised suspicion of malignancy so that a biopsy was done. After fenestering the lesion, 15-ml turbid fluid was evacuated. Microbiological examination showed Salmonella enteritidis. Repeated debridements were done and antibiotic therapy with ciprofloxacin was initiated. The cavity was then filled with synthetic bone graft leading to progressive healing. Although rare, Salmonella bone infection usually lacks the typical periosteal reaction and the laboratory evidence of infection of pyogenic osteomyelitis. It should therefore be considered in the differential diagnosis of osteolytic neoplastic lesions.

Keywords: Metaphyseal osteolytic lesions; Salmonella; Osteomyelitis.

Dept. of Parasitology

157. Disseminated Coccidioidomycosis in A 5-Year-Old Sudanese Boy

Nadia A. El Dib, Nabil M. Eldessouky, Saham A. El Sherbini, Hala M. Seleem and HebatAllah F. Algebaly

Journal of Tropical Pediatrics, 60(3): 260-263 (2014) IF: 0.857

A 5-year-old Sudanese boy not known to be immunodeficient and with no history of travelling developed septic shock from a disseminating coccidial infection. The diagnosis was delayed, as the eosinophilic hepatic abscess was initially thought to be secondary to schistosomiasis, which is endemic in Egypt and Sudan. A further survey about the existence of coccidial infection around the climatic area of the river Nile is warranted.

Keywords: Coccidioidomycosis; Non endemic area; Septic shock.

Dept. of Pediatrics**158. Serum Bilirubin and Bilirubin/Albumin Ratio as Predictors of Bilirubin Encephalopathy**

Iman Iskander, Rasha Gamaleldin, Salma El Houchi, Amira El Shenawy, Iman Seoud, Nesrin El Gharbawi, Hazem Abou-Youssef, Aleksandr Aravkin and Richard P. Wennberg

Pediatrics, 134: E1333-1339 (2014) IF: 5.297

Background and Objective: Bilirubin/albumin ratio (B/A) may provide a better estimate of free bilirubin than total serum bilirubin (TSB), thus improving identification of newborns at risk for bilirubin encephalopathy. The objective of the study was to identify thresholds and compare specificities of TSB and B/A in detecting patients with acute and posttreatment auditory and neurologic impairment.

Methods: A total of 193 term/near-term infants, admitted for severe jaundice to Cairo University Children's Hospital, were evaluated for neurologic status and auditory impairment (automated auditory brainstem response), both at admission and posttreatment by investigators blinded to laboratory results. The relationships of TSB and B/A to advancing stages of neurotoxicity were compared by using receiver operating characteristic curves.

Results: TSB and B/A ranged from 17 to 61 mg/dL and 5.4 to 21.0 mg/g, respectively; 58 (30%) of 193 subjects developed acute bilirubin encephalopathy, leading to kernicterus in 35 infants (13 lethal). Auditory impairment was identified in 86 (49%) of 173 infants at admission and in 22 of 128 at follow-up. In the absence of clinical risk factors, no residual neurologic or hearing impairment occurred unless TSB exceeded 31 mg/dl. However, transient auditory impairment occurred at lower TSB and B/A (22.9 mg/dL and 5.7 mg/g, respectively). Intervention values of TSB and B/A set at high sensitivity to detect different stages of neurotoxicity had nearly the same specificity. **CONCLUSIONS:** Both TSB and B/A are strong predictors of neurotoxicity, but B/A does not improve prediction over TSB alone. Threshold values detecting all affected patients (100% sensitivity) increase with advancing severity of neurotoxicity

Keywords: hyperbilirubinemia ; bilirubin/albumin ratio ; kernicterus; auditory impairment ; bilirubin-induced neurologic dysfunction ; bind score ; automated auditory brainstem response

