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Dear colleagues,

We are pleased to introduce vol. 9 (2.) issue of the international publications of Cairo University. It is a further step and distinct contribution, reflecting the scientific ability of staff members, which conforms to international quality standards.

The purpose of issuing these publications is mainly to introduce this work to the academic community, demonstrate the different research abilities of Cairo University researchers, and encourage them to increase the quality and quantity of their research.

We would like to assure you that the administration will spare no effort to support and reinforce these goals.

We congratulate all colleagues who were granted the awards for their international publications of the year 2014 and wish them all the best for their future endeavors.

Also, we refer that there is a list of book and chapters, which internationally Published by the Staff members in the end of this issue.

We are also pleased to inform you that this policy will continue to be in effect for the years to come.

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Prof. Gamal Esmat

Vice - President for post-graduate studies and research
Cairo university

Prof. Gaber Nassar

President
Cairo university

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Faculty of Science

Dept. of Astronomy and Meteorology

1. Derivation of the Gaussian Plume Model in Three Dimensions

M. M. Abd El-Wahab, Khaled S. M. Essa, H. M. Elsman, A. Sh. Soliman, S. M. Elgmmal and A. A.Wheida

Mausam, 65: 83-92 (2014) IF: 0.152

Gaussian plume model is a common model to study advection diffusion equation which is solved in three dimensions by using Laplace transformation considering constant eddy diffusivity and wind speed power law. Different schemes such as Irwin, Power Law, Briggs and Standard methods are used to obtain crosswind integrated concentration. Statistical measures are used in this paper to know which is the best scheme which agrees with the observed concentration data obtained from Copenhagen, Denmark. The results of model are compared with observed data

Keywords: Gaussian-plume model; Dispersion parameter scheme; Downwind distances; Copenhagen.

2. Effects of J2 Perturbation on Geometrical Relative Motion

Rahoma, W. A and F. Deleflie

Indian Journal of Science and Technology, 7(7): 968-974 (2014)

By exploiting a direct geometrical approach, an exact and efficient analytic formulation of relative motion was presented. Using the orbital elements without imposing any particular conditions on the base or the target satellites trajectories, exact expressions for the relative motion are obtained in a closed form. This solution allows the parameterization of the relative motion manifold and offers new methods to study its geometrical and topological properties. The study is complete and it maintains a high degree of accuracy even in the presence of J2 perturbations. It is adequate for long-term prediction of bounded relative orbits.

Keywords: Geometrical Approach; Relative Motion; Satellites Constellations.

3. Orbital Elements Evolution Due to A Perturbing Body in an Inclined Elliptical Orbit

Walid Ali Ahmed Hassan Rahoma

Journal of Astronomy and Space Sciences, 31: 199-204 (2014)

This paper intends to highlight the effect of the third-body in an inclined orbit on a spacecraft orbiting the primary mass. To achieve this goal, a new origin of coordinate is introduced in the primary and the X-axis toward the node of the spacecraft. The disturbing function is expanded up to the second order using Legendre polynomials. A double-averaged analytical model is exploited to produce the evolutions of mean orbital elements as smooth curves.

Keywords: Third-body perturbations; Averaged model; long period perturbations.

4. The Effects of Moon'S Uneven Mass Distribution on the Critical Inclinations of A Lunar Orbiter

Walid Ali Ahmed Hassan Rahoma and Fawzy Ahmed

Journal of Astronomy and Space Sciences, 31: 285--294 (2014)

The uneven mass distribution of the Moon highly perturbs the lunar spacecrafts. This uneven mass distribution leads to peculiar dynamical features of the lunar orbiters. The critical inclination is the value of inclination which keeps the deviation of the argument of pericentre from the initial values to be zero. Considerable investigations have been performed for critical inclination when the gravity field is assumed to be symmetric around the equator, namely for oblate gravity field to which Earth's satellites are most likely to be subjected. But in the case of a lunar orbiter, the gravity field of mass distribution is rather asymmetric, that is, sectorial, and tesseral, harmonic coefficients are big enough so they can't be neglected. In the present work, the effects of the first sectorial and tesseral harmonic coefficients in addition to the first zonal harmonic coefficients on the critical inclination of a lunar artificial satellite are investigated. The study is carried out using the Hamiltonian framework. The Hamiltonian of the problem is cconstructed and the short periodic terms are eliminated using Delaunay canonical variables. Considering the above perturbations, numerical simulations for a hypothetical lunar orbiter are presented. Finally, this study reveals that the critical inclination is quite different from the critical inclination of traditional sense and/or even has multiple solutions. Consequently, different families of critical inclination are obtained and analyzed.

Keywords: Lunar orbiter; Sectorial and tesseral harmonics; Short periodic terms; Canonical variables; Critical inclination.

Dept. of Botany

5. Biosorption of Pb(II) and Co(II) Ions from Aqueous Solutions Using Pretreated Rhizopus Oryzae (Bread Mold)

Mohammed M Gharieb, Abdulkawi Ali Al-Fakih and Mohamed I. Ali

Arabian Journal for Science and Engineering, 39: 2435-2446 (2014) IF: 0.367

Biosorption of Pb(II) and Co(II) ions from aqueous solutions was studied in a batch mode by using NaOH-pretreated Rhizopus oryzae. The optimum biosorption conditions were studied and determined by investigating pH, time course, initial metal concentration, temperature, co-ions and others. Optimum experimental parameters were determined to be pH (4 for Pb (II) and 7 for Co(II)), contact time 60 min, biomass dose 2 g L^{-1} of solution, and temperature 25 °C. Metal biosorption reached a saturation value at about 200 mg L^{-1}. At this concentration, the biosorbed Pb(II) and Co(II) reached 69.73 ± 1.48 and 13.56 ± 0.37 mg g^{-1}, respectively. Contrary to Co(II) biosorption, Pb(II) biosorption was unaffected by the presence of many competing ions, but significantly decreased when $PO4^{3-}$ was added. The Langmuir constant (q_{max}) values are close to the experimental, indicating the ability of this model to describe biosorption process. According to q e values obtained from pseudo-second-order model and values of R^2 (0.964 for Pb(II) and 0.992 for Co(II)), the kinetic studies indicated that the biosorption process for both metals followed well pseudo-second order model.

Regarding thermodynamic parameters, the values of ΔG^o at 25 °C were -26.58 kJ mol^{-1} for Pb(II) and 20.70 kJ mol^{-1} for Co(II), ΔS^o (69 J mol-1 K-1 for Pb(II) and Co(II)), and ΔH^o (2.82 kJ mol^{-1} for Pb(II) and -0.47 kJ mol^{-1} for Co(II)). The results showed that metal biosorption by R. oryzae is feasible, spontaneous, endothermic in nature for Pb(II) and exothermic for Co(II). FTIR spectral analysis indicated the involvement of –COOH, –OH and –NH groups in the biosorption process.

Keywords: Biosorption; Rhizopus oryzae; Lead (II); Cobalt (II)

6. Optimization of Production and Factors Affecting the Stability of A New Protease Produced by A Thermohaloalkali Tolerant Halobacillus Strain

Ali, M. I. A., W. N. Hozzein, A. M. Reyad, and M. A. S. Hameed

Journal of Pure and Applied Microbiology, 8: 703-707 (2014) IF: 0.073

The optimized conditions for the production of a protease produced by a thermohaloalkali tolerant Halobacillus strain were determined. The results showed that the optimum temperature for enzyme activity was 65ºC and the highest proteolytic activity was obtained at 10% NaCl. Also, the enzyme exhibited proteolytic activity over a broad pH range from 5 to 13 and the highest activity achieved in the range from 9 to 12. However, casein, glycerol and glucose as carbon sources supported the highest growth, but protease production was not supported by them similarly and the highest protease activity was obtained with galactose. The highest protease activity was obtained also with NH4Cl as a nitrogen source. On the other hand, the maximum protease stability was obtained at 30oC and remained stable till 65oC after which the stability decreased gradually and beyond 75oC the activity decreased sharply. Surprisingly, the stability of the protease decreased with the increase of NaCl concentrations. The stability of the protease was maximum at pH 7 and remained highly stable up to pH 11. These results clearly indicated the thermohaloalkali tolerant nature of the enzyme.

Keywords: Protease; Production optimization; Stability; Thermohaloalkali tolerant ; Halobacillus sp.

7. Purification and Biochemical Characterization of Xylanase from Sclerotium Rolfsii

Tarek A. A. Moussa, Neveen M. Khalil, Dalia M. I. Ali and Fatma A. Mostafa

Journal of Pure and Applied Microbiology, 8: 4727-4733 (2014) IF: 0.073

Xylanases have received great attention in the development of environment-friendly technologies in the paper and pulp industry. Their use could greatly improve the overall lignocellulosic materials for the generation of liquid fuels and chemicals. Fungi are widely used as xylanase producers and are generally considered as more potent producers of xylanases than bacteria and yeasts. After the purification steps, a purified xylanase enzyme was obtained with purification fold 14.3. The SDS-PAGE for enzyme protein gave a single band at about 32 kDa. The zymogram technique was performed to ensure that the purified enzyme was xylanase using 0.1% brichwood xylan. The optimum reaction temperatures of the xylanase enzyme were 50°C and 60°C, while optimum pH values were 5.0 and 6.0. From the above we can conclude that the optimum temperature lies between 50-60°C and optimum pH lies between pH 5.0 and 60. The activity of xylanase enzyme was stable at 50°C and 60°C, and pH 4.0 and 5.0 for at least 2 hrs. Mg^{2+} was the only metal, which enhanced the xylanase activity, while Cu^{2+} and Hg^{2+} showed the highest inhibitory effects on the activity of xylanase. The metal chelating agent EDTA had moderately inhibitory effect on enzyme activity.

Keywords: Xylanase; SDS-PAGE; Zymogram; Inhibitors; Sclerotium rolfsii.

8. Spatial Distribution and Soil Characteristics of the Vegetation Associated with Common Succulent Plants in Egypt

Monier Abd El-Ghani, Ashraf Soliman and Reham A.Fattah

Turkish Journal of Botany, 38: 550-565 (2014)

The most succulent species-rich family in Egypt is Chenopodiaceae, followed by Aizoaceae and then Zygophyllaceae, Crassulaceae, and Orobanchaceae. The Sinai Peninsula and the Mediterranean regions include most of these succulent species, at 73.2% and 53.7%, respectively. A floristic data matrix (59 stands and 137 species) was subjected to classification by 2-way indicator species analysis (TWINSPAN). This yielded 8 vegetation groups. The most prominent groups were the Mesembryanthemum crystallinum-Mesembryanthemum nodiflorum group, the Anabasis articulata group, the Zygophyllum coccineum - Zilla spinosa group, and the Zygophyllum album group. The vegetation associated with the 5 most common succulent plants was analyzed, and variations in floristic composition were described. Sixteen soil physical and chemical parameters from stands dominated by each of the studied succulent plants were analyzed. This investigation demonstrated the role of 12 soil factors in affecting the distribution of the 5 studied succulent plants: electric conductivity, pH, bicarbonates, sulfates, $CaCO_3^{++}$, Ca^{++}, Mg^{++}, K^+, Na^+, Cl^-, silt, and sand. The application of canonical correspondence analysis indicated that the distribution of Arthrocnemum macrostachyum was affected by Mg and electric conductivity; Zygophyllum album was affected by SO_4^{++}, electric conductivity, and Ca^{++}; and Anabasis articulata, Haloxylon salicornicum, and Zygophyllum coccineum were highly affected by percentages of sand and clay and values of $CaCO_3$, total mineral nitrogen, and pH.

Keywords: Egypt; Multivariate analysis; Soil–Vegetation Relationships; Succulent Plants; Vegetation dynamics.

Dept. of Chemistry

9. 1,3,4-Thiadiazoles of Pharmacological Interest: Recent Trends in Their Synthesis *Via* Tandem 1,3-Dipolar Cycloaddition: Review

Ahmad S. Shawali

Journal of Advanced Research, 5: 1-17 (2014) IF: 3

This review article presents a survey of the utility of a new synthetic strategy for 1,3,4-thiadiazole derivatives based on reactions of nitrilimines with various functionalized sulfur dipolarophiles which proceed *via* tandem *in situ* 1,3-dipolar cycloaddition and ß-elimination of simple molecule from the initially formed cycloadduct. The biological activities of some of the compounds prepared by such a strategy are pointed out. Only

the literature reports within the period from 2000 to mid 2012 are covered.
Keywords: Hydrazonoyl halides; Dithiocarboxylates; Dithiocarbazates; Thiourea; Carbonothioic dihydrazide.

10. Enhanced Electrocatalytic Activity and Stability of Platinum, Gold, and Nickel Oxide Nanoparticles-Based Ternary Catalyst for Formic Acid Electro-Oxidation

Gumaa A. El-Nagar and Ahmad M. Mohammad

International Journal of Hydrogen Energy, 39: 11955-11962 (2014) IF: 2.93

The global interest to realize and commercialize the direct formic acid fuel cells has motivated the development of efficient and stable anodes for the formic acid (FA) electro-oxidation (FAO). In this investigation, a ternary catalyst composed of Pt nanoparticles (PtNPs), Au nanoparticles (AuNPs) and nickel oxide nanoparticles (nano-NiO_x), all were sequentially electrodeposited onto the surface of a glassy carbon (GC) electrode, was recommended for this reaction.
The surface morphology investigation revealed the deposition of grain-shaped PtNPs (25 nm average particle size), and flower-shaped nanospheres (less than 60 nm average particle size) of AuNPs and nano-NiO_x. Interestingly, the ternary modified NiO_x-Au-Pt/GC electrode has shown an outstanding electrocatalytic activity towards the direct FAO, concurrently with a complete suppression for the indirect route.
It further exhibited excellent stability that extended for 7 h of continuous electrolysis. While PtNPs furnished a suitable base for FA adsorption, AuNPs played a significant role to interrupt the contiguity of the Pt surface sites, which is necessary for CO poisoning. On the other hand, nano-NiO_x acted as a catalytic mediator facilitating the charge transfer of FAO and the oxidative removal of CO at a lower potential.
Keywords: Electrocatalysis; Gold nanoparticles; Platinum nanoparticles; Nickel oxide nanoparticles; Direct formic acid fuel cells; Third body.

11. Chemoselectivity in 1,3-Dipolar Cycloaddition Reactions of Nitrilimines with Multifunctionalized Dipolarophiles

Ahmad Sami A. S. Shawali

Current Organic Chemistry, 18: 598-614 (2014) IF: 2.53

This review presents a survey of literature reports dealing with both site and peri-selectivities in cycloaddition reactions of nitrilimines with multifunctionalized dipolarophiles.The iterature results covered in this review, during the period from 1970 to mid 2013, demonstrate that chemo-selectivity plays an important role in synthetic design.
Keywords: Chemoselectivity; Heterocycles; Hydrazonoyl halides; Mitrilimines.

12. Recovery of Molybdenum from Uranium Bearing Solution by Solvent Extraction with 5-Nonylsalicylaldoxime

T.A. Lasheen, M.E. Ibrahim, H.B. Hassib and A.S. Helal

Hydrometallurgy, 146: 175-182 (2014) IF: 2.224

5-Nonylsalicylaldoxime, LIX 622N was used to extract and recover Mo(VI) from sulfate leach liquor containing Mo(VI) and U(VI). The extraction parameters were optimized as 10%(v/v) LIX 622N diluted in kerosene at equilibrium pH 1.0 and O/A phase ratio = 1:1. Under these conditions, complete extraction of Mo(VI) was realized by a two-stage counter current extraction. The formed complex MoO_2R_2 is assessed by FTIR analysis. The molybdenum content in the organic phase was stripped using a mixture of 2 M NH_4OH + 2 M $(NH_4)_2CO_3$. It was precipitated at pH value 2.0 as ammonium molybdate. After drying, thermal decomposition high purity (> 99.9%) of MoO_3 was produced. The effect of temperature on the Mo(VI) extraction process showed that, the extraction process is exothermic with enthalpy change -24.514 kJ mol^{-1}.
Keywords: Recovery of molybdenum; 5-Nonylsalicylaldoxime; Molybdenum–uranium.