159. Diagnosis and Treatment of the Hemolytic Uremic Disease Spectrum in Developing Regions

Johannes Hofer, Thomas Giner and Hesham Safouh

Seminars In Thrombosis and Hemostasis, 40: 478-486 (2014) IF: 3.693

There has been rapid progress in the understanding of the pathophysiology of the hemolytic uremic syndrome (HUS) disease spectrum; thus, complex diagnostic and therapeutic requirements have emerged in parallel. Current recommendations for diagnosis and therapy were rapidly adapted from the prior skilled scientific groundwork. However, such recommendations can be realized only when highly specialized laboratories and sufficient financial resources are available. Thus, many recommendations are not feasible for patients living and working in developing countries. More than one-third of the world's population has no access to essential drugs and more than half of this group lives in the poorest regions of Africa and Asia. From

this perspective, distinct initial diagnostic and therapeutic recommendations, as well as international cooperations are needed to complete proper diagnostic work-ups in a stringent and cost-efficient manner and to enable patients to be adequately treated with available resources. However, while costs for complement-targeted drugs remain tremendously high, state-of-the-art treatment options remain unavailable for the vast majority of patients in developing areas.

Keywords: Developing countries; Complement screening; Hemolytic uremic syndrome; Rare disease.

160. Mutations in FA2H in three Arab Families with a Clinical Spectrum of Neurodegenerative Spastic Paraparesis and Hereditary Spastic Paraparesis

Maha Zaki, Laila Selim, Ali G. Fenstermaker and Joseph Gleeson

Clin Genet, 88(3): 1-3 (2014) IF: 3.652

FA2H encodes fatty acid 2-hydroxylase, involved in the alpha-hydroxylation of the N-acyl ceramide moiety of sphingolipid fatty acids, essential components of myelin (1). Mutations in FA2H were identified in patients with recessive childhood onset spasticity, dystonia, cognitive dysfunction and periventricular white matter disease (2) and later extended to include neurodegeneration with brain iron accumulation (NBIA) (3), as well as in a recessive complicated form of hereditary spastic paraplegia (SPG35, MIM#612319) (4, 5). We report seven patients from three unrelated consanguineous Arab families each with a novel homozygous FA2H gene mutation presenting with progressive spastic paraparesis and features of NBIA, highlighting the age-dependent neuropathy. The disease began with cerebellar manifestations including ataxia, nystagmus, intention tremors and dysarthria while infrequent limb dystonic movements were obvious with disease progression. Spastic paraparesis and bulbar manifestations were evident with age. Magnetic resonance imaging revealed cerebellar atrophy, high white matter signal especially around occipital horns and low signal in basal ganglia consistent with NBIA. Interestingly, nerve conduction velocity revealed motor and sensory axonal neuropathy in all affecteds tested; a finding recently correlated with Fatty Acid Hydroxylase-associated Neurodegeneration (FAHN) (Table 1). Whole exome sequencing from DNA from two affected members from each family were generated as part of a larger study of Hereditary Spastic Paraplegia (HSP) (6), approved by the institutional review board, and consented by the family.

Keywords: Spastic paraplegia; Whole exome sequencing.

161. A Novel Heterozygous Mutation in the Glucokinase Gene Conferring exercise-Induced Symptomatic Hyperglycaemia Responsive to Sulfonylurea

Ebrahim MS, Lawson ML and Geraghty MT

Diabetes and Metabolism, 40: 310-313 (2014) IF: 2.845

Aim: To describe the atypical phenotype and genotype of an adolescent girl with symptomatic exercise-induced hyperglycaemia, responsive to sulfonylurea treatment.

Methods: Chart review, gene sequencing, and blinded continuous glucose monitoring (Medtronic iPro2) were used to characterise the case.

Results: A novel heterozygous mutation p.Q219x (c.655C>T) in exon 6 of the glucokinase gene (NM 000162.3) was confirmed in the patient and father. Initiation of gliclazide 20 mg twice daily was associated with resolution of symptoms and normalization of haemoglobin A1C (5.6%). Blinded continuous glucose monitoring demonstrated significantly less time spent in the hyperglycaemic range (sensor glucose > 8.0 mmol/L) when on twice daily gliclazide versus intermittent or no gliclazide (mean minutes/day with sensor glucose > 8 mmol/L: 53.6 ± 90.0 vs. 307.9 ± 246.6; P = 0.04).

Conclusions: This novel mutation in the glucokinase gene led to atypical symptomatic exercise-induced hyperglycaemia that was responsive to low dose sulfonylurea with self-reported additional benefit after reduction of carbohydrate intake. We postulate that her atypical clinical presentation was related to the intense elite-level physical activity combined with carbohydrate loading before exercise.

Keywords: Glucokinase; Heterozygote; MODY2; Sulfonylurea compounds; Exercise

162. Short-Term Effects of corticosteroid therapy on Cardiac and Skeletal Muscles in Muscular Dystrophies

Gehan Hussein, Lobna Mansour, Hadeer Abdel Ghafar, Fatma Alzahraa Mostafa and Lubna Fawaz

Journal of Investigative Medicine, 62(6): 875-879 (2014) IF: 1.503

Background: Duchenne muscular dystrophy (DMD) is the most common muscular dystrophy of childhood. It leads to progressive deterioration in cardiac and skeletal muscles. Corticosteroids are considered an effective therapy.

Objective: This study aimed to evaluate the role of short-term prednisone therapy in improving left ventricular (LV) systolic function, LV mass (LVM), and motor power in cases of muscular dystrophies.

Patients and Methods: Twenty-five cases of muscular dystrophy including 17 cases of DMD, 3 cases of Becker muscular dystrophies, and 5 cases of female patients with DMD-like phenotype were included in the study. The diagnosis of 12 patients was confirmed by muscle biopsy with immunohistochemistry; the patients were subjected to motor assessment, measurement of creatine kinase level, and echocardiographic examination before and after prednisone therapy. Transthoracic echocardiographic assessment of the LV systolic function (fractional shortening) was done. Myocardial performance index and LVM were calculated. Intermittent dosage of prednisone was administered 5 mg/kg per day on 2 consecutive days weekly for 3 months.

Results: Fractional shortening improved on prednisone therapy (P=0.009) and LVM increased (P = 0.012); improvement in walking was detected in 77% of the patients, climbing stairs improved in 88.9%, Gower sign improved in 70%, and rising from chair improved in 60%. Prednisone had no effect on the patients with marked motor impairment (on wheelchair). The creatine kinase level was significantly lower after steroid therapy (P = 0.04).

Conclusions: Three months of intermittent prednisone therapy could improve cardiac and skeletal muscle function in congenital muscular dystrophy.

Keywords: Muscular dystrophy; Prednisone; Left ventricular systolic function; Myocardial performance index; Left ventricular mass; Creatine kinase

163. Limitations of Living Donor Liver Transplantation in Egyptian Children

Hanaa El-Karaksy, Nehal El-Koofy, Rokaya El-Sayed, Mona El-Raziky, Fatma Rabah, Mortada El-Shabrawi, Emad Salama, Tamer El-Baz and Mostafa El-Shazly

Hepato-Gastroenterology, 61(132): 1090-1093 (2014) IF: 0.907

Background: In Egypt, the liver transplantation (LTx) program that became available since 2001 is a living donor program. We aimed to assess the obstacles to pediatric LTx.

Methods: Over a six-month-period, 41 pediatric patients were indicated for LTx; their ages ranged between 1.5 months to 17 years. Patients and potential donors were evaluated according to the program protocol.

Results: The obstacles for performing LTx were classified into recipient, donor and program obstacles or limitations. Each patient may have more than one limitation. Late presentation and co-morbid conditions were on the top of the recipient list of obstacles. Refusal of potential donors to donate was the commonest limitation on the donor side (33%). The commonest program limitations were young age and small size of the recipient.

Conclusions: Limitations in recipient characteristics as well as donor shortage are still the main obstacles for living donor liver transplantation (LDLT) in our pediatric liver disease patients. Small weight and young age of potential LDLT candidates are the principle causes for delaying this life saving procedure. Increasing community awareness about living organ donation and nutritional support for end stage liver disease (ESLD) babies is pivotal, given our limitation to a living donor program.