13. Synthesis, Spectroscopic, Thermal and Magnetic Characterization of Novel Spin-Crossover Iron(II) Complexes with 4-Cyclopropyl-1,2,4-Triazole

Ahmed A. Soliman Mohamed M. Khattab, Hosam H. Abdelhady, Ivan Šalitrošc and Wolfgang Linert

Inorganica Chimica Acta, 418: 99-105 (2014) IF: 2.046

The new bidentate ligand 4-cyclopropyl-1,2,4-triazole (4-C_3trz) has been synthesized and used for preparing 1D Fe(II) SCO compounds of the formula $[Fe(4\text{-}C_3trz)_3](X)_2.nH_2O$; where: X = BF_4^-, n = 3 for compound (1) and X = ClO_4^-, n = 2 for compound (2). The new complexes (1) and (2) were characterized using elemental analyses, IR-, mass spectroscopy and thermal analysis. The thermally induced spin-crossover behavior of the complexes was inspected by temperature dependent magnetic susceptibility (SQUID) and DSC measurements. The results of magnetic susceptibility (SQUID) and DSC showed abrupt and complete spin transition with a hysteresis loop $T^{\uparrow}_{1/2}$ = 230/222, $T^{\downarrow}_{1/2}$ = 221/208 K for complex (1) and $T\uparrow_{1/2}$ = 218/193, $T\downarrow_{1/2}$ = 202/183 K for complex (2) using SQUID/DSC, respectively. The enthalpy and entropy associated with the spin transition (ST) evaluated by DSC results were$\Delta_{trans}H$ =I+21.6 and +20.4 kJ mol^{-1} and $\Delta_{trans}S$ =+ 97.5 and +105.5 J mol^{-1} $K^{-1}$for the (1) and (2), respectively.
Keywords: Iron(II); Cyclopropyltriazole; Spin crossover (SCO).

14. Enhanced 4-Amino-5-Methyl-4H-1,2,4-Triazole-3-Thiol Inhibition of Corrosion of Mild Steel in 0.5 M H_2so_4 by Cu(II)

Omar A. Hazazi1, Ahmed Fawzy, Mohamed R. Shaaban and Mohamed I. Awad

International Journal of Electrochemical Science, 9: 1378-1389 (2014) IF: 1.956

The synergistic inhibition effect between Cu^{2+} and 4-amino-5-methyl-4H-1,2,4-triazole-3-thiol (AMTT) on the corrosion

behavior of mild steel in 0.5 M H_2SO_4, both in the absence and presence of chloride ions, has been investigated by potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) techniques. The ptentiodynamic polarization and EIS results consistently revealed that Cu^{2+} and AMTT mixture had a synergistic inhibitive effect on the corrosion of mild steel in 0.5 M H_2SO_4 as a result of the cooperative adsorption of the two species on mild steel. AMTT alone and in combination with Cu^{2+} and/or chloride were found to obey Temkin adsorption isotherm. Chemical adsorption is proposed based on obtained values of ΔG^{o}_{ads}.

Keywords: Corrosion inhibitor; A trizaole derivative; Mild steel; Halide ions; Synergism; Cu(II).

15. DNA Binding and Equilibrium Investigation of the Interaction of A Model Pd(II) Complex with Some Selected Biorelevant Ligands

Azza A. Shoukry

Journal of Solution Chemistry, 43: 746-762 (2014) IF: 1.083

The $Pd(DAP)Cl_2$ complex, where DAP is 2,6-diaminopyridine, was synthesized and characterized. The stoichiometries and stability constants of the complexes formed between various biologically relevant ligands (amino acids, amides, DNA constituents, and dicarboxylic acids) and $[Pd(DAP)(H_2O)_2]^{2+}$ were investigated at 25°C and at constant 0.1 $mol.dm^{-3}$ ionic strength. The concentration distribution diagrams of the various species formed were evaluated. A further investigation of the binding properties of the diaqua complex $[Pd(DAP)(H_2O)_2]^{2+}$ with calf thymus DNA (CT-DNA) was investigated by UV–Vis spectroscopy. The intrinsic binding constants (K_b) calculated from UV– Vis absorption studies is 1.04×10^3 $mol.dm^{-3}$. The calculated (K_b) value was found to be of lower magnitude than that of the classical intercalator EB (ethidium bromide) (K_b = 1.23 (±0.07) 9 10^5 $mol^{-}dm^{-3}$), suggesting an electrostatic and/or groove binding mode for the interaction with CT-DNA.

Keywords: Palladium (II); 2,6-Diaminopyridine; Biorelevant ligands; Calf thymus DNA stability constant; Electronic absorption spectroscopy.

16. Separation and Extraction of Uranium from Leach Liquor Containing Uranium and Molybdenum by Solvent Extraction with Lix 622N

M. E. Ibrahim, T. A. Lasheen, H. B. Hassib and A. S. Helal

J., of Dispersion Science and Technology, 35: (2014) IF: 0.705

The leach liquor (0.5 g/L Mo, 0.05 g/L U) obtained from the leaching process of molybdenum-uranium ore material was treated using solvent extraction to recover U(VI) by LIX 622N, which is a salicylaldoxime derivative. The influence of various basic variables such as pH, concentration of LIX 622N, temperature, different stripping reagents, phase ratio, and diluents was examined. Using 10% LIX 622N with the aqueous solution of equilibrium pH 6.0 and a phase ratio organic phase:aqueous phase (O:A) = 1:1, a two-stage McCabe-Thiele plot was constructed, which showed 99.9% of U extraction with no co-extraction of molybdenum. This was confirmed by a 6-cycle counter current simulation (CCS) study. The obtained data of temperature on the extraction of uranium showed that the extraction process is exothermic with enthalpy change of -20.949 $kJ\ mol^{-1}$. The stripping of U(VI) was quantitative using 4 M H_2SO_4. The stable complex $UO_2(HSO_4)$Rorg formed during extraction, which supports the cation exchange mechanism, and was confirmed by FTIR spectral analysis.

Keywords: Extraction of uranium; LIX 622N; Molybdenum-uranium.

17. Biodegradation Behavior of Poly(Lactic Acid) (PLA)/Distiller'S Dried Grains with Solubles (DDGS) Composites

Hong Lu, Samy A. Madbouly, James A. Schrader, Gowrishankar Srinivasan, Kenneth G. McCabe, David Grewell, Michael R. Kessler and William R. Graves

Sustainable Chemical Engineering, 2: 2699-2706 (2014)

Poly (lactic acid) (PLA) and distiller's dried grains with solubles (DDGS) are biobased materials with strong potential for industrial applications. This paper reports the biodegradation behavior of PLA/DDGS (80/20 by weight), a composite material developed for use in highquality, economical, biodegradable, crop containers for the horticulture industry. Biodegradation experiments were performed in soil under landscape conditions. Surface morphology and thermal properties were evaluated by scanning electron microscopy (SEM), dynamic mechanical analysis (DMA), and differential scanning calorimetry (DSC). We found that adding 20% DDGS to form the PLA/DDGS composite can accelerate the biodegradation rate and enhance the storage modulus compared to pure PLA. The weight loss of the PLA/DDGS composite during 24 weeks of degradation time was 10.5%, while the weight loss of pure PLA was only 0.1% during the same time interval. Cracks and voids caused by erosion and loss of polymer chain length were clearly observed on the surface of the composite material in response to increasing degradation time. The thermal stability of the composite increased with increasing degradation time. The glass transition temperature and melting temperature increased during early stages of biodegradation (up to 16 weeks) and then decreased slightly. We confirm that DDGS can function as a cost-effective biodegradable filler for PLA composites that can provide enhanced mechanical properties with only slight changes in thermal properties when compared to pure PLA.

Keywords: Poly (lactic acid); DDGS; Composites; Biodegradation; Horticulture industry.

18. In Situ Modified Ion Selective Electrodes for Potentiometric Determination Sildenafil Citrate and Some of its Formulations

Faten A. Nour El-Dien, Gehad G. Mohamed, Eman Y.Z. Frag and Mohamed M.A. Diab

Journal of Pharmacy Research, 8(4): 437-447 (2014)

The construction and performance characteristics of different Sildenafil citrate (SILC) drug potentiometric sensors are described. Three types of electrodes are demonstrated, namely In situ modified screen-printed (ISPE), In situ modified carbon paste (ICPE) and the conventional In situ modified IPVC membrane electrodes. The cited electrodes are based on Sodium tetraphenylborate (NaTPB), ammonium reineckate (RN),

Phosphomolybdic acid (PMA) and Phosphotungestic acid (PTA) ion pairing agents which show a considerable selectivity towards SILC with Nernstian or nonnernstian slopes depending on the type of the electrode and the various ion pairing agents incorporated. Different parameters were studied for each electrode achieve near nernstian or nernstian slope values such as matrix compositions and contents, pH, Temperature, selectivity, response time and life time. ISPE incorporated with Sodium tetraphenylborate (NaTPB) with dibutylphthalate (DBP) as membrane plasticizer, showed the best electroanalytical performances in the concentration range from 2 x 10^{-8} to 1 x 10^{-2} mol L^{-1} with Nernstian compliance 60.37 ± 1.95 mV $decade^{-1}$ and detection limit of 2.51 x 10^{-8} mol L^{-1}. Fast response time of about 3 s and adequate shelflife (12 weeks) was achieved. The developed electrodes have been successfully applied for the potentiometric determination of SILC in pharmaceutical formulation under batch.

Keywords: In situ modified screen; Printed electrode; Potentiometric calibration; Sildenafil citrate; Pharmaceutical formulations.

19. Spectrophotometric Determination of Diazepam Via Charge Transfer Complex Formation Reaction

Gehad G. Mohamed, Eman Y.Z. Frag, M.A. Zayed, M.M. Omar and Sally E.A. Elashery

Journal of Pharmacy Research, 8(10): 1503-1509 (2014)

A spectrophotometric method has been developed for the determination of diazepam (DZP) in bulk drug and in pharmaceutical formulations.

Methods: This method is based on the formation of coloured charge transfer complexes of diazepam which act as electron donor with 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) and 2,5 - dichloro-3,6-dihydroxy-1,4-benzoquinone (p-CLA) reagents which act as ðp -acceptors in acetonitrile solvent.

Results: DDQ and p-CLA were found to form charge-transfer complexes in a 1:1 stoichiometry [drug:reagent] with diazepam with a maximum absorption band at 550 and 480 nm, respectively. Optimization of temperature and time proved the supremacy of 20 and 30 °C and 20 and 5 minutes for DDQ and p-CLA reagents, respectively. Beer's law was obeyed over the concentration ranges of 10-150 and 10-250 µg mL-1 of DZP drug with high apparent molar absorptivities of 5.20x102 and 5.41 x102 and limits of detections are 6.83 and 9.60 µg mL-1 using DDQ and p-CLA reagents, respectively. The results were compared with those given by the official method and showed that the developed methods are accurate, precise and reproducible.

Conclusion: Thus the proposed methods are successfully applied to the determination of DZP in pharmaceutical formulations.

Keywords: Diazepam; Charge-transfer complex; DDQ; p-CLA; Spectrophotometry Ammonium Bromide.

Dept. of Entomology

20. Potential Studies of Non-Conventional Chemicals Against the Housefly Larvae Musca Domestica L.

Kh. M. Al-Ghamdi , M. S. Saleh,J. A. Mahyoub , Alanazi Naimah Asid , Ahmed R. Al-Najada, Mamdouh I.N and B. Z. Alfarhan

Life Science Journal, 2014;11(12): 1046-1049 (2014)

Three insect growth regulators (IGRs) triflumuron, cyromazine and pyriproxyfen as well as the plant extract neem oil were evaluated against 2nd instar larvae of Musca domestica by feeding and dipping bioassay methods. In both assays, cyromazine proved to be the most effective compound against housefly larvae, followed by triflumuron and pyriproxyfen, while the plant extract neem oil was the least effective one. According to IC50 values (concentration which to inhibit the emergence of 50% of adults), the results indicated that larval treatments with the test compounds using feeding method (0.6, 0.35, 0.66 and 43 ppm, respectively) were more effective for larvicidal activity than dipping assay (0.8,0.46, 0.9 and 60 ppm, respectively). Different levels of potentiation reflected by the inhibition of adult emergence were also obtained when the test IGRs were applied jointly with the plant extract neem oil against housefly larvae.

Keywords: Musca domestica; Housefly larvae; Larval bioassay; Insect growth regulators; Plant extract; Joint action.

Dept. of Geology

21. Petrology and Sm–Nd Dating of the Genina Gharbia Alaskan-Type Complex (Egypt): Insights Into Deep Levels of Neoproterozoic Island Arcs

Hassan M. Helmy, Yasser M. Abd El-Rahman, Masako Yoshikawa, Tomoyuki Shibata, Shoji Arai, Akihiro Tamura and Hiroo Kagami

Lithos, 198–199: 263-280 (2014) IF: 3.654

The deep levels of Neoproterozoic island arcs are poorly known due to limited accessibility. The Genina Gharbia Alaskan-type complex (south Eastern Desert, Egypt) is the remains of a magma chamber that crystallized at the base (crust–mantle boundary) of a mature Neoproterozoic island arc.

The rock assemblage comprises hornblende-bearing harzburgite, lherzolite, pyroxenite, norite and gabbro. All lithologies show cumulus texture with evidence of extensive cumulus mineral–melt interactions. Clinopyroxenes from all lithologies have similar rare earth element (REE) patterns with slight medium-rare earth element (MREE) enrichment. Hornblendes are slightly enriched in MREE and light rare earth elements (LREE).

Island arc signatures are indicated by high contents of large ion-lithophile elements and low concentration of high field-strength elements. Positive initial eNd (+ 5.7 to + 7.0) and Nd model ages (963 ± 81 Ma) are consistent with the Genina Gharbia magma being extracted from a depleted mantle source.

Modeling of estimated parental magma indicates 10% partial melting of a 90% depleted mantle source with a 10% (MORB + sediments)-derived fluid, commencing in the spinel stability field (< 85 km). Relative to Phanerozoic arcs, the Neoproterozoic arcs were more hydrous, had low oxidation states and probably lasted shorter time to build-up.

The hydrous nature of the sub-Arabian–Nubian Shield mantle and the long-life of the arcs are among reasons responsible for the vast crustal growth during the Pan-African Orogeny throughout the Gondwana.

Keywords: Sub-arc Magmatism Nd Model ages; Alaskan type Complex; Neoproterozoic island arcs; Eastern desert- Egypt.

22. Genesis of Neoproterozoic Au-Bearing Volcanogenic Sulfides and Quartz Veins in the Ar Rjum Goldfield, Saudi Arabia

H.M. Harbi, A.A. Surour and G.J. Davidson

Ore Geology Reviews, 58: 110-125 (2014) IF: 3.558

The Ar Rjum goldfield is an example of late Neoproterozoic Au mineralization that is hosted by submarine arc assemblage and syn-anorogenic intrusive rocks. Apart fromancient workings, recent exploration in the goldfield defined three main targets along 3 km N–S corridor (Um Na'am, Ghazal and Wasema), and indicated that Wasema alone hosts 11.8 Mt @ 2.5 g/t Au. The majority of gold and sulfide mineralization is confined to diorite, where gold content increases with shearing, pyrite-sericite–carbonate alteration and development stockworks of quartz–carbonate–pyrite veins and stringers. Generally, the concentration of gold increases in the diorite samples that experienced variable degrees of hydrothermal alterations near local shear zones. Anomalous gold content (up to 11.76 g/t) in some metachert is the result of the remobilization of volcanogenic latticebound (refractory) Au into free Au due to post-metamorphic hydrothermal alterations. The chemistry of pyrite from the mineralized veins and stringers indicates considerable amounts of gold that reaches ~0.3 wt.%.Chlorite that co-exists with pyrite in the hydrothermally altered metavolcanics is mostly sheridanite with up to 25 wt.% FeO^t and minor amounts of ripidolite. Chlorite geothermometry suggests that two temperature ranges affecting the area. The first temperature range (290–334°C) is consistentwith regional greenschist facies metamorphism, and the second (306–355°C) is interpreted to be related to recrystallization-submarine hydrothermal alteration related to the goldmineralization. Stable isotope ($\delta^{34}S$, $d^{18}O$and $\delta^{13}C$) data suggest an original volcanogenic arc signature that has been slightly modified by low-grade metamorphism, and finally by the late interaction of hydrothermal fluids. Ore evolutionmodel for the Ar Rjum goldfield includes seafloor sulfide alteration,several deformation episodes and intrusive effects, and in this context the ore resulted from the reduction of seawater sulfates. The gold-rich veins interpreted as orogenic lode deposits are confined to localized shear zones in a syn-orogenic diorite.