Keywords: Children; Egypt; Liver transplantation; Obstacles

164. Glycogen Storage Disease Type III in Egyptian Children: A Single Centre Clinico-Laboratory Study

Hanaa El-Karaksy, Ghada Anwar, Mona El-Raziky, Engy Mogahed, Ekram Fateen, Amr Gouda, Fatma El-Mougy and Ahmed El-Hennawy

Arab Journal of Gastroenterology, 15: 63-67 (2014)

caused by deficiency of glycogen debrancher enzyme and is characterised by clinical variability. Patients and methods: We herein describe the clinical and laboratory findings in 31 Egyptian patients with GSD III presenting to the Paediatric Hepatology Unit, Cairo University, Egypt.

Results: Eighteen patients (58%) were males. Their ages ranged between 6 months to 12 years. The main presenting complaint was progressive abdominal distention in 55%. Twelve patients (38.7%) had a history of recurrent attacks of convulsions; four had an erroneous diagnosis of hypocalcaemia and epilepsy. Doll-like facies was noted in 90%. Abdominal examination of all cases revealed abdominal distention and soft hepatomegaly which had bright echogenicity by ultrasound. Hypertriglyceridaemia was present in 93.6%, hyperlactacidaemia in 51.6% and

hyperuricaemia in 19.4%. Liver biopsy showed markedly distended hepatocytes with well distinct cytoplasmic boundaries and 32% had macrovesicular fatty changes. Serum creatine kinase was elevated in 64.6% of patients and correlated positively and significantly with age ($r = 0.7$ and $P = <0.001$), while serum triglycerides correlated negatively with age ($r = 0.4$ and $P = 0.05$).

Conclusion: Blood glucose assessment and search for hepatomegaly in an infant with recurrent seizures may prevent delay in the diagnosis. A huge soft liver reaching the left midclavicular line that appears echogenic on ultrasonography is characteristic of GSD III. A distended hepatocyte with rarified cytoplasm is pathognomonic but not diagnostic. Hypertriglyceridaemia correlates negatively with age, in contrary to CK level.

Keywords: Children; Egypt; Glycogen storage disease; GSD; GSD III.

165. Spectrum of Beta Globin Gene Mutations in Egyptian Children with β -Thalassemia

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Mediterranean Journal of Hematology and Infectious Diseases, 6(1): 1-6 (2014)

The molecular defects resulting in a β -thalassemia phenotype, in the Egyptian population, show a clear heterogenic mutations pattern. PCR-based techniques, including direct DNA sequencing are effective on the molecular detection and characterization of these mutations. The molecular characterization of β -thalassemia is necessary for carrier screening, genetic counseling, and to offer prenatal diagnosis.

The aim of the work: was to evaluate the different β -globin gene mutations in two hundred-thalassemic Egyptian children. **Subjects and Methods:** This study was carried out on two hundred β -thalassemic Egyptian children covering most Egyptian Governorates including 158 (79%) children with thalassemia major (TM) and 42 (21%) children with thalassemia intermedia (TI). All patients were subjected to meticulous history taking, clinical examination, complete blood count, hemoglobin electrophoresis, serum ferritin and direct fluorescent DNA sequencing of the β -globin gene to detect the frequency of different mutations.

Results: The most common mutations among patients were IVS I-110(G>A) 48%, IVS I-6(T>C) 40%, IVS I-1(G>A) 24%, IVS I-5(G>C)10%, IVS II-848 (C>A) 9%, IVS II-745(C>G) 8%, IVS II-1(G>A) 7%, codon"Cd"39(C> T) 4%, -87(C>G) 3% and the rare mutations were: Cd37 (G>A), Cd8 (-AA), Cd29(-G), Cd5 (-CT), Cd6(-A), Cd8/9(+G), Cd 106/107(+G), Cd27(C>T), IVS II-16(G> C), Cd 28 (-C), Cap+1(A>C), -88(C>A), all of these rare mutations were present in 1%. There was a considerable variation in phenotypic severity among patients resulting from the interaction of different β (β^0) and β^+ mutations. Furthermore, no genotype-phenotype association was found both among the cases with thalassemia major and the cases with thalassemia intermedia.