Keywords: Ar Rjum; Neoproterozoic arabian shield; Volcanogenic gold; Orogenic gold; S; C and O isotopes; Gold genesis.

23. The Influence of Microbial Mats on the Formation of Sand Volcanoes and Mounds in the Red Sea Coastal Plain, South Jeddah, Saudi Arabia

Rushdi J. Taj, Mahmoud A.M. Aref and B. Charlotte Schreiber

Sedimentary Geology, 311: 60-74 (2014) IF: 2.134

Extensive areas covered by microbial mats have been found in the upper intertidalflats and supratidal pools in the Red Sea coastal plain of south Jeddah, Saudi Arabia. Numerous microbially controlled sediment-surface morphologies are evident, such asflat cohesive mats that commonly pass into mats with wrinkles, reticulates, and tufts, together with erosion pockets and mat chips. These microbial mats form cohesive surface layers that lead to biostabilization of the sediment surface. Fluidization of the underlying sediments is due to tidal influences and pressurized gas escape from decay and photosynthesis of microbial mats and causes deformation and rupture of the cohesive surface mat layer via vertical and sub-vertical pipes. Extrusion offluidized sediments and water through these pipes leads to redeposition of sediment grains above the surface mat layer to form sand volcanoes and mounds. Most of the sand volcanoes present in the intertidalflats and supratidal pools show a symmetrical morphology, whereas in tidal channels asymmetrical forms are more common. Extrusion of underlying sediments through several adjacent vents leads to coalescence of sand volcanoes to form sand mounds. In this study sand volcanoes are also compared with other cone-like features from the Red Sea, such as gas domes and crab mounds. This comparison should help in differentiating similar cone-like features associated with microbial mats in the rock record.

Keywords: Microbial mats; Sand volcanoes and mounds; Intertidal flat; Supratidal pools; Red sea saudi arabia.

24. The Bi'r Tawilah Deposit, Central Western Saudi Arabia: Supergene Enrichment of a Pan-African Epithermal gold Mineralization

Adel A. Surour, Hesham M. Harbi and Ahmed H. Ahmed

Journal of African Earth Sciences, 89: 149-163 (2014) IF: 1.382

The Bi'r Tawilah gold deposit in central western Saudi Arabia represents a Pan-African example of gold mineralization in which both hypogene and supergene ores are recorded. The sulphidic gold ore is hosted in intermediate to felsic intrusions that occur along the N–S trending thrust-fault zone within the socalled ''Nabitah orogenic zone''. There are four rock units present (from oldest to youngest): serpentinites and related listwaenites, diorites, granitic rocks and porphyries. Hydrothermal alteration consists of chloritization, sericitization, carbonatization and silicification and affects all rock types. Chloritization of biotite results in abundant rutile, whereas sulphidization coincides with carbonatization.

The Bi'r Tawilahore is confined to NW-trending shears (Riedel fractures) related to N–S slip of the pre-existing Tawilah thrust due to activation within the Najd fault system. Samples from the boreholes show macro- and microscopic evidence of shearing such as micro-shear planes and strain shadows of pyrite. Sulphides and gold are present in most rock types. Paragenetically, the sulphides consist of abundant pyrite and relatively lesser amounts of arsenopyrite, in addition to very minor chalcopyrite, sphalerite and galena. In all boreholes, it was noticed that the abundance of arsenopyrite increases with depth.The elevated silver content of electrum (13–22 wt%) at Bi'r Tawilah is typical of gold deposits and low-sulphidation epithermal deposits.

The early mineralization stage took place in proximity to hydrothermally altered intermediate to felsic intrusions. The aerially restricted hydrothermal alteration by carbon-aqueous fluids led to ore remobilization in which gold amounts up to 4.3 g/t. Finally, gold enrichment (up to 5.4 g/t) resulted from supergene alteration that took place during weathering above the water table at a depth of 20–25 m.

Keywords: Bi'r tawilah prospect; Saudi arabia; Najd shearing; Epigenetic gold; Supergene gold.

25. Microbial and Physical Sedimentary Structures in Modern Evaporitic Coastal Environments of Saudi Arabia and Egypt

Mahmoud A. M. Aref, Mohammed H. Basyoni and Gerhard H. Bachmann

Facies, 60: 371-388 (2014) IF: 1.338

Field and petrographic studies of recent supratidal sabkhas and ponds, and a solar salt works, in Saudi Arabia and Egypt have documented the formation of distinctive surface sedimentary structures that have resulted from microbial activity and abiological physical processes. Microbially induced sedimentary structures (MISS) dominate the permanent and ephemeral parts of supratidal ponds of Al Zeeb sabkha, Saudi Arabia and halite crystallization ponds in salt works, west of Alexandria, Egypt. They are varied and include gas bubbles, blisters, wrinkles, pinnacles, cones, and polygonal folds (petees) induced by epibenthic microbial mats. Physically induced sedimentary structures dominate the emergent areas surrounding the ponds, as well as the supratidal sabkhas in Al Zeeb and Ras Shukeir areas. They include polygonal cracks and different types of tepees. The sediments of the microbial-induced structures are composed of green and brown microbial filaments that entrap and bind lenticular and clastic gypsum, or form nucleation sites for halite and/or grass-like gypsum crystals. The sediments of the physically induced structures are composed of halite-cemented siliciclastic sand and mud, or bottom-nucleated chevron and cornet halite crystals. The results of this study indicate that microbial and physical structures co-exist due to local factors, especially topography, brine recharge, salinity, microbial activity, and history of the supratidal sabkha and pond. The importance of the local interplay of these conditions indicates that it will be difficult to interpret sedimentary successions in fossil sabkhas and their general depositional environment if only limited sections are available for study.

Keywords: Supratidal sabkhas; Ponds; Salt works; Microbial structures; Tepee; Petee; MISS.

26. Local Impact of Dust Storms Around A Suburban Building in Arid and Semi-Arid Regions: Numerical Simulation Examples from Dubai and Riyadh, Arabian Peninsula

D. M. Doronzo, E. A. Khalaf, P. Dellino, M. D. de Tullio, F. Dioguardi, L. Gurioli, D. Mele, G. Pascazio and R. Sulpizio

Arabian Journal of Geosciences, 8(9): 1-28 (2014) IF: 1.152

Dust storms are common in arid and semi-arid regions, e.g., the Arabian Peninsula, where undisturbed wind can either weather the rocks and transport the grains for kilometers over the landscape or even overseas, or form dunes and ripples. We used a multiphase Eulerian–Lagrangian computational fluid dynamics model to investigate the impact of dust storms in the form of density current on a 10?×?10-m building. This numerical investigation particularly applies to the suburbs of metropolis, consisting of peripheral neighborhoods of meter-scale buildings that, as suggested by our results, can strongly affect the path of the storm before impacting the Downtown. Our results of flow-building interaction on pulsating (CASE 1) versus sustained (CASE 2, reference) and long-lived (CASE 3) storm show a strong amplification of flow dynamic pressure up to a factor of about 14 in streamwise direction and a heavy grain accumulation of about 800 kg around the building. With respect to reference sustained storm, the results show a more intense pressure amplification up to about 12 for slower (CASE 4) or coarser (CASE 5) storm, but a less intense amplification up to about 3 for more dilute storm (CASE 6) in transverse direction. Maximum grain accumulation around the building is of about 4,300 kg (55 % is on building front) for coarser storm, whereas high fog in the building rear occurs for more dilute storm. These results can be useful when assessing the impact of dust storms against buildings.

Keywords: Dust storms; Arid and semi-arid regions; Grain suspension; Grain dispersal; Arabian Peninsula; Building impact; Pyroclastic density currents.

Dept. of Geophysics

27. An Efficient Regularized Inversion Approach for Self-Potential Data Interpretation of Ore Exploration Using A Mix of Logarithmic and Non - Logarithmic Model Parameters

Salah A. Mehanee

Ore Geology Reviews, 57: 87-115 (2014) IF: 3.558

A very fast and efficient approach to self-potential (SP) data inversion for ore exploration has been developed. This approach is based on Tikhonov regularization and the conjugate gradient method, and simultaneously inverts for the depth (z), electric dipole moment (k), and angle of polarization (θ) of a buried anomalous body from SP data measured along a profile. This inversion algorithm works iteratively, and solves for z and k in the logarithmic-space (log(z) and log(k)), and solves for θ in the linear-space (non-logarithmic). It is found that the original inversion formulation that uses the model parameters themselves (z, k and θ) is unstable and divergent. It is also found that the inversion formulation that uses the logarithm of the model parameters (log(z), log(k) and log(θ)) is unstable and divergent. Rather, the new inversion scheme that is based on the aforementioned mixed log-linear combination of the model parameters (log(z), log(k), and θ) overcomes and eliminates the mentioned instability and divergence problems.

The sensitivity analysis and numerical experiments investigated have indicated that the new approach has a far better and far more optimized minimization search direction. This proposed technique fits the observed data by some geometrically simple body in the restricted class of vertical cylinder, horizontal cylinder, and spheremodels. The applicability of the algorithmhas been demonstrated on various reliable synthetic data sets with and without noise. The algorithm has been carefully and successfully applied to six real data examples, with ore bodies buried in different complex geologic settings and at various depths in the subsurface. The method is shown to be highly applicable for mineral exploration, and is of particular value in cases where the SP observed data is due to ore body embedded in the subsurface. On average, it took about 40 s of computation (not CPU) time on a 1 GHz PC.

Keywords: Mineral exploration; Self-potential data inversion; Regularized inversion; Mixed log;space; linear-space inversion; Conjugate gradient.

28. Accurate and Efficient Regularized Inversion Approach for the Interpretation of Isolated Gravity Anomalies

Salah Abdelraheem Mehanee

Pure and Applied Geophysics, 171: 1897-1937 (2014) IF: 1.854

A very fast and efficient approach for gravity data inversion based on the regularized conjugate gradient method has been developed. This approach simultaneously inverts for the depth (z), and the amplitude coefficient (A) of a buried anomalous body from the gravity data measured along a profile. The developed algorithm fits the observed data by a class of some geometrically simple anomalous bodies, including the semi-infinite vertical cylinder, infinitely long horizontal cylinder, and sphere models using the logarithms of the model parameters [log(z) and log(|A|)] rather than the parameters themselves in its iterative minimization scheme. The presented numerical experiments have shown that the original (non-logarithmed) minimization scheme, which uses the parameters themselves (z and |A|) instead of their logarithms, encountered a variety of convergence problems. The aforementioned transformation of the objective functional subjected to minimization into the space of logarithms of z and |A| overcomes these convergence problems. The reliability and the applicability of the developed algorithm have been demonstrated on several synthetic data sets with and without noise. It is then successfully and carefully applied to seven real data examples with bodies buried in different complex geologic settings and at various depths inside the earth. The method is shown to be highly applicable for mineral exploration, and for both shallow and deep earth imaging, and is of particular value in cases where the observed gravity data is due to an isolated body embedded in the subsurface.

Keywords: Gravity; data inversion; Regularized inversion; logarithmed; Space inversion; Non-logarithmed; Space inversion; Mineral exploration; Salt dome structure; Humble dome; Louisiana dome; Leona anomaly; Camaguey Province gravity anomaly.

Dept. of Mathematics

29. Waves in Deep Water Based on the Nonlinear SchrDinger Equation with Variable Coefficients

Hamdy Ibrahim Abdel-Gawad

Canadian Journal of Physics, 92: 1158-1165 (2014) IF: 0.928

It has been shown that progression of waves in deep water is described by the nonlinear Schrdinger equation with time-dependent diffraction and nonlinearity coefficients. Investigation of the solutions is done here in the two cases when the coefficients are proportional or otherwise. In the first case, it is shown that the water waves are traveling at time-dependent speed and are periodic waves, which are coupled to solitons or elliptic waves seen in the noninertial frames. In the inertial frames wave modulation instability is visualized. In the second case, and when the diffraction coefficient dominates the nonlinearity, water waves collapse with unbounded amplitude at finite time. Exact solutions are found here by using the extended unified method together, while presenting a new algorithm for treating nonlinear coupled partial differential equations.

30. The Chebyshev Collection Method for Solving Fractional Order Klein-Gordon Equation

M. M. Khader, N. H. Swelam and A. M. S. Mahdy

Wseas Transactions on Mathematics, 13: 31-38 (2014)

In this paper, we are implemented the Chebyshev spectral method for solving the non-linear fractional Klein-Gordon equation (FKGE). The fractional derivative is considered in the Caputo sense. We presented an approximate formula of the fractional derivative. The properties of the Chebyshev polynomials are used to reduce FKGE to the solution of system of ordinary differential equations which solved by using the finite difference method. Special attention is given to study the convergence analysis and estimate an upper bound of the error of the derived formula. The numerical results of applying this method to FKGE show the simplicity and the efficiency of the proposed method.

Keywords: Fractional klein-gordon equation; Caputo derivative; Chebyshev spectral method; Convergence analysis.

31. Weighted Average Finite Difference Methods for Fractional Reaction-Subdiffusion Equation

Nasser Hassen Sweilam, Mohamed Meabed Khader and Mohamed Adel

Walailak J Sci & Tech, 11: 361-377 (2014)

In this article, a numerical study for fractional reaction-subdiffusion equations is introduced using a class of finite difference methods. These methods are extensions of the weighted average methods for ordinary (non-fractional) reaction-subdiffusion equations. A stability analysis of the proposed methods is given by a recently proposed procedure similar to the standard John von Neumann stability analysis. Simple and accurate stability criterion valid for different discretization schemes of the fractional derivative, arbitrary weight factor, and arbitrary order of the fractional derivative, are given and checkednumerically. Numerical test examples, figures, and comparisons have been presented for clarity.

Keywords: Weighted average; finite difference approximations; fractional reaction;Subdiffusion quation; Stability analysis.

Dept. of Physics

32. Event Activity Dependence of ϒ(Ns) Production in $\sqrt{8NN}$ = 5.02 Tev Ppb and $\sqrt{s}$ = 2.76 Tev pp Collisions

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, (2014) IF: 6.22

The production of ϒ(1S), ϒ(2S), and ϒ(3S) is investigated in pPb and pp collisions at centre-of-mass energies per nucleon pair of 5.02 TeV and 2.76 TeV, respectively. The datasets correspond to integrated luminosities of about 31 nb-1 (pPb) and 5.4 pb-1 (pp), collected in 2013 by the CMS experiment at the LHC. Upsilons that decay into muons are reconstructed within the rapidity interval |y CM| < 1.93 in the nucleon-nucleon centre-of-mass frame. Their production is studied as a function of two measures of event activity, namely the charged-particle multiplicity measured in the pseudorapidity interval |η| < 2.4, and the sum of

transverse energy deposited at forward pseudorapidity, $4.0 < |\eta| < 5.2$. The Υ cross sections normalized by their event activity integrated values, $\Upsilon(nS)/\langle\Upsilon(nS)\rangle$, are found to rise with both measures of the event activity in pp and pPb. In both collision systems, the ratios of the excited to the ground state cross sections, $\Upsilon(nS)/\Upsilon(1S)$, are found to decrease with the charged-particle multiplicity, while as a function of the transverse energy the variation is less pronounced. The event activity integrated double ratios, $[\Upsilon(nS)/\Upsilon(1S)]pPb / [\Upsilon(nS)/\Upsilon(1S)]pp$, are also measured and found to be 0.83 ± 0.05 (stat.) ± 0.05 (syst.) and 0.71 ± 0.08 (stat.) ± 0.09 (syst.) for $\Upsilon(2S)$ and $\Upsilon(3S)$, respectively.
Keywords: Quarkonium Heavy Ions Heavy-ion collision.

33. Identification Techniques for Highly Boosted W Bosons That Decay Into Hadrons

Ali Yehia Ellithi Kamel

Journal of High Energy Physics ,17,12 (2014) IF: 6.22

In searches for new physics in the energy regime of the LHC, it is becoming increasingly important to distinguish single-jet objects that originate from the merging of the decay products of W bosons produced with high transverse momenta from jets initiated by single partons. Algorithms are defined to identify such W jets for different signals of interest, using techniques that are also applicable to other decays of bosons to hadrons that result in a single jet, such as those from highly boosted Z and Higgs bosons. The efficiency for tagging W jets is measured in data collected with the CMS detector at a center-of-mass energy of 8 TeV, corresponding to an integrated luminosity of 19.7 fb-1. The performance of W tagging in data is compared with predictions from several Monte Carlo simulators.
Keywords: Jets Jet physics Hadron-Hadron Scattering.

34. Measurement of Associated W + Charm Production in pp Collisions at $\sqrt{s}$ = 7 TeV

Ellithi Kamel, A.; Mahmoud, M. A.; Radi, A.; Kadastik, M.; Müntel, M.; Murumaa, M.; Raidal, M.; Rebane, L.; Tiko, A.; and Eerola, P.

Journal of High Energy Physics, 13, 2: (2014) IF: 6.22

Measurements are presented of the associated production of a W boson and a charm-quark jet (W + c) in pp collisions at a center-of-mass energy of 7 TeV. The analysis is conducted with a data sample corresponding to a total integrated luminosity of 5 fb-1, collected by the CMS detector at the LHC. W boson candidates are identified by their decay into a charged lepton (muon or electron) and a neutrino. The W + c measurements are performed for charm-quark jets in the kinematic region $p_T^{jet} > 25$ GeV, $|\eta^{Jet}| < 2.5$, for two different thresholds for the transverse momentum of the lepton from the W-boson decay, and in the pseudorapidity range $|\eta^{\ell}| < 2.1$. Hadronic and inclusive semileptonic decays of charm hadrons are used to measure the following total cross sections: σ (pp→W + c + X) × B(W→ $\ell\nu$) = 107.7 ± 3.3 (stat.) ± 6.9 (syst.) pb ($p\ell_T > 25$ GeV) and σ (pp→W + c + X)×B(W→$\ell\nu$) = 84.1 ± 2.0 (stat.) ± 4.9 (syst.) pb ($p\ell_T > 35$ GeV), and the cross section ratios s(pp $W^+ + \bar{c}$ + X)/s(pp→W^- + c + X) = 0.954 ± 0.025 (stat.) ± 0.004 (syst.) ($p\ell_T > 25$ GeV) and σ (pp→$W^+ + \bar{c}$ X) /σ(pp → W^- + c + X) = 0.938 ± 0.019 (stat.) ± 0.006 (syst.) ($p\ell_T >$ 35GeV). Cross sections and cross section ratios are also measured differentially with respect to the absolute value of the pseudorapidity of the lepton from the W-boson decay. These are the first measurements from the LHC directly sensitive to the strange quark and antiquark content of the proton. Results are compared with theoretical predictions and are consistent with the predictions based on global fits of parton distribution functions.
Keywords: Hadron;Hadron Scattering.

35. Measurement of Prompt J/ ψ Pair Production in Pp Collisions at $\sqrt{s}$ = 7 Tev

Ali Yehia Ellithi Kamel

Journal of High Energy Physics , 94(9),(2014) IF: 6.22

Production of prompt J /ψ meson pairs in proton-proton collisions at $\sqrt{s}$ = 7 TeV is measured with the CMS experiment at the LHC in a data sample corresponding to an integrated luminosity of about 4.7 fb^{-1}. The two J / ψ mesons are fully reconstructed via their decays into $\mu + \mu^-$ pairs. This observation provides for the first time access to the high-transverse-momentum region of J/ ψ pair production where model predictions are not yet established. The total and differential cross sections are measured in a phase space defined by the individual J/ ψ transverse momentum ($p_T^{J/\psi}$) and rapidity ($|y^{J/\psi}|$): $|y^{J/\psi}| < 1.2$ for $p_T^{J/\psi} > 6.5$ GeV/c; $1.2 < |y^{J/\psi}| < 1.43$ for a p_T threshold that scales linearly with |y J/ ψ | from 6.5 to 4.5 GeV/c; and $1.43 < |y^{J/\psi}| < 2.2$ for $p_T^{J/\psi} > 4.5$ GeV/c. The total cross section, assuming unpolarized prompt J/ψ pair production is 1.49 ± 0.07 (stat) ±0.13 (syst) nb. Different assumptions about the J/ ψ polarization imply modifications to the cross section ranging from -31% to +27%.
Keywords: Hadron-Hadron Scattering B physics.

36. Measurement of the Production Cross Sections For a Z Boson and One or More B Jets in pp Collisions at $\sqrt{s}$ = 7 TeV

Ali Yehia Ellithi Kamel

Journal of High Energy Physics,120, 6: 120-150 (2014) IF: 6.22

The production of a Z boson, decaying into two leptons and produced in association with one or more b jets, is studied using proton-proton collisions delivered by the LHC at a centre-of-mass energy of 7 TeV. The data were recorded in 2011 with the CMS detector and correspond to an integrated luminosity of 5 fb^{-1}. The Z($\ell\ell$) + b-jets cross sections (where $\ell\ell$ = μμ or ee) are measured separately for a Z boson produced with exactly one b jet and with at least two b jets. In addition, a cross section ratio is extracted for a Z boson produced with at least one b jet, relative to a Z boson produced with at least one jet. The measured cross sections are compared to various theoretical predictions, and the data favour the predictions in the five-flavour scheme, where b quarks are assumed massless. The kinematic properties of the reconstructed particles are compared with the predictions from the MadGraph event generator using the pythia parton shower simulation.
Keywords: Jet physics Hadron;Hadron Scattering.

37. Measurement of the t-channel Single-Top-Quark Production Cross Section and of the $|V_{tb}|$ CKM Matrix Element in pp Collisions at $\sqrt{s}$ = 8 TeV

Ali Yehia Ellithi Kamel

Journal of High Energy Physics,90, 6 (2014) IF: 6.22

Measurements are presented of the t-channel single-top-quark production cross section in proton-proton collisions at $\sqrt{S}$ = 8 TeV. The results are based on a data sample corresponding to an integrated luminosity of 19.7 fb^{-1} recorded with the CMS detector at the LHC. The cross section is measured inclusively, as well as separately for top (t) and antitop ($\bar{t}$), in final states with a muon or an electron. The measured inclusive t-channel cross section is $\sigma_{t\text{-}ch.}$ = 83.6 ± 2.3 (stat.) ± 7.4 (syst.) pb. The single t and $\bar{t}$ cross sections are measured to be $\sigma_{t\text{-}ch.}$ (t) = 53.8 ± 1.5 (stat.) ± 4.4 (syst.) pb and $\sigma_{t\text{-}ch.}$ ($\bar{t}$) = 27.6 ± 1.3 (stat.) ± 3.7 (syst.) pb, respectively. The measured ratio of cross sections is $R_{t\text{-}ch.} = \sigma_{t\text{-}ch.}(t)/\sigma_{t\text{-}ch.}(\bar{t})$ = 1.95 ± 0.10 (stat.) ± 0.19 (syst.), in agreement with the standard model prediction. The modulus of the Cabibbo-Kobayashi-Maskawa matrix element V tb is extracted and, in combination with a previous CMS result at $\sqrt{s}$ = 7 TeV, a value $|V_{tb}|$ = 0.998 ± 0.038 (exp.) ± 0.016 (theo.) is obtained.
Keywords: Hadron; Hadron Scattering Top physics.

38. Search for Neutral Mssm Higgs Bosons Decaying to a Pair of Tau Leptons in pp Collisions

Ali Yehia Ellithi Kamel

Journal of High Energy Physics ,160(10), (2014) IF: 6.22

A search for neutral Higgs bosons in the minimal supersymmetric extension of the standard model (MSSM) decaying to tau-lepton pairs in pp collisions is performed, using events recorded by the CMS experiment at the LHC. The dataset corresponds to an integrated luminosity of 24.6 fb^{-1}, with 4.9 fb^{-1} at 7 TeV and 19.7 fb^{-1} at 8 TeV. To enhance the sensitivity to neutral MSSM Higgs bosons, the search includes the case where the Higgs boson is produced in association with a b-quark jet. No excess is observed in the tau-lepton-pair invariant mass spectrum. Exclusion limits are presented in the MSSM parameter space for different benchmark scenarios, m_h^{max} , m_h^{mod+}, m_h^{mod-} , light-stop, light-stau, t-phobic, and low-m_H. Upper limits on the cross section times branching fraction for gluon fusion and b-quark associated Higgs boson production are also given.
Keywords: Supersymmetry Hadron; Hadron Scattering Higgs. physics.

39. Search for New Physics in Events with Same-Sign Dileptons and Jets in pp Collisions at $\sqrt{s}$ = 8 Tev

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 163-200 (2014) IF:6.22

A search for new physics is performed based on events with jets and a pair of isolated, same-sign leptons. The results are obtained using a sample of proton-proton collision data collected by the CMS experiment at a centre-of-mass energy of 8 TeV at the LHC, corresponding to an integrated luminosity of 19.5 fb^{-1}. In order to be sensitive to a wide variety of possible signals beyond the standard model, multiple search regions defined by the missing transverse energy, the hadronic energy, the number of jets and b-quark jets, and the transverse momenta of the leptons in the events are considered. No excess above the standard model background expectation is observed and constraints are set on a number of models for new physics, as well as on the same-sign top-quark pair and quadruple-top-quark production cross sections. Information on event selection efficiencies is also provided, so that the results can be used to confront an even broader class of new physics models.
Keywords: Supersymmetry; Hadron-Hadron; Scattering.

40. Search for Pair Production of Excited Top Quarks in the Lepton+Jets Final State

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 125, 6 (2014) IF: 6.22

A search is performed for pair-produced spin-3/2 excited top quarks ($t^*\bar{t}^*$), each decaying to a top quark and a gluon. The search uses data collected with the CMS detector from pp collisions at a center-of-mass energy of $\sqrt{S}$ = 8 TeV, selecting events that have a single isolated muon or electron, an imbalance in transverse momentum, and at least six jets, of which one must be compatible with originating from the fragmentation of a b quark. The data, corresponding to an integrated luminosity of 19.5 fb^{-1}, show no significant excess over standard model predictions, and provide a lower limit of 803 GeV at 95% confidence on the mass of the spin-3/2 t* quark in an extension of the Randall-Sundrum model, assuming a 100% branching fraction of its decay into a top quark and a gluon. This is the first search for a spin-3/2 excited top quark performed at the LHC.
Keywords: Hadron;Hadron Scattering Top physics.

41. Search for Standard Model Production of four Top Quarks in The Lepton + Jets Channel in pp Collisions at $\sqrt{s}$ =8 Tev

Ali Yehia Ellithi Kamel

Journal of High Energy Physics ,154, 11 (2014) IF: 6.22

A search is presented for standard model (SM) production of four top quarks ($\overline{tttt}$) in pp collisions in the lepton + jets channel. The data correspond to an integrated luminosity of 19.6 fb^{-1} recorded at a centre-of-mass energy of 8 TeV with the CMS detector at the CERN LHC. The expected cross section for SM $\overline{tttt}$ production is $\sigma_{\overline{tttt}}^{SM} \approx$1fb. A combination of kinematic reconstruction and multivariate techniques is used to distinguish between the small signal and large background. The data are consistent with expectations of the SM, and an upper limit of 32 fb is set at a 95% confidence level on the cross section for producing four top quarks in the SM, where a limit of 32 ± 17 fb is expected.
Keywords: Hadron;Hadron Scattering Top physics.

42. Search for the Associated Production of the Higgs Boson with A Top-Quark Pair

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 87, 9, (2014) IF: 6.22

A search for the standard model Higgs boson produced in association with a top-quark pair ($t\bar{t}$H) is presented, using data

samples corresponding to integrated luminosities of up to 5.1 fb^{-1} and 19.7 fb^{-1} collected in pp collisions at center-of-mass energies of 7 TeV and 8 TeV respectively. The search is based on the following signatures of the Higgs boson decay: H→ hadrons, H→photons, and H→ leptons. The results are characterized by an observed $t\bar{t}H$ signal strength relative to the standard model cross section, $\mu = \sigma/\sigma_{SM}$, under the assumption that the Higgs boson decays as expected in the standard model. The best fit value is $\mu = 2.8 \pm 1.0$ for a Higgs boson mass of 125.6 GeV.
Keywords: Hadron; Hadron Scattering Higgs physics Top physics.

43. Search for W'→ tb Decays in the Lepton + Jets Final State in Pp Collisions at $\sqrt{s}$ = 8 TeV

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 108, 5 (2014) IF: 6.22

Results are presented from a search for the production of a heavy gauge boson W' decaying into a top and a bottom quark, using a data set collected by the CMS experiment at $\sqrt{s}$ = 8 TeV and corresponding to an integrated luminosity of 19.5 fb^{-1}. Various models of W'- boson production are studied by allowing for an arbitrary combination of left- and right-handed couplings. The analysis is based on the detection of events with a lepton (e, μ), jets, and missing transverse energy in the final state. No evidence for W'-boson production is found and 95% confidence level upper limits on the production cross section times branching fraction are obtained. For W' bosons with purely right-handed couplings, and for those with left-handed couplings assuming no interference effects, the observed 95% confidence level limit is M(W') > 2.05 TeV. For W' bosons with purely left-handed couplings, including interference effects, the observed 95% confidence level limit is M(W') > 1.84 TeV. The results presented in this paper are the most stringent limits published to date.
Keywords: Exotics; Hadron-Hadron Scattering.

44. Study of Double Parton Scattering Using W + 2-Jet Events in Proton-Proton Collisions at $\sqrt{s}$ = 7 Tev

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 32, 3(2014) IF: 6.22

Double parton scattering is investigated in proton-proton collisions at $\sqrt{s}$ = 7 TeV where the final state includes a W boson, which decays into a muon and a neutrino, and two jets. The data sample corresponds to an integrated luminosity of 5 fb^{-1}, collected with the CMS detector at the LHC. Observables sensitive to double parton scattering are investigated after being corrected for detector effects and selection efficiencies. The fraction of W + 2-jet events due to double parton scattering is measured to be 0.055 ± 0.002 (stat.) ± 0.014 (syst.). The effective cross section, s eff, characterizing the effective transverse area of hard partonic interactions in collisions between protons is measured to be 20.7 ± 0.8 (stat.) ± 6.6 (syst.) mb.
Keywords: Jet physics Hadron-Hadron Scattering QCD.

45. Study of Hadronic Event-Shape Variables in Multijet Final States in pp Collisions at $\sqrt{s}$ =7 Tev

Ali Yehia Ellithi Kamel

Journal of High Energy Physics , 87, 10 (2014) IF: 6.22

Event-shape variables, which are sensitive to perturbative and nonperturbative aspects of quantum chromodynamic (QCD) interactions, are studied in multijet events recorded in proton-proton collisions at $\sqrt{s}$ =7 TeV. Events are selected with at least one jet with transverse momentum p_T > 110 GeV and pseudorapidity $|\eta| < 2.4$, in a data sample corresponding to integrated luminosities of up to 5 fb-1. The distributions of five event-shape variables in various leading jet p_T ranges are compared to predictions from different QCD Monte Carlo event generators.
Keywords: Jets Hadron; Hadron Scattering Global features.

46. Measurement of Higgs Boson Production and Properties in the WW Decay Channel with Leptonic Final States

Ali Yehia Ellithi Kamel

Journal of High Energy Physics , 1: 96-120 (2014) IF: 6.111

A search for the standard model Higgs boson decaying to a W-boson pair at the LHC is reported. The event sample corresponds to an integrated luminosity of 4.9 fb^{-1} and 19.4 fb^{-1} collected with the CMS detector in pp collisions at $\sqrt{8}$ = 7 and 8 TeV, respectively. The Higgs boson candidates are selected in events with two or three charged leptons. An excess of events above background is observed, consistent with the expectation from the standard model Higgs boson with a mass of around 125 GeV. The probability to observe an excess equal or larger than the one seen, under the background-only hypothesis, corresponds to a significance of 4.3 standard deviations for m H = 125.6 GeV. The observed signal cross section times the branching fraction to WW for m H = 125.6 GeV is $072^{+0.20}_{-0.18}$times the standard model expectation. The spin-parity $J^P = 0^+$ hypothesis is favored against a narrow resonance with $J^P = 2^+$ or $J^P = 0^-$ that decays to a W-boson pair. This result provides strong evidence for a Higgs-like boson decaying to a W-boson pair.
Keywords: Hadron-Hadron Scattering; Higgs physics.