Conclusion: Direct DNA sequencing provides insights for the frequency of different mutations in patients with β -thalassemia including rare and/or unknown ones. The most common mutations in Egyptian children with beta thalassemia were IVS I-110(G>A) 48%, IVS I-6(T>C) 40%, IVS I-1(G>A)24% , IVS I-5(G>C)10%, IVS II-848 (C>A) 9%, IVS II-745(C>G) 8%, IVS II-1(G>A) 7%.

Keywords: Thalassemia; Genetic mutation; DNA sequencing.

Dept. of Physiology

166. An Evidence for the Transcriptional Regulation of Iodothyronine Deiodinase 2 by Progesterone in Ovariectomized Rats

Hossam A. Awad and Zienab A. Alrefaia

Journal of Physiology and Biochemistry, 70(2): 331-339 (2014)
IF: 2.496

Recent literature lacks studies on the effects of progesterone withdrawal on peripheral conversion of thyroxin (T4) into triiodothyronine (T3) by iodothyronine deiodinase 2 (D2) in different body tissues. The present study aimed to assess the possible relation of progesterone to T4, T3, and D2 in ovariectomized rats. Thirty female Wistar rats were included into a sham-operated control group and an ovariectomized group. Four months following the surgical procedures, measurements of estradiol, progesterone, free T4, free T3, and thyroid-stimulating hormone (TSH) were done. Also, estradiol/progesterone and T4/T3 ratios were calculated. Tissue homogenates from the kidney, liver, brain, thyroid, mandible, and femur were used to assess expression of D2 mRNA. The estradiol/progesterone ratio showed a significant increase in ovariectomized rats. T4 showed a significant increase in contrast to T3 which showed a highly significant decrease following ovariectomy. The T4/T3 ratio was significantly increased in ovariectomized rats. In addition, D2 expression was significantly attenuated in all tissue homogenates of the ovariectomized group. The present work showed a significant positive correlation between T4 and T3 in the sham-operated control rats, which was abolished in ovariectomized rats. A negative significant correlation between progesterone and T4 was revealed in ovariectomized rats. There was also a significant positive correlation between progesterone and D2 expression in the ovariectomized group. The results of the present study hypothesize that progesterone withdrawal may underlie the decrement in D2 expression, with consequent reduction in the peripheral conversion of T4 into T3 leading to a hypothyroid state.

Keywords: Deiodinase 2 ; Ovariectomy ; Progesterone ; Thyroid hormones.

167. Resveratrol Reverses Cadmium Chloride-Induced Testicular Damage and Subfertility by Downregulating P53 and Bax and Upregulating Gonadotropins and Bcl-2 Gene Expression

Samy M Eleawa, Mahmoud A Alkhateeb, Fahaid H Alhashem, Ismaeel Bin-Jalial, Hussein F Sakr, Hesham M Elrefaey, Abbas O Elkari, Riyadh M Alessa, Mohammad A Haidara, Abdullah S. Shatoor and Mohammad A Khalil

Journal of Reproduction and Development, 60 (2): 115-127 (2014) IF: 1.635

This study was performed to investigate the protective and therapeutic effects of resveratrol (RES) against CdCl₂-induced toxicity in rat testes. Seven experimental groups of adult male rats were formulated as follows: A) controls+NS, B) control+vehicle (saline solution of hydroxypropyl cyclodextrin), C) RES treated, D) CdCl₂+NS, E) CdCl₂+vehicle, F) RES followed by CdCl₂