47. Evidence for the 125 Gev Higgs Boson Decaying to A Pair of τ Leptons

Ali Yehia Ellithi Kamel

Journal of High Energy Physics, 5 (2014) IF: 6.11

A search for a standard model Higgs boson decaying into a pair of t leptons is performed using events recorded by the CMS experiment at the LHC in 2011 and 2012. The dataset corresponds to an integrated luminosity of 4.9 fb-1 at a centre-of-mass energy of 7 TeV and 19.7 fb^{-1} at 8 TeV. Each τ lepton decays hadronically or leptonically to an electron or a muon, leading to six different final states for the $\tau-$ lepton pair, all considered in this analysis. An excess of events is observed over the expected background contributions, with a local significance larger than 3 standard deviations for m H values between 115 and 130 GeV. The best fit of the observed H → ττ signal cross section

times branching fraction for m H = 125 GeV is 0.78 ± 0.27 times the standard model expectation. These observations constitute evidence for the 125 GeV Higgs boson decaying to a pair of τ leptons.
Keywords: Hadron-Hadron Scattering Higgs physics.

48. Determination of the Top-quark Pole Mass and Strong Coupling Constant from the View the Mathml Sourcett¯ Production Cross Section in Pp Collisions at View $\sqrt{s}$ = 7 TeV

Ali Yehia Ellithi Kamel

Physics Letters B , 728, (20): 496–517 IF: 6.019

The inclusive cross section for top-quark pair production measured by the CMS experiment in proton–proton collisions at a center-of-mass energy of 7 TeV is compared to the QCD prediction at next-to-next-to-leading order with various parton distribution functions to determine the top-quark pole mass, $m\tau^{\text{olet}}$, or the strong coupling constant, α_S. With the parton distribution function set NNPDF2.3, a pole mass of View the MathML source176.7$\frac{+3.8}{-3.4}$ GeV is obtained when constraining aS at the scale of the Z boson mass, m_Z, to the current world average. Alternatively, by constraining $m\tau^{\text{olet}}$ the to the latest average from direct mass measurements , a value of as (m_Z) = 0.1151$\frac{+.0.0033.}{-0.0032}$is extracted. This is the first determination of as using events from top-quark production.
Keywords: CMS; Physics; Top; Quark; Pair; Cross section; Mass; QCD; Strong; Coupling; Constant.

49. Inclusive Search for A Vector-Like T Quark with Charge View the Mathml Source$\frac{2}{3}$ in pp Collisions at $\sqrt{s}$ = 7 TeV

Ali Yehia Ellithi Kamel

Physics Letters B, 729(5) (2014) IF: 6.019

A search is performed for a massive new vector-like quark T, with charge $\frac{2}{3}$, that is pair produced together with its antiparticle in proton–proton collisions. The data were collected by the CMS experiment at the Large Hadron Collider in 2012 at $\sqrt{s}$ = 8 TeV and correspond to an integrated luminosity of 19.5 fb^{-1}. The T quark is assumed to decay into three different final states, bW, tZ, and tH. The search is carried out using events with at least one isolated lepton. No deviations from standard model expectations are observed, and lower limits are set on the T quark mass at 95% confidence level. The lower limit lies between 687 and 782 GeV for all possible values of the branching fractions into the three different final states assuming strong production. These limits are the most stringent constraints to date on the existence of such a quark.
Keywords: CMS; Physics.

50. Modification of Jet Shapes in Pbpb Collisions at $\sqrt{SNN}$2.76 TeV

Ali Yehia Ellithi Kamel

Physics Letters B 730(7): (2014) IF: 6.019

The first measurement of jet shapes, defined as the fractional transverse momentum radial distribution, for inclusive jets produced in heavy-ion collisions is presented. Data samples of PbPb and pp collisions, corresponding to integrated luminosities of 150 μb^{-1} and 5.3 pb^{-1} respectively, were collected at a nucleon–nucleon centre-of-mass energy of $\sqrt{\text{SNN}}$2=2.76 TeV with the CMS detector at the LHC. The jets are reconstructed with the anti-k_T algorithm with a distance parameter R=0.3, and the jet shapes are measured for charged particles with transverse momentum p_T>1 GeV/c The jet shapes measured in PbPb collisions in different collision centralities are compared to reference distributions based on the pp data. A centrality-dependent modification of the jet shapes is observed in the more central PbPb collisions, indicating a redistribution of the energy inside the jet cone. This measurement provides information about the parton shower mechanism in the hot and dense medium produced in heavy-ion collisions.
Keywords: CMS; Heavy ion physics; Jet shapes

51. Search for Baryon Number Violation in Top-Quark Decays

Ali Yehia Ellithi Kamel

Physics Letters B 731(4) ,IF: 6.019

A search for baryon number violation (BNV) in top-quark decays is performed using pp collisions produced by the LHC at $\sqrt{s}$ = 8 TeV. The top-quark decay considered in this search results in one light lepton (muon or electron), two jets, but no neutrino in the final state. Data used for the analysis were collected by the CMS detector and correspond to an integrated luminosity of 19.5 fb-1. The event selection is optimized for top quarks produced in pairs, with one undergoing the BNV decay and the other the standard model hadronic decay to three jets. No significant excess of events over the expected yield from standard model processes is observed. The upper limits at 95% confidence level on the branching fraction of the BNV top-quark decay are calculated to be 0.0016 and 0.0017 for the muon and the electron channels, respectively. Assuming lepton universality, an upper limit of 0.0015 results from the combination of the two channels. These limits are the first that have been obtained on a BNV process involving the top quark.
Keywords: LHC; CMS; Top quark; Baryon number.

52. Searches for Light- and Heavy-Flavour Three-Jet Resonances in Pp Collisions at $\sqrt{s}$ = 8 TeV

Ali Yehia Ellithi Kamel

Physics Letters B 730(7)(2014) IF: 6.019

A search for three-jet hadronic resonance production in pp collisions at a centre-of-mass energy of 8 TeV has been conducted by the CMS Collaboration at the LHC with a data sample corresponding to an integrated luminosity of 19.4 fb^{-1}. The search method is model independent, and events are selected that have high jet multiplicity and large values of jet transverse momenta. The signal models explored assume R -parity-violating supersymmetric gluino pair production and have final states with either only light-flavour jets or both light- and heavy-flavour jets. No significant deviation is found between the selected events and the expected standard model multijet and View the MathML

sourcett¯ background. For a gluino decaying into light-flavour jets, a lower limit of 650 GeV on the gluino mass is set at a 95% confidence level, and for a gluino decaying into one heavy- and two light-flavour jets, gluino masses between 200 and 835 GeV are, for the first time, likewise excluded.
Keywords: CMS; Physics; Software; Computing.

53. Scaling Laws for Total Reaction Cross Sections

M. Saleh Yousef, M. Almarashi and B. Abu-Ibrahim

Physical Review C, 90: 024608-1-024608-8 (2014) IF: 3.881

We analyze the neutron-nucleus total reaction cross sections for all the available experimental data, in the energy range from about 10 MeV to 400 GeV. We obtain simple scaling laws proved to be valid over all the energy ranges studied and for stable nuclei of the whole mass number region. Moreover, the proton-nucleus and nucleus-nucleus total reaction cross sections are studied for all the available experimental data in the energy range from 1 GeV to 400 GeV and from 1A GeV to 20A GeV, respectively. We show that the scaling laws found for proton(nucleus)-nucleus total reaction cross sections, for energies less than 1 GeV, in our previous works [B. Abu-Ibrahim and A. Kohama, Phys. Rev. C 81, 057601 (2010); B. Abu-Ibrahim, ibid. 83, 044615 (2011)], are still valid in this energy region. The uncertainty of the prediction of the scaling laws is about 10%. Our ndings, which are onsistent with previously obtained results, are useful to predict total reaction cross sections for reactions involving nuclei with mass numbers larger than 8, and over a large energy scale.
Keywords: Cross section; Proton; Neutron.

54. Spectral Transition for Random Quantum Walks on Trees

Eman Hamza and Alain Joye

Communications in Mathematical Physics, 326: 415-439 (2014) IF: 1.901

We define and analyze random quantum walks on homogeneous trees of degree q ≥ 3. Such walks describe the discrete time evolution of a quantum particle with internal degree of freedom in C*q* hopping on the neighboring sites of the tree in the presence of static disorder. The one time step random unitary evolution operator of the particle depends on a unitary matrix C ∈ U(*q*) which monitors the strength of the disorder. We prove for any q that there exist open sets of matrices in U (q) for which the random evolution has either pure point spectrum almost surely or purely absolutely continuous spectrum, thereby showing the existence of a spectral transition driven by C ∈ U (q). For q ∈ {3, 4}, we establish properties of the spectral diagram which provide a description of the spectral transition.
Keywords: Quantum Walk; Trees.

55. Electrical Properties and Initial Permeability of Cu-mg Ferrites

E. Ateia, M.A. Ahmed and R.M. Ghouniem

Solid *State Sciences, 31: 1-8 (2014) IF: 1.679*

A series of polycrystalline spinel ferrites with composition Cu1xMgxFe2O4where 0.0 x 1 are pre- pared by the standard ceramic method. The single-phase cubic spinel structure of all the samples has been confirmed from X-ray diffraction analysis. The lattice constant increases linearly with increasing magnesium content obeying Vegard's law. The electrical properties (30, and s) of the prepared samples are measured at different temperatures as a function of applied frequency ranging from 100 kHz up to 5 MHz. The general trend of 30, and s is decreased with increasing Mg2and increases with increasing temperature. The observed variation of dielectric properties is explained on the basis of Cu2/Cu1ionic concentration as well as the electronic hopping frequency between Fe2and Fe3ions in the present samples. The data of initial permeability is also discussed.
Keywords: X-ray diffraction Electrical properties Initial permeability Thermoelectric power.

56. Energy Levels, Oscillator Strengths, and Radiative Rates for Si-Like Zn XVII, Ga XVIII, Ge XIX, and as XX

Ahmed A. El-Maaref, S. H. Allam and Th. M. El-Sherbini

Atomic Data and Nuclear Data Tables, 100: 155-182 (2014) IF: 1.46

The energy levels, oscillator strengths, line strengths, and transition probabilities for transitions among the terms belonging to the 3s23p2, 3s3p3, 3s23p3d, 3s23p4s, 3s23p4p and 3s23p4d configurations of silicon-like ions (Zn XVII, Ga XVIII, Ge XIX, and As XX) have been calculated using the configuration-interaction code CIV3. The calculations have been carried out in the intermediate coupling scheme using the Breit–Pauli Hamiltonian. The present calculations have been compared with the available experimental data and other theoretical calculations. Most of our calculations of energy levels and oscillator strengths (in length form) show good agreement with both experimental and theoretical data. Lifetimes of the excited levels have also been calculated. Energy levels, oscillator strengths, and radiative
Keywords: The energy levels; Oscillator strengths; line strengths.

57. Fine-Structure Calculations of Energy Levels, Oscillator Strengths, and transition probabilities for sulfur-like iron, Fe XI

A. Abou El-Maaref, Mahmoud Ahmad and S.H. Allam

Atomic Data and Nuclear Data Tables, 100: 781-791 (2014) IF: 1.46

Energy levels, oscillator strengths, and transition probabilities for transitions among the 14 LS states belonging to configurations of sulfur-like iron, Fe XI, have been calculated. These states are represented by configuration interaction wavefunctions and have configurations 3s23p4, 3s3p5, 3s23p33d, 3s23p34s, 3s23p34p, and 3s23p34d, which give rise to 123 fine-structure energy levels. Extensive configuration interaction calculations using the CIV3 code have been performed. To assess the importance of relativistic effects, the intermediate coupling scheme by means of the Breit–Pauli Hamiltonian terms, such as the one-body mass correction and Darwin term, and spin–orbit, spin–other-orbit, and spin–spin corrections, are incorporated within the code.
These incorporations adjusted the energy levels, therefore the calculated values are close to the available experimental data. Comparisons between the present calculated energy levels as well as oscillator strengths and both experimental and theoretical data

have been performed. Our results show good agreement with earlier works, and they might be useful in thermonuclear fusion research and astrophysical applications.
Keywords: Energy levels; Oscillator strengths; and transition probabilities.

58. Evaluation of Plasma Produced by First and Second Harmonic Nano-Second Laser for Enhancing the Capability of Laser Induced Breakdown Spectroscopy Technique

Hosam HegazyAffiliated, Essam A. Abdel-Wahab, Farid M. Abdel-Rahim and Sami H. Allam

The European Physical Journal D, 68-107 (2014) IF: 1.398

Evaluation of plasmas produced and optimized for improving the capability of convenential laser induced breakdown spectroscopy (LIBS) for analytical purposes of solid samples is the main goal of the present work.
The plasma produced in the present study was generated by focusing a single nano-second Nd:YAG laser at the fundamental wavelength of 1064 nm and at the second harmonic wavelength of 532 nm on an Al target in air at atmospheric pressure. The emission spectrum was recorded time resolved over the whole UV-NIR (200–1000 nm) spectral range.
This work describes an extension of previously reported studies and focuses now on the determination of the plasma parameters at the optimum condition – highest signal-to-noise ratio (SNR) and minimum limit of detection (LOD) — of the LIBS technique, which is now widely applied to the elemental analysis of materials in atmospheric air. Parameters of the produced plasma in the time interval from 0 to 10 μs are determined for to further understanding the LIBS plasma dynamics. O I and Mn I spectral lines are used in the present work as thermometric lines for the determination of the plasma temperature based on Boltzmann plots. Stark broadening of lines yields the electron density. The widths of the Ha-line at 656.27 nm, of the O I line at 844.65 nm, of Al II lines at 281.65 nm and 466.30 nm and of the Si I line at 288.15 nm has been utilized for that. The plasma temperature ranged from 0.73 eV to around 1 eV for the different laser energies with both laser wavelengths for the optimized plasma used for LIBS analysis. This temperature is very close to that well known for the other spectrochemical analytical techniques or in excitation sources such as inductively coupled plasma-optical emission spectrometry (ICP-OES).
Keywords: Plasma Physics.

Dept. of Zoology

59. Ameliorative Effects of Cicer Arietinum Extract and Coelatura Aegyptiaca Shell Powder on Estrogen Sensitive Organs in Ovariectomized Rats

Mohamed Marzouk, Amel M. Soliman, Sohair R. Fahmy and Amany A. Sayed

World Applied Sciences Journal, 31: 863-863 (2014)

Postmenopausal osteoporosis has become a social problem as it gives rise many health-related problems, therefore osteoporosis disease requiring appropriate management strategies. eplacement therapy is effective for both prevention and treatment, but recent findings have shown that its long term administration is not as safe as was previously thought, thereby alternative treatments are urgently needed. The current work selects Cicer arietinum extract (CAE) as one of most important legume and Coelatura aegyptiaca shell (CES) powder as calcium source to study their effectiveness against osteoporosis through their effects on estrogen determinant organs. The present study revealed that CAE and/or CES decline the body weight gain induced by ovariectomy (OVX). Furthermore , CAE and/or CES improve femur and tibial weights changed by OVX. Additionally, they ameliorated the abnormal weights of uterus, vagina and thymus caused by OVX. The ongoing study concluded that the concurrent treatment of CAE and CES may be effective in treating osteoporosis, as evident by their amelioration on estrogen sensitive organs.
Keywords: Legume; Calcium source; Ovariectomy; Estrogen; Determinant organs.