and M) CdCl₂ followed by RES. At the end of the protocol, serum levels of FSH, LH and testosterone were measured in all groups, and testicular levels of TBARS and superoxide dismutase (SOD) activity were measured. Epididymal semen analysis was performed, and testicular expression of Bcl-2, p53 and Bax was assessed by RT-PCR. Also, histopathological changes of the testes were examined microscopically. Administration of RES before or after cadmium chloride in rats improved semen parameters including count, motility, daily sperm production and morphology, increased serum concentrations of gonadotropins and testosterone, decreased testicular lipid peroxidation and increased SOD activity. RES not only attenuated cadmium chloride-induced testicular histopathology but was also able to protect against the onset of cadmium chloride testicular toxicity. Cadmium chloride downregulated the anti-apoptotic gene Bcl2 and upregulated the expression of pro-apoptotic genes p53 and Bax. Resveratrol protected against and partially reversed cadmium chloride testicular toxicity via upregulation of Bcl2 and downregulation of p53 and Bax gene expression. The antioxidant activity of RES protects against cadmium chloride testicular toxicity and partially reverses its effect via upregulation of Bcl2 and downregulation of p53 and Bax expression.

Keywords: Cadmium; Infertility; Resveratrol; Sperm; Testis.

168. Brief Assessment of Supine Heart Rate Variability in Normal Weight, Overweight, and Obese Females

Zienab Alrefaie

Annals of Noninvasive Electrocardiology, 19(3): 241-246 (2014) IF: 1.44

Background: Little research has been conducted on the heart rate variability (HRV) parameters in late adolescent females. The present study aimed to assess HRV time and frequency domain parameters in overweight and obese late adolescent females. Also to assess any possible correlation between HRV parameters and obesity indices in that particular age group.

Subjects and Methods: Fifteen-minute period of standardized ECG recording was implemented to record HRV time and frequency parameters in 42 normotensive euglycemic female medical students aged (18-21 years); lean (n = 13), overweight (n = 13), and obese (n = 16). For the analysis of results, 2.5-minute data were used.

Results: Root mean squares of successive differences between adjacent RR intervals (rMSSD) and high-frequency (HF) power were significantly decreased in overweight and obese late adolescent females. Parameters reflecting sympathetic activity which include low-frequency (LF) power and LF/HF ratio showed significant increase in overweight group. Interestingly, LF power was significantly reduced in obese group while the LF/HF ratio was insignificantly different. No significant correlations were observed between HRV indices and parameters of total or visceral obesity in the study groups.

Conclusion: HRV indices showed sympathetic hyperactivity in overweight late adolescent females and diminished sympathetic response in matching obese group. Both overweight and obese females showed decreased protective vagal influence on the heart.

Keywords: Females; Heart rate variability; Obesity; Overweight.

Dept. of Psychology

169. Correlates of Psychiatric Co-morbidity in a Sample of Egyptian Patients with Bipolar Disorder

Tarek Asaad, Tarek Okasha, Hisham Ramy, Mohamed Fekry, Nivert Zaki, Hanan Azzam, Menan AbdelMaksoud Rabie, Soheir Elghoneimy, Marwa Sultan, Hani Hamed, Osama Refaat, Iman Shorab, Mahmoud Elhabiby, Tamer Elgweily, Hanan ElShinnawy, Mohamed Nasr, Heba Fathy, Marwa A. Meguid, Doaa Nader, Doha Elserafi, Dalia Enaba, Dina Ibrahim, Marwa Elmissiry, Nesreen Mohsen and Sherin Ahmed

Journal of affective disorders, 166: 347-352 (2014) IF: 3.705

Background and objectives: Bipolar disorder (BD) is a complex, chronic mood disorder involving repeated episodes of depression and mania/hypomania. Two thirds of patients with bipolar disorder have a comorbid psychiatric condition. This study aims to assess the prevalence of Axis I diagnosis with its socio-demographic and clinical correlates among a sample of Egyptian patients with bipolar disorder.

Methods: Out of the 400 patients who were enrolled in the study from number of governmental and private psychiatric hospitals in Cairo, Egypt, 350 patients diagnosed with bipolar affective disorders (157 females and 193 males) with age ranging from 18 to 55 years were selected. Patients were assessed using the Structured Clinical Interview for DSM-IV Axis I disorder (Research Version) (SCID-I).

Results: Prevalence of psychiatric comorbidity among BD patients was 20.3% (71 patients) among which 63 patients (18%) had comorbid substance abuse and 8 patients (2.3%) had comorbid anxiety disorders.

Limitations : The study was limited by its cross sectional design with some patients having florid symptoms during assessment, not having a well representative community sample. This might have decreased the reliability and prevalence of lifetime psychiatric comorbidity due to uncooperativeness or memory bias. The study group was composed of bipolar patients attending tertiary care service which limits the possibility of generalizing these results on different treatment settings.

Conclusions: Substance abuse followed by anxiety disorders was found to be the most common psychiatric comorbidity. Family history of psychiatric disorders and substance abuse as well as current psychotic features were highly correlated with comorbidity.

Keywords: Bipolar disorder; Comorbidity; Substance abuse; Anxiety disorders.

170. Higher Frequency of C.3435 of the ABCB1 Gene in Patients with Tramadol Dependence Disorder

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Am J Drug Alcohol Abuse., 40(4): 317-320 (2014) IF: 1.47

Background: Polymorphic variation at the ABCB1 gene has been shown to affect the pharmacodynamics and kinetics of various drugs.

Aim: This study aimed to determine the frequency of occurrence of Single Nucleotide Polymorphism (SNP) in position A118G OPRM1 (rs1799971) gene and C.3435 (rs1045642) gene in tramadol users in comparison with normal controls.

Methods: This was a cross sectional case-control outpatient study. The study sample consisted of 127 subjects (74 tramadol-dependents and 50 healthy controls). All patients fulfilled the Diagnostic and Statistical Manual IV Criteria for substance dependence (on tramadol). Genotyping of the OPRM1 gene 118 SNP and ABCB1 genes C.3435 SNP was performed by PCR, followed by restriction fragment length polymorphism identification.

Results: A significant association was found between the ABCB1 gene T allele at the polymorphic site 3435 and tramadol dependence. No significant association was observed with the A118G OPRM1 gene.

Conclusion: The high frequency of ABCB1 gene T allele present at the polymorphic site 3435 could provide a protective mechanism from tramadol dependence disorder. Further study, using a larger sample, would be useful in further evaluating the possible role of ABCB1 gene polymorphisms.

Keywords: Tramadol; C.3435 gene; ABCB1 gene.

Dept. of Rheumatology

171. Assessment of the Treat-to-Target Strategy in Patients with Refractory Rheumatoid Arthritis

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Zeitschrift Für Rheumatologie, 73: 746-753 (2014) IF: 0.465

Aim: The goal of the present study was to prospectively assess the long-term clinical outcome of biologic modifying drug therapy in a population of Saudi rheumatoid arthritis (RA) patients.

Patients and methods: This is the first prospective, long-term report on the efficacy and safety of biologic therapy in Saudi RA patients. It is a single center, observational study with a follow-up period of 3 years. Enrolled were 120 biologic naïve patients (94 women, 78.3%; mean age 48.4±7.9 years, mean disease duration 7.3±3.9 years) with the diagnosis of RA (ACR/EULAR, 2010 criteria) who were inadequate responders to methotrexate and synthetic DMARDs.

Results: After 3 years, the mean Disease Activity Index-28 (DAS-28), Health Assessment Questionnaire (HAQ), Pain Score, ESR, and CRP values improved significantly. Of the 99 patients completing the 3-year follow-up, 35.3% of patients achieved DAS-28 remission and 53.5% achieved low disease activity, and 11.1% of patients had moderate to high activity scores. At the 3-year follow-up, 80% of patients had no evidence of significant radiographic progression (achieved <0.5 of the mean total Sharp score). Infections were reported in 11.7% and significantly correlated with conjugate use of oral prednisolone at doses above 5 mg/day, with chest infections being the most common type of infection (6.7%).

Conclusion: The results of this study can be understood as real-life clinical experience displaying the incremental benefit of biologic therapy in refractory disease when it is added to other optimal strategies. The study showed satisfying clinical and functional benefit with considerable safety.