60. Anti-Inflammatory and Anti-Cancer Effects of ß-Carotene, Extracted from Dunaliella Bardawil by Milking

Abeer M. Badr, Effat F. Shabana, Hoda H. Senousy and Hend Y. Mohammad

Journal of Food, Agriculture and Environment, 12 (3& 4): 2 4 - 31 (2014)

Natural ß-carotene was continuously extracted from Dunaliella bardawil in a two phase system by milking with the biocompatible solvent dodecane (20% v/v) at 20,000 lux and 170 rpm for 15 days. The ß-carotene yield was 23.30 µg/ml at the end of the experiment. High performance liquid chromatography (HPLC) analysis showed that ß-carotene is formed of the two isomers 9-cis and all trans in a ratio of 1.13. We aimed to assess the protective and therapeutic effects of natural ß-carotene at various doses (30, 140 and 350 µg/kg) compared with synthetic ß-carotene at a fixed dose (350 µg/kg) on lipopolysaccharide (LPS)-induced inflammatory cytokines in CD1 mice, and also to test the cytotoxicity of natural ß-carotene on breast cancer (MCF-7) and hepatoma (HepG2) human cell lines in vitro. Pre- and post-treatment of LPS, low dose (30 µg/kg) of natural ß-carotene treatment caused a significant reduction in the levels of interleukin (IL)-1a, interferon (IFN)-? and tumor necrosis factor (TNF) - a compared with LPS - treated control group. Administration of natural ß-carotene at dose of 140 µg/kg exhibited a significant decrease in the levels of IL-1a and IFN- as protective and IL-1a as therapeutic. In contrast, high dose (350 µg/kg) of natural of ß-carotene failed to exert anti-inflammatory effect either in pre or post-treatment. Synthetic ß-carotene pretreatment induced protective inhibition of IL-1a and IFN-? levels while post-treatment had no influence. IC50 of natural ß-carotene was 14.58 and 7.44 µg/ml, while IC50 of doxorubicin was 7.51 and 2.67 µg/ml for HepG2 and MCF-7 cell lines, respectively. Hence , natural ß-carotene is capable of enhancing anti-inflammatory activity in vivo and is a promising anti-cancer drug.
Keywords: Dunaliella bardawil; ß-carotene; Milking; lipopolysaccharides; Anti-inflammation; Pro-inflammatory cytokines; Breast cancer MCF-7 cell line; HepG2 cell line; Anti-cancer; Acute inflammation.

61. Evaluation of Sandwich Elisa with Dot-Elisa as an Immunodiagnostic Assay for Cystic Hydatosis Using E. Granulosusprotoscoleces Antigens

Maha G. Soliman, Alyaa A. Farid, Ibrahim R. Shalash, Asmaa A. Abo Elqasem and Azza M. El-Amir

Global Veterinaria, 13: 150-158 (2014)

This study aimed to evaluate sandwich ELISA and dot-ELISA for diagnosis of human cycticechin ococcosis by the detection of circulating crude protoscolex antigen (CPA) in serum samples collected from highly endemic areas in Egypt. The CPA used was obtained from lung and liver cysts of sheep and camel and injected in rabbits to raise specific polyclonal antibodies (pAb) against E. 20, specificity, PPV and NPV of dot-ELISA were higher than those of sandwich ELISA in both of human and animal cases. In both techniques, cross reaction with fascioliasis and other parasites was observed. In conclusion, although these two tests had similar results, dot-ELISA was more acceptable with respect to its higher sensitivity and simplicity infield practice. Moreover, antigen detection assay might be a useful approach for assessment of the efficacy of treatment especially after removal of the cyst.

Keywords: Echinococcosis; Sandwich ELISA; Dot-ELISA; Crude protoscolex antigen.

62. Fasciola Gigantica Excretory/Secretory Antigens as Possible Vaccine Candidates

M. Younis, I. Rabia, S. El Deeb and A. El Amir

Journal of Medical Sciences, 14(1): 1-11 (2014)

A variety of antigens are secreted and excreted by parasites present in the blood, faeces, urine and other fluids of the infected host. These antigens have potential for use in immunodiagnosis and vaccine development. In an attempt to develop a suitable vaccine against F. gigantica infection, two antigens were isolated and purified from excretory/secretory (E/S) products as cysteine protease and fatty acid binding proteins (CP and FABP) of the parasite by immunoaffinity chromatography. Parasitological and immuno-logical parameters were standardized using the sera from experimentally non-infected (group A) infected (group B), immunized with CP (group C), immunized with CP and infected (group D), immunized with FABP (group E) and immunized with FABP and infected (group F). The mean worm burdens and bile egg count after challenge were reduced significantly by 37.7 and 55.5%, respectively in rabbits vaccinated with CP. In contrast, low significant reduction in worm burdens and bile egg count were observed in rabbits immunized with FABP after challenge (23.5 and 35.7%, respectively). All F. gigantica infected rabbits showed an increased Igs and cytokines levels. On the other hand, immunization of rabbits with CP or FABP induced a significant expression of humoral antibodies (IgM, total IgG, IgG1, IgG2 and IgG4) and cytokines (IL-6, IL-10, IL-12 and TNF-α) with higher level in case of CP than FABP. From this study, we can deduce that F. gigantica CP is a relevant candidate for vaccination against fascioliasis, while the level of protection used by FABP may not appear sufficient enough to protect these ruminants against the deleterious effects of Fasciola infection.

Keywords: Humoral and Cellular Immune Responses; F. Gigantica Antigens; E/S; Cp; Fabp.

63. Induction of Protective Immune Responses Against Schistosomiasis Using Functionally Active Cysteine Peptidases

Rashika El Ridi, Hatem Tallima, John P. Dalton and Sheila Donnelly

Gene Function In Schistosomes: Recent Advances Towards A Cure, (2014)

Each year schistosomiasis afflicts up to 600 million people in 74 tropical and sub-tropical countries, predominantly in the developing world. Yet we depend on a single drug, praziquantel, for its treatment and control. There is no vaccine available but one is urgently needed especially since praziquantel-resistant parasites are likely to emerge at some time in the future. The disease is caused by several worm species of the genus Schistosoma. These express several classes of papain-like cysteine peptidases, cathepsins B and L, in various tissues but particularly in their gastrodermis where they employ them as digestive enzymes. We have shown that sub-cutaneous injection of recombinant and functionally active Schistosoma mansoni cathepsin B1 (SmCB1), or a cathepsin L from a related parasite Fasciola hepatica (FhCL1), elicits highly significant protection (up to 73%) against an experimental challenge worm infection in murine models of schistosomiasis. The immune modulating properties of this subcutaneous injection can boost protection levels (up to 83%) when combined with other S. mansoni vaccine candidates, glyceraldehyde 3-phosphate dehydrogenase (SG3PDH) and peroxiredoxin (PRX-MAP). Here, we discuss these data in the context of the parasite's biology and development, and provide putative mechanism by which the native-like cysteine peptidase induce protective immune responses.

Keywords: Schistosome; Cysteinepeptidase; CathepsinB; Th2immuneresponse; Papain.

64. Serological Versus Antigen Detection Methods for Giardia Duodenalis Diagnosis

Bashir M, Farid A, Rabia I, Mostafa B and El Amir A.

Journal of the Egyptian Society of Parasitology, 44: 709-718 (2014)

Giardiasis constitutes an important public health problem in the world. Contamination of the water with fecal materials including viruses and pathogenic protozoa still represents an environmental health hazard, especially in rural areas. The survey study evaluated the relation between seropositivity and some risk factors. Moreover, the study compared between the serological IgG and IgM level and antigen detection methods for the diagnosis of giardiasis. The results indicate that sex distribution and age were the mean risk factors for seroprevelence. In this study, sera samples were employed in sandwich ELISA assay, to detect circulating Giardia antigens. None of the negative control serum samples gave a positive reaction, but cross reaction was encountered with 3 case of Cryptosporidium. The specificity of the assay was 94.83%. On the other hand, the sensitivity of the Giardia patient's sera was 94.12% which was higher than that of IgG (86.25%) and IgM (87.50%) secretion measurements. In conclusion, antigen detection methods give better and earlier diagnosis for giardiasis can be performed quickly and do not require an experienced and skilled morphologist.

Keywords: Egypt; patients; Giardia duodenalis; ELISA; IgG; IgM.

Faculty of Agriculture

Dept. of Agricultural Biochemistry Section

65. Synthesis of New Organoselenium Compounds Containing Nucleosides as Antioxidant

Laila M. Break, Mahmoud A. Mohamed and Shams H. Abdel-Hafez1

Oriental Journal of Chemistry, 30: 1639-1645 (2014)

Selenium containing nucleosides derived from some heterocyclic moieties such as Pyridineselenol, and pyridazineselenol is described herein. Ribosylation of selenol compounds were prepared in good yield by silyation of selenol derivatives with 1-O - acetyl - 2,3,5-tri – O - benzoyl – D - ribofuranose followed by debenzoylation to afford the corresponding free N-nucleosides and -1- (2,3,5-trihydroxy-?-D-ribofuranosyl) -2- seleno - 4,6 - dimethylpyridine-3- carbonitrile (6a,7a); b and a-1-(2,3,5-trihydroxy - D-ribofuranosyl) -3- seleno-5,6- diphenylpyridazine - 4- carbonitrile (6b,7b). Newly synthesized compounds were characterized using the well known spectroscopic tools (IR, 1 HNMR , 13CNMR and mass spectroscopy). Antioxidant activity of six selenonucleoside compounds (1a; 6a; 7a; 1b; 6b and 7b) was evaluated by animal assay model using experimental mice. The resulted data revealed that compounds 6a and 7b showed to be more active as antioxidant with a better performance of scavenging ability than the other compounds.
Keywords: 1-O – Acetyl - 2,3,5- Trihydroxy-D-ribofuranose; Nucleosides; Selenium ; Pyridineselenol; pyridazineselenol; antioxidants.

Dept. of Animal Production

66. The Effect of Vitrification of Immature Bovine Oocytes to the Subsequent in Vitro Development and Gene Expression

Faheem MS, Baron E, Carvalhais I, Chaveiro A, Pavani K and da Silva FM.

Zygote, 26: 1-10 (2014) IF: 1.323

Immature bovine oocytes were vitrified using the cryotop method and their post-warming survivability and capability to undergo in vitro maturation, fertilization and subsequent embryonic development were evaluated. In addition throughout the embryonic 2-cell, 4-cell, morula and blastocyst stages, the expression of four developmentally important genes (Cx43, CDH1, DNMT1 and HSPA14) was analysed using the real-time polymerase chain reaction (PCR). Immature oocytes (n = 550) were randomly assigned to non-vitrified (fresh) or cryotop vitrification groups using ethylene glycol (EG) with 1,2 propanediol (PROH) or dimethylsulphoxide (DMSO). After warming, oocytes survivability, embryo cleavage and embryonic developmental rates were not statistically different between the two cryoprotectants groups. However, the DMSO group had a lower ($P < 0.05$) oocyte maturation rate compared with the fresh and PROH groups. For morula and blastocyst rates, the DMSO group achieved a lower ($P < 0.05$) morula rate compared with the fresh group, while at the blastocyst stage, there were no differences between fresh and both cryoprotectants groups. For molecular analysis, at the 4-cell stage, most studied genes showed an inconsistent pattern of expression either from the PROH or DMSO groups. Noteworthily, these differences were limited at the morula and blastocyst stages. In conclusion, the cryotop method is sufficient for vitrification of immature bovine oocytes, both for embryonic developmental competence and at the molecular level. Moreover, PROH showed some advantage over DMSO as a cryoprotectant
Keywords: Cryopreservation; Cryoprotectants; Cryotop; In vitro fertilization; Real-time quantitative PCR.

67. A Comparative Study on Body Measurements and Carcass Characteristics in Egyptian Sheep and Goats

Mamdouh Sayed Abd-Alla

Asian Journal of Animal and Veterinary Advances, 9: 292-301 (2014)

Ten males of each of Barki lambs and Zaraibi kids, fattened up to 12 months old, were used to investigate the influence of species on body measurements and carcass traits. Relationships between body weight and carcass traits with body measurements were also examined. Heart girth and paunch girth of Barki lambs were significantly ($p<0.05$) higher than those of Zaraibi kids. Barki lambs achieved significantly ($p<0.05$) heavier weights of heart, liver, kidneys, spleen, lung and trachea than those of Zaraibi male kids. Hot carcass weight was significantly ($p<0.01$) higher in Barki lambs (20.2 kg) than Zaraibi kids (11.1 kg). Dressing percentage of Barki carcasses (50.4%) was significantly ($p<0.05$) higher than that of Zaraibi ones (47.7%).

Meanwhile, the left side cold carcass weight of Barki lambs significantly ($p<0.05$) excelled that of Zaraibi kids (10.3 vs. 5.4 kg). Accordingly, weights of carcass cuts (round, loin, thoracic region, shoulder and neck) were significantly ($p<0.01$) heavier in Barki carcasses compared to Zaraibi ones. However, carcasses of Zaraibi kids produced significantly ($p<0.05$) lower total fat stores (1101.0 g) than that of Barki lambs (2377.0 g). Longissimus dorsi area of Barki carcass significantly ($p<0.05$) excelled (14.5 cm2) that of Zaraibi ones (8.0 cm2).

On the other hand, each of fasted body, carcass cuts and total fat stores weights, except paunch girth, of Barki lambs were not significantly correlated with any parameter of body measurements. Whereas, no correlation coefficient was found between any weight of Zaraibi carcass and either body length or height at withers. Additionally, dressing percentage of Zaraibi kids was positively and significantly ($p<0.01$) correlated with only heart girth.

In the meantime, total fat stores weight of Zaraibi carcass was positively and significantly ($p<0.05$) correlated with each of heart girth ($r = 0.73$) and paunch girth ($r = 0.67$). In view of the previous results it could be concluded that positive and significant correlations were found between paunch girth and body weight of Egyptian sheep and goats. Accordingly, paunch measuring could be used to estimate body weight under field conditions. Additionally, heart girth and round circumference can be used to predict body weight as well as hot carcass weight.
Keywords: Barki; Zaraibi; Body measurements; Carcass traits; internal offals; Carcass cuts; Longissimus dorsi area.

Dept. of Vegetable Crops

68. Effects of Several Amendments on Organic Melon Growth Andproduction , Meloidogyne Incognita Population and Soil Properties

Emad Abdelhameed Abdeldaym, Flora Erriquens, Nicola Sasanelli, Francesco Giovanni Ceglie, Claudio Zaccone, Teodoro Miano and Claudio Cocozza

Scientia Horticulturae, 180: 156-160 (2014) IF: 1.504

This paper reports the effects of several amendments on the root-knot nematode Meloidogyne incognitapopulation, the melon production and some soil features. Treatments were: (i) virgin olive pomace (VOP)at rate of 22 t ha-1, (ii) olive pomace based compost (COP) at rate of 9 t ha-1, (iii) chicken manure (CM)at dose of 3 t ha-1, (iv) CM plus the nematophagous fungus Paecilomyces lilacinus, (CMB) at 3 t ha-1and4 kg ha-1, respectively and (v) the naturally infested and untreated control (CON). The doses of the amend-ments were calculated to provide the same amount of total nitrogen (ca. 120 kg ha-1). The experimentwas carried out following a randomized block design with four replications for each treatment.The melon production significantly increased with CM and CMB in comparison to all other treatments($P = 0.05$). VOP and COP enlarged the soil organic C, the total and organic N, and the exchangeable Kcontent, while CM and CMB increased the inorganic N and available P content. The root gall index, the soilnematode population density and the reproduction rate were significantly reduced in all amended plotsin comparison to CON. The use of P. lilacinus did not influence significantly the M. incognita population,suggesting that it is possible to manage the soil fertility and the root-knot nematode population by usingorganic amendments alone.

Keywords: Root-knot nematodeMelonN requirementOrganic amendmentsSustainable agriculture.

Faculty of Veterinary Medicine

Dept. of Fish Diseases and Management

69. Mass Mortalities in Mari-Cultured European Sea Bass (Dicentrarchus Labrax) at Northern Egypt.

Moustafa, M. M., A. E. Eissa, L. A. M. Laila and A. Gaafar

Research Journal of Pharmaceutical, Biological and Chemical Sciences, 5: 95-109 (2014)

Septicemic bacterial diseases represent the most prominent sector of diseases with direct colossal impacts on Egyptian mariculture. Significant mortalities have been recorded among sea bass, Dicentrarchus labrax L. cultured in at floating net-cages and earthen ponds located within the North of Egypt during the year of 2012. Moribund and / or freshly dead fish samples showing a picture of clinical septicemia were collected for bacteriological and histopathological studies. A total number of 100 fish samples were inspected through the course of these episodes. Vibrio alginolyticus (V. Alginolyticus) was the most prevalent bacterial pathogen 32.25 %, followed by Pseudomonas fluorescens (P. fluorescens) 24.19% , Tenacibacullum maritimum (T. maritimum) 17.74 % and Streptococcus agalactiae (S. agalactiae) 14.51 %. Vibrio vulnificus (V. vulnificus) infections recorded the lowest rate 11.29 %. Bacterial infections were linked with numerous pathological changes. Adverse water quality measures recorded in the investigated fish farms were strongly incriminated in triggering the infections with an ultimate end of mass mortalities.

Keywords: Sea bass; Mass mortalities; Bacterial pathogens; PCR;Water quality.

Dept. of Microbiology

70. Evaluation of Eric-Pcr ss Genotyping Method for Corynebacterium Pseudotuberculosis Isolates

Elaine M. S. Dorneles, Jordana A. Santana, Dayana Ribeiro, Fernanda Alves Dorella, Alessandro S. Guimarães, Mohamed S. Moawad, Salah A. Selim, Ana Luiza M. Garaldi, Anderson Miyoshi, Márcio G. Ribeiro, Aurora M. G. Gouveia, Vasco Azevedo, Marcos B. Heinemann and Andrey P. Lage

Plos One, 9 (6) e98758: 1-10 (2014) IF: 3.534

The aim of this study was to evaluate the Enterobacterial Repetitive Intergenic Consensus (ERIC-PCR) as a tool for molecular typing of C. pseudotuberculosis isolates from eight different hosts in twelve countries. Ninety-nine C. pseudotuberculosis field strains, one type strain (ATCC 19410T) and one vaccine strain (1002) were fingerprinted using the ERIC-1R and ERIC-2 primers, and the ERIC-1R+ERIC-2 primer pair. Twenty-nine different genotypes were generated by ERIC 1-PCR, 28 by ERIC 2-PCR and 35 by ERIC 1+2-PCR. The discriminatory index calculated for ERIC 1, ERIC 2, and ERIC 1+2-PCR was 0.89, 0.86, and 0.92, respectively. Epidemiological concordance was established for all ERIC-PCR assays. ERIC 1+2-PCR was defined as the best method based on suitability of the amplification patterns and discriminatory index. Minimal spanning tree for ERIC 1+2- PCR revealed three major clonal complexes and clustering around nitrate-positive (biovar Equi) and nitrate-negative (biovar Ovis) strains. Therefore, ERIC 1+2-PCR proved to be the best technique evaluated in this study for genotyping C. pseudotuberculosis strains, due to its usefulness for molecular epidemiology investigations.

Keywords: ERIC-PCR; Genotyping; Corynebacterium pseudotuberculosis.

Dept. of Obstetrics,Reproduction & Artificial Insemination

71. Caffeine Supplementation During Ivm Improves Frequencies of Nuclear Maturation and Preimplantation Development of Dromedary Camel Oocytes Following Ivf

Fathi M, Seida AA, Sobhy RR, Darwish GM, Badr MR and Moawad AR.

Theriogenology, 81: 1286-1292 (2014) IF: 1.845

Caffeine supplementation during oocyte IVM has been reported to improve preimplantation embryo development and the quality of in vitro–produced blastocysts in a range of species; but no studies have been done in camels. The present study investigated the effect of caffeine supplementation during dromedary camel oocyte IVM on nuclear maturation rates, IVF events, and subsequent preimplantation development. Cumulus–oocyte complexes obtained at slaughter were matured in vitro in caffeine supplemented medium either for 30 hours (caffeine 30 hours) or in the medium without caffeine supplement for 24 hours and then transferred to freshly prepared IVM medium supplemented with 10 mM caffeine for another 6 hours (caffeine 6 hours). Cumulus–oocyte complexes matured for 30 hours in the medium without caffeine supplement were used as a control. Matured oocytes were fertilized in vitro by epididymal spermatozoa of mature male camels collected from a local slaughterhouse. Eighteen hours after insemination, presumptive zygotes were cultured in modified KSOMaa medium for 7 days. Maturation and fertilization rates were significantly higher in the caffeine 6-hour group compared with the control group ($P < 0.05$), whereas IVM of oocytes in caffeine-supplemented medium for 30 hours did not affect these parameters ($P > 0.05$). Interestingly, IVM of oocytes in caffeine supplemented medium for 6 hours significantly ($P < 0.05$) increased the frequencies of blastocyst development by more than two-fold when compared with control (27.78% vs. 11.76%). In conclusion, culturing dromedary camel oocytes in maturation medium without caffeine for 24 hours and then in the medium supplemented with 10 mM caffeine for 6 hours during 30-hour IVM can significantly improve frequencies of nuclear maturation,fertilization rate, and subsequent preimplantation development.

Keywords: Dromedary camel Oocyte Caffeine IVM IVF Blastocyst.

Dept. of Physiology

72. Seasonal Changes in Some Oxidant and Antioxidant Parameters During Folliculogenesis in Egyptian Buffalo

F Hozyen H, H Ahmed H, Essawy GE and Shalaby SI.

Animal Reproduction Science, 151: 131-136 (2014) IF: 1.58

Knowledge regarding oxidant and antioxidant status in follicular fluid remains limited and its studying in vivo should enhance our

understanding of the impact of them on fertility and contribute to optimization of in vitro maturation conditions. The present study was conducted on follicular fluid and serum samples obtained from 708 buffaloes. They were examined for Malondialdehyde (MDA) as indicator of lipid peroxidation as well as superoxide dismutase (SOD) and total antioxidant capacity (TAC) as antioxidant markers. The obtained results revealed that MDA levels and SOD activity in follicular fluid decreased significantly as follicle size increased, while TAC increased significantly with the increase in follicular size. Whereas MDA level was significantly higher in summer, the TAC was significantly higher in spring. Moreover, MDA levels and SOD activities were significantly higher in the follicular fluid from different size follicles during the luteal phase than follicular phase. MDA levels in medium follicles in luteal phase and small follicles in follicular and luteal phases were significantly higher in summer than other seasons. Serum MDA levels were significantly increased in summer. In addition, MDA levels, SOD activities and TAC in serum were significantly higher during luteal phase than follicular phase in summer. TAC levels were significantly higher in follicular fluid than serum, while MDA was significantly lower in follicular fluid than serum. In conclusion, the present study revealed that oxidants/antioxidants balance may play a role in normal follicular development and oxidative stress that occur in summer could be related to reproductive seasonality in buffalo.
Keywords: Seasonal change; Follicular size; Lipid peroxidation; SOD; TAC; Buffalo.

Dept. of Surgery Anesthesiology And Radiology

73. Radiographic Evaluation of Femoral Torsion and Correlation with Computed Tomographic Techniques in Labrador Retrievers with and Without Cranial Cruciate Ligament Disease

Mostafa AA, Griffon DJ, Thomas MW and Constable PD.

Veterinary Surgery, 43: 534-541 (2014) IF: 0.989

Objectives: To (1) develop a technique to determine the anteversion angle (AA) of the femur on a single radiograph; (2) determine the correlation between this technique and other published radiographic and computed tomographic (CT) methods; and (3) compare the diagnostic outcome of these methods in determining the level at which femoral torsion occurred in Labrador Retrievers with cranial cruciate ligament (CCL) deficiency.
Study Design: Cross-sectional clinical study.
Animals: Mature pure-bred Labrador Retrievers (n¼30).
Methods: Pelvic limbs (n¼28) of 14 dogs without CCL deficiency were classified as control, whereas limbs of 16 dogs (18 limbs) with CCL deficiency were considered as diseased. Femoral torsion was evaluated using radiography and CT and variables were compared among limb groups by use of a mixed-model ANOVA, with P<.05 considered significant.
Results: There was a significant association between biplanar and lateral plane AAs but neither correlated with CT assessment of femoral torsion. On CT, a significant correlation was identified between overall AA and each of the distal, proximal, and femoral head trochanteric angles. Biplanar and lateral plane AAs did not differ between normal and CCL deficient limbs. On CT, overall and distal AAs were increased in CCL deficient limbs compared to control.
Conclusion: Biplanar determination of femoral torsion can be estimated based on a single lateral radiograph but the results will be inaccurate as only CT identified and localized the site of femoral torsion.
Keywords: Radiographic; Computed Tomographic; Evaluation; Femoral Torsion.

Dept. of Virology

74. Design of A Highly Effective Therapeutic Hpv16 E6/E7-Specific Dna Vaccine: Optimization by Different Ways of Sequence Rearrangements (Shuffling)

Almajhdi FN, Senger T, Amer HM, Gissmann Land Öhlschläger P

Plos One, (2014) IF: 3.534

Persistent infection with the high-risk Human Papillomavirus type 16 (HPV 16) is the causative event for the development of cervical cancer and other malignant tumors of the anogenital tract and of the head and neck. Despite many attempts to develop therapeutic vaccines no candidate has entered late clinical trials. An interesting approach is a DNA based vaccine encompassing the nucleotide sequence of the E6 and E7 viral oncoproteins. Because both proteins are consistently expressed in HPV infected cells they represent excellent targets for immune therapy. Here we report the development of 8 DNA vaccine candidates consisting of differently rearranged HPV-16 E6 and E7 sequences within one molecule providing all naturally occurring epitopes but supposedly lacking transforming activity. The HPV sequences were fused to the J-domain and the SV40 enhancer in order to increase immune responses. We demonstrate that one out of the 8 vaccine candidates induces very strong cellular E6- and E7-specific cellular immune responses in mice and, as shown in regression experiments, efficiently controls growth of HPV 16 positive syngeneic tumors. This data demonstrates the potential of this vaccine candidate to control persistent HPV 16 infection that may lead to malignant disease. It also suggests that different sequence rearrangements influence the immunogenecity by an as yet unknown mechanism.
Keywords: cervical cancer; Shuffled E6 and E7 genes; Human papillomavirus type 16; therapeutic DNA vaccine.

75. Genetic Diversity in the G Protein Gene of Group A Human Respiratory Syncytial Viruses Circulating in Riyadh, Saudi Arabia

Fahad N. Almajhdi Mohamed A. Farrag and Haitham M. Amer

Archives of Virology, 159: 73-81 (2014) IF: 2.282

Human respiratory syncytial virus (HRSV) is a frequent cause of hospitalization and mortality in children worldwide. The molecular epidemiology and circulation pattern of HRSV in Saudi Arabia is mostly uncharted. In the current study, the genetic variability and phylogenetic relationships of HRSV type A strains circulating in Riyadh Province were explored. Nasopharyngeal aspirates were collected from hospitalized children with acute respiratory symptoms during the winter-spring seasons of 2007/08 and 2008/09. Among 175 samples analyzed, 39 (22.3 %) were positive for HRSV by one-step RT-PCR (59 % type A and 41 % type B). Propagation of positive samples in HEp-2 cells permitted the recovery of the first Saudi HRSV isolates. Genetic variability among Saudi HRSV-A strains was evaluated by

sequence analysis of the complete attachment (G) protein gene. The nucleotide sequence was compared to representatives of the previously identified HRSV-A genotypes. Sequence and phylogenetic analysis showed that the strains examined in this study were very closely related at both the nucleotide and amino acid level, and all of them are clustered in the GA2 genotype (and mostly belonged to the NA-1 subtype). A total of 23 mutation sites, 14 of which resulted in an amino acid change, were recorded only in Saudi strains. This is the first report on genetic diversity of HRSV-A strains in Saudi Arabia. Further analysis of strains on a geographical and temporal basis is needed to fully understand HRSV-A circulation patterns in Saudi Arabia.

Keywords: Attachment protein; human respiratory syncytial virus, phylogeny; prevalence; Saudi Arabia, sequence analysis, virus isolation.

76. Hemagglutinin and Neuraminidase Genes of Influenza B Viruses Circulating In Riyadh, Saudi Arabia During 2010-2011: Evolution and Sequence Analysis

Ali G, Amer HM and Almajhdi FN.

Journal of Medical Virology, 86: 1003-1016 (2014) IF: 2.217

Influenza viruses are known as continuing threats to human public health every year worldwide. Evolutionary dynamics of influenza B viruses in humans are in a unique progression having two lineages; B/Yam and B/Vic-like viruses, which are circulating simultaneously worldwide. There is a considerable lack of data on influenza B viruses circulating in Saudi Arabia. During the winter-spring season of 2010-2011, 80 nasopharyngeal aspirates were collected from hospitalized patients with flu-like symptoms in Riyadh. Screening of samples by one-step RT-PCR identified three (3.8%) influenza B viruses. Sequencing of hemagglutinin (HA) and neuraminidase (NA) genes was performed to analyze influenza B viruses circulating in Riyadh as compared to the globally circulating strains. Several common and six unique amino acid substitutions were observed for both HA and NA genes of influenza B Saudi strains. Three unique substitutions (T182A, D196N, and K254R) were identified in HA gene of the B/Yam-like Riyadh strains. In NA gene, a unique common substitution (D53G) was found in all Riyadh strains, while two unique substitutions (L38P, G233R) were recognized only in B/Vic-like Riyadh strains. Riyadh strains were also found to contain N-glycosylation site in HA gene of both B/Vic and B/Yam lineages at positions 197-199 (NET) and 196-198 (NNK/DNK), respectively. The significance of these mutations on the antigenicity of both lineages is discussed herein. The unique changes observed in HA and NA genes of influenza B Riyadh strains support strongly the need for continuous surveillance and monitoring of new evolving strains that might pose threat to the Saudi community.

Keywords: Influenza B virus; DNA sequencing; hemagglutinin; neuraminidase; Phylogenetic Analysis; Saudi Arabia.

77. Group B Strains of Human Respiratory Syncytial Virus in Saudi Arabia: Molecular and Phylogenetic Analysis

Almajhdi FN, Farrag MA and Amer HM

Virus Genes, 48: 252-259 (2014) IF: 1.837

The genetic variability and circulation pattern of human respiratory syncytial virus group B (HRSV-B) strains, identified in Riyadh during the winters of 2008 and 2009, were evaluated by partial sequencing of the attachment (G) protein gene. The second hypervariable region (HVR-2) of G gene was amplified by RT-PCR, sequenced and compared to representatives of different HRSV-B genotypes. Sequence and phylogenetic analysis revealed that all Saudi strains belonged to the genotype BA, which is characterized by 60-nucleotide duplication at HVR-2. Only strains of 2008 were clustered with subgroup BA-IV, while those isolated at 2009 were clustered among the most recent subgroups (particularly BA-X and CB-B). Amino acid sequence analysis demonstrated 18 amino acid substitutions in Saudi HRSV-B strains; among which five are specific for individual strains. Furthermore, two potential N-glycosylation sites at residues 230 and 296 were identified for all Saudi strains, and an additional site at amino acid 273 was found only in Riyadh 28/2008 strain. O-glycosylation was predicted in 42-43 sites, where the majority (no = 38) are highly conserved among Saudi strains. The average ratio between non-synonymous and synonymous mutations (?) implied stabilizing selection pressure on G protein, with evidences of positive selection on certain Saudi strains. This report provides preliminary data on the circulation pattern and molecular characteristics of HRSV-B strains circulating in Saudi Arabia.

Keywords: Ba Genotype; G Protein; Human Respiratory Syncytial Virus Group B; Phylogenetic Analysis; Saudi Arabia.