Keywords: Treat to target; Refractory rheumatoid.

172. Etanercept Therapy in Behçet's Disease

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Zeitschrift Für Rheumatologie, 73: 650-656 (2014) IF: 0.465

Study objective: The goal of the present study was to investigate patient outcome when using the TNF receptor fusion protein etanercept in addition to conventional immunosuppressive drugs in ameliorating disease intensity and reducing relapses in refractory Behçet's disease (BD).

Patients and methods: A single center, prospective study was conducted over 1 year. A total of 15 patients with the established diagnosis of BS were enrolled (mean age: 36.5±6.75 years, mean disease duration: 3.86±1.30 years). Clinical features were classified as refractory if the patients failed to achieve the desired response within 6 months of immunosuppressive and oral glucocorticoid therapy or flare of lesions developed while on the maximum tolerable doses of these drugs. The study included 2 patients who were on previous infliximab therapy for refractory disease. Inflammatory biomarkers (ESR and CRP) were investigated.

Results: Baseline clinical features in the study prior to inclusion showed recurrent oro-genital ulcers were observed in 100% of patients, the pathergy test was positive in 17.6%, ocular involvement was observed in 86.7%, and acne lesions were recorded in 73.3%. The following values were also recorded: mean ESR 22±16.97 mm/h, mean CRP level 6.87±4.44 mg/l, mean visual analog score 5.46±1.55, and mean patient global score 5.13±1.30. At the beginning of the study, all patients were on oral prednisolone (mean dose: 20.16±11.81 mg/day), azathioprine (mean dose: 126.66±25.81 mg/day), and oral colchicine (mean dose: 1.08±0.10 mg/day), then etanercept was added at a regular weekly dose of 50 mg subcutaneously for 1 year. By 8 weeks, 100% of the patients achieve the primary endpoint, which included clinical resolution of refractory mucocutaneous, joint, and active ocular lesions with normalization of the acute phase symptoms.

Conclusion: Patients with refractory BD who received a 12-month treatment with etanercept in addition to conventional immunosuppressive therapy achieved a good therapeutic response with successful reduction of oral prednisolone to a mean dose of 6.66±2.24 mg/day. No serious infections or drug-related adverse events reported.

Keywords: Behçet disease; Etanercept; Refractory disease.

Dept. of Surgery

173. Strategies in the Management of Post-burn Breast Deformities

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Eur J Plast Surg 37:85-94 (2014)

Background Burn injuries: to the chest area may end up with severe breast deformity and asymmetry. They are frequently complex and unique to each case, affecting parenchymal development, breast implantation on chest wall, nipple areola complex position, infra-mammary fold definition, and skin envelope. Furthermore, contractures affecting adjacent territories may occur and add to the deformity. Surgical correction should address all the deformity components. Thus, a structured reconstructive plan that recruits different mammoplasty techniques and deals with adjacent territories is needed. This work presents different strategies used in treating severe post-burn breast deformities. Elaborate analyses of the deformities, surgical techniques, and outcomes are presented and a structured reconstructive plan is proposed.

Methods: Sixteen deformed breasts in 11 patients (mean age, 22 years) were managed. The techniques used included a variety of mastopexy techniques, prosthesis-based endoscopic breast reconstruction, and autologous breast augmentation with fat grafting or local flaps in some hypoplastic cases. Ancillary procedures to the neck, axilla, and abdomen were carried out to release the breast when tethered by their contractures.

Results: Considerable improvement and reasonable symmetry were achieved in most cases. All patients were satisfied with the results, tolerated the need for multiple procedures, and accepted residual minor asymmetries.

Conclusions: A post-burn breast deformity has a complex nature that may be addressed on multiple stages with different techniques of mastopexy, augmentation, and reconstruction. Ancillary procedures to a contracted adjacent territory may be needed to release the breast if tethered. Adopting a structured reconstructive plan may help obtain reproducible constant results.

Level of Evidence: Level IV, therapeutic study.

Keywords: Burn;. Breast deformity; Reconstruction; Strategies.