National Institute of laser Enhanced Scinces

Dept. of Laser Applications in Metrology, Photochemistry and Agriculture (LAMPA)

78. Annealing Effects on the Structural and Optical Properties of Growth Zno Thin Films Fabricated by Pulsed Laser Deposition (Pld)

M. M. El-Desoky M. A. Ali, G. Afifi and H. Imam

Journal of Materials Science: Materials in Electronics, 25: 5071-5077 (2014) IF: 1.966

Annealed ZnO thin film at 300, 350, 400, 450 and 500 C in air were deposited on glass substrate by using pulsed laser deposition. The effects of annealing temperature on the structural and optical properties of annealed ZnO thin films by grazing incident X-ray diffraction (GIXRD), transmittance spectra, and photoluminescence (PL) were investigated. The GIXRD reveal the presence of hexagonal wurtzite structure of ZnO with preferred orientation (002). The particle size is calculated using Debye–Scherrer equation and the average grain size were found to be in the range 5.22–10.61 ± 0.01 nm. The transmittance spectra demonstrate highly transparent nature of the films in visible region ([70 %). The calculation of optical band gap energy is found to be in the range 2.95– 3.32 ± 0.01 eV. The PL spectra shows that the amorphous film gives a UV emission only and the annealed films produce UV, violet, blue and green emissions this indicates that the point defects increased as the amorphous film was annealed.

Keywords: PLD; thin film;ZnO.

Dept. of Laser Sciences and Interactions (LSI)

79. Effect of Thermal Annealing on Structural and Optical Properties of Titanyl Phthalocyanine Thin Films

M.M. El-Nahass, H.A. Afify, A.–S. Gadallah, A.M. A.M. Hassanien and M. Atta Khedr

Materials Science In Semiconductor Processing, 27: 254-260 (2014) IF: 1.955

Thin films of titanyl phthalocyanine (TiOPc) have been deposited on both fused quartz and glass substrates by the thermal evaporation technique. The structural and optical properties of the as-deposited and annealed films have been reported. The structural features of the as-deposited and annealed films have been studied by X-ray diffraction (XRD), field-emission scanning electron microscopy (FESEM), and Fourier-transform infrared (FT-IR) technique. The optical constants (refractive index, n, and absorption index, k) of the films have been presented for the first time in the wavelength range 200–2500 nm by using spectrophotometric measurements at nearly normal incidence. The band gaps of the as-deposited film at 1.48 eV and 2.5 eV corresponding to Q-band and B or Soret band were red-shifted to 1.15 eV and 2.19 eV, respectively, when the film annealed at 433 K.

Keywords: Organic films; Optical properties; Effect of annealing.

80. Detection of Trace Elements in Nondegradable Organic Spent Clay Waste Using Optimized Dual-Pulsed Laser Induced Breakdown Spectrometer

Khalil AA, Gondal MA, Dastageer MA.

Appl Opt. 10;53(8):1709-17 IF: 1.649

The detection of trace elements present in nondegradable organic spent clay waste has been carried out using an optimized dual-pulsed laser induced breakdown spectrometer. The two laser pulses at 1064 and 266 nm were collinearly collimated and focused on the sample surface in order to enhance the signal intensity. The atomic transition lines at 568.8 nm (Na-I), 504.2 nm (Pb-II), 405.8 nm (Pb -I), 443.56 nm (Ca-I), 469.41 nm (S-I), 520.8 nm (Cr-I), 643 nm (Cd-I), and 928.1 nm (Cl-I) were used as marker wavelengths, and the concentrations of 688, 300, 204, 460, and 2440 ppm of Pb, S, Cd, Cr, and Cl, respectively, were detected in the 5% spent clay in the binder. The limits of detection of Pb, S, Cd, Cr, and Cl were estimated to be 6.7, 17.2, 6.5, 5.1, and 14.8 ppm, respectively, from the calibration curve for each element. In order to confirm the reliability of our system, the concentrations of the reported elements detected using our system were compared to the ones obtained with inductively coupled plasma emission spectroscopy and found to be in good agreement.

Keywords: Laser, Wast, Libs.

Dept. of Medical Applications of Lasers (MAL)

81. Novel Treatment of Nail Psoriasis Using the Intense Pulsed Light: A One-Year Follow-Up Study

Abeer Attia Tawfik Hassanin

Dermatologic Surgery, 40: 473-478 (2014) IF: 2.467

Background : Pulsed dye laser has been used successfully in the treatment of nail psoriasis. Intense pulsed light (IPL) has been used in the treatment of plaque psoriasis using a 550-nm filter.
Objective to Study: The efficacy of IPL in the treatment of nail psoriasis.
Patients and Methods: Twenty patients with finger and toe nail psoriasis were treated by IPL. Sessions were performed every 2 weeks for a maximum of 6 months. The Nail Psoriasis Severity Index (NAPSI) score was calculated at baseline and 1 month after the last treatment session. Follow-up was performed at 1, 6, and 12 months.
Results: Patients received a mean of 8.63 6 3.6 IPL sessions. After treatment, there was significant improvement in the nail bed and matrix ($p < .0001$), and in the NAPSI ($p < .0001$). Nail bed showed improvement by 71.2%, whereas the nail matrix improvement was only 32.2%. The total NAPSI was 82.4%. Patient follow-up revealed relapse in 3 patients after 6 months.
CONCLUSION Intense pulsed light is a promising effective modality of treatment of nail psoriasis, which is easy to use, safe, and provide a long period of remission. This was confirmed by the elicited clinicalimprovement, NAPSI, and patient satisfaction.

Keywords: laser ; Intense pulsed light; Nil psoriasis.

82. Randomized Split-Face Controlled Study to Evaluate 1550-Nm Fractionated Erbium Glass Laser for Treatment of Acne Vulgaris- an Image Analysis Evaluation

Moneib H1, Tawfik AA, Youssef SS and Fawzy MM.

Dermatologic Surgery, 40: 1191-1200 (2014) IF: 2.467

Background: Novel and promising results in acne treatment with infrared lasers have been reported. The 1,550-nm erbium glass laser is one of the infrared lasers that may be useful in the treatment of acne.
Objective: The aim of this study was to evaluate the efficacy of an erbium glass laser in treatment of active acne and to study the effect of this type of laser on sebaceous glands.
Patients and Methods: Twenty-four patients with active acne lesions were treated using 1,550-nm (30– 40 mJ) fractional erbium glass laser. Every patient received 4 sessions with a 2-week interval. Follow-up was done every 3 months for 1 year. The image analyzer computer system was used to measure the sebaceous gland size.
Results: A significant reduction ($p < .0001$) in the mean count of lesions was observed after treatment and in the follow-up period. A significant reduction in the size of sebaceous glands was also evident after laser treatment.
Conclusion: Treatment of active acne with the 1,550-nm erbium glass laser is effective. Papules, pustules, and nodules all respond well to therapy. The sebaceous gland size decreased significantly, which accounts for the long remission period.
Keywords: Acne; Erbium glass laser; Image analysis; Sebacous glands.

83. Topical Liposomal Rose Bengal for Photodynamic White Hair Removal: Randomized, Controlled, Double-Blind Study

Samy N and Fadel M.

Journal of Drugs In Dermatology, 13(4): 436-442 (2014) IF: 1.32

Background: Blond and white hair removal by laser is a complicated task with weak satisfactory results due to the deficiency in laser-absorbing chromophore.
Objective: To investigate if repetitive sessions of photodynamic therapy (PDT) using external application of liposomal Rose Bengal (RB) photosensitizer followed by intense pulsed light (IPL) exposure enables removal of gray and white hair.
Materials and Methods: Rose bengal loaded in liposomes (LRB) was constructed, prepared in hydrogel, and was studied for some pharmaceutical properties. Penetration and selective hair follicle damage in mice skin were studied. Topical gel containing LRB was used for treating fifteen adult females who were complaining of facial white terminal hair. Unwanted facial hair was treated for three sessions at intervals of 4–6 weeks using intense pulsed light (IPL). At each session, the treatment area was pre-treated with topical LRB gel, while a control group of another 15 patients applied placebo gel before IPL treatment. Evaluations included hair regrowth, which was measured 4 weeks after each treatment session and at 6 months follow-up by counting the number of terminal hair compared with baseline pretreatment values. Treatment outcomes and complications if any were also reported.
Results: Average hair regrowth in the LRB group was 56% after 3 treatment cycles. After six-months follow up, average terminal hair count compared with baseline pretreatment showed 40% reduction and no recorded side effects.
A significant difference ($P<0.05$) was seen compared with the control group; the clinical results were promising.
Conclusions: Photodynamic hair removal using rose bengal-encapsulated liposomal gel in combination with IPL treatment showed significant efficacy in the treatment of white hair compared with a control group.
Keywords: White hair; Liposomes; Pdt.

International Publications Awards
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84. Numerical Computation and Optimization of Turbine Blade Film Cooling

Ahmed M. Elsayed, Farouk M. Owis and M. Madbouli Abdel Rahman

Advances in Mechanical Engineering, 6: (2014) IF: 0.575

The effect of film cooling parameters on the cooling effectiveness of an actual turbine blade is studied numerically. Film cooling parameters such as the hole shape, holes distribution, blowing ratio, streamwise angle, and spanwise angle are investigated to select the appropriate cooling parameters. Unstructured finite volume technique is used to solve the steady, three-dimensional, and compressible Navier-Stokes equations. Using one cooling holes array indicates that the average overall film cooling effectiveness is enhanced by decreasing the streamwise angle for high blowing ratio on the suction side of the turbine blade. The film cooling effectiveness is enhanced on the pressure side for a blowing ratio of unity. In addition, the cooling effectiveness increases by increasing the lateral and forward diffusion angles. The computations reveal that the efficiency of cooling is decreased at the leading edge due to the large surface curvature of the blade. The presence of compound shape (spanwise angle) enhanced the film cooling effectiveness on the two sides. Multistagger cooling hole arrays are investigated and the results indicate that five-stagger cooling arrays on the pressure side and three-stagger cooling arrays on the suction side with LFDCA-9.3-14.6 hole shape are enough to have good cooling of the two sides using 2.17% bleed air of the engine.

Keywords: Jet Engine;Axial Turbine; Film Cooling.

Dept. of Architectural Engineering

85. Rethinking New Communities Development - With Reference to Egypt'S 40 Years Experience

Sayed Mohamed Ettouney and Nasamat Abdel-Kader

International Journal of Housing Sciences and its Applications, 138(2): 127-137 (2014)

The Egyptian New Communities development experience started in the mid-Nineteen Seventies, as part of a general strategy to tackle the complex problems challenging Egyptian settlements and context; mostly surrounded by invaluable agricultural land. New Communities were thought as an effective solution to the problems of rapid encroachment of agricultural land, deteriorating urban fabric, and low-quality living. It represented a serious endeavor and a heavy undertaking in a developing context burdened by challenging priorities and limited resources.

The New Communities drive and partial realization continued in full vigour for almost two decades. The authors were involved in many of the studies of New Communities during the said period, and followed the fortunes and lapses of the experience since.

The New Communities present scene, points-out their limited success in achieving underlying objectives and meeting declared development programs, in terms of: securing effective "resident" population, accommodating a balanced socio-economic mix, enabling lower income groups, achieving relative independence and autonomy, and providing sustainable living and quality settings.

The political upheaval in the wake of January 2011 uprising in Egypt transformed the political and socio-economic setting; allowed extensive informal physical interventions and hosted hastily formulated development strategies that ignored previous policies and products, slowed and stifled development (New Communities included).

The present work critically re-examines Egyptian New Communities, advocating the importance of continuous monitoring and critical assessment of earlier development plans and implemented policies, and in turn deployment of the related findings in formulating new development strategies and future planning scenarios. Supported by recorded satellite images and a limited pilot research, it reviews the New Communities recent changes and current status, pointing out means of revitalizing its role in the country's development drive and future planning policies.

The paper falls into three closely related sections, namely: Recalling Conception and Realization, Recent Transformations and the Present Scene, and Propositions for Revitalization and Development.

Keywords: Urban Planning; Urban Development; Development Policies; Egyptian New Communities' Development.

Dept. of Chemical Engineering

86. Nickel Removal from Electroplating Waste Water using Stand-alone and Electrically Assisted ion Exchange Processes

I. Ismail, A. Soliman, N. Abdel-Monem, H. Salah Ahmed and M. H. Sorour

International Journal of Environmental Science and Technology, 11 (1): 199-206 (2014) IF: 1.794

Wastewater discharged from metal-finishing processes usually contains nickel, a hazardous substance that is used extensively in the surface finishing industry. In the present study, an acidic solution containing nickel was treated using strong acid cation exchange resin. A continuous lab-scale cation exchange arrangement permitting the assessment of electric current as an enhancement mechanism was designed and utilized at different flow rates successfully. Applying the electrical potential enhanced the nickel removal by 12.7 % at flow rate 240 ml/h, and 2.5 % at flow rate 500 ml/h. Nickel recovery has been also investigated using hydrochloric acid as an eluent with and without electric current enhancement.

Keywords: Industrial wastewater treatment; Nickel; Ion exchange; Electrically enhanced.

87. Effects of Piperazine on Carbon Dioxide Removal from Natural Gas using Aqueous Methyl Diethanol Amine

A.Y. Ibrahim, F.H. Ashour, A.O. Ghallab and M. Ali

Journal of Natural Gas Science and Engineering, 21: 894-899 (2014) IF: 1.406

CO_2 removal process by Amine absorption can be improved by adding an activator such as piperazine (a secondary amine) to the aqueous Methyl Diethanol Amine (MDEA) solution. The shuttle

mechanism and the effect of Piperazine on CO_2 removal process have been studied and simulated through licensed simulation software, Unisim.
The simulation was used to simulate amine absorption process for CO_2 removal and to study the effect of the process variables on CO_2 removal efficiency. An actual Process Flow Diagram (PFD) was built to simulate the absorption process based on an actual feed gas stream from Egyptian natural gas plant raw gas.
The natural gas stream contained 10% CO_2 and is treated to reduce the CO_2 content to less than 1% by mole. CO_2 removal efficiency was investigated by changing process parameters, namely absorption process pressure and temperature, amine concentration and lean amine circulation rate. Piperazine addition, either on account of water or MDEA, increases the absorption efficiency but to a certain limit, when the reaction is no longer mass transfer limited.
Temperature decrease improves absorption efficiency, unlike the common behavior of pure aqueous MDEA. Also, decreasing column pressure contributes in reducing CO_2 partial pressure in the feed gas and consequently decreases reaction rate with amine. Increasing circulation rate was found to increase the absorption efficiency till reaching the equilibrium.
Keywords: CO_2 removal; Gas processing; MDEA; Piperazine; Simulation.

Dept. of Electric Power and Machines

88. Position Control of Hydraulic Servo System using Pid Controller Tuned by Some Evolutionary Techniques

Mohamed El-Sayed M Essa, Magdy AS Aboelela and Mohamed Ahmed Moustafa Hassan

Journal of Vibration and Control, (2014) IF: 4.355

This paper uses a particle swarm optimization (PSO) algorithm, an adaptive weighted PSO (AWPSO) algorithm, and a genetic algorithm (GA) to determine the optimal proportional-integral-derivative controller's parameters of a hydraulic position control system. A typical hydraulic servo system has been selected as an application. The mathematical model of this hydraulic servo system which comprises the most relevant dynamics and nonlinear effects is considered.
The model simulates the behavior of a REXROTH servo valve and includes the nonlinearities of friction forces, valve dynamics, oil compressibility, and load influence. The performance indices, which have been used in the optimization process, are integral absolute error, integral square error and integral time absolute error. The proposed controller is implemented on the simulation model to identify the best method for tuning the controller. Compared with GA and AWPSO results, the PSO method has been found to be more efficient and robust in improving the step response of a position control for hydraulic systems in terms of settling time, maximum overshoot and undershoot.
Keywords: Adaptive weighted particle swarm optimization;Error criterion; Genetic algorithm; Hydraulic servo system; Particle swarm optimization; PID controller.

89. Resilient Guaranteed Cost Control of A Power System

Hisham M. Soliman, Mostafa H. Soliman and Mohammad. F. Hassan

Journal of Advanced Research, 5: 377-385 (2014) IF: 3.00

With the development of power system interconnection, the low-frequency oscillation is becoming more and more prominent which may cause system separation and loss of energy to consumers. This paper presents an innovative robust control for power systems in which the operating conditions are changing continuously due to load changes. However, practical implementation of robust control can be fragile due to controller inaccuracies (tolerance of resistors used with operational amplifiers). A new design of resilient (non-fragile) robust control is given that takes into consideration both model and controller uncertainties by an iterative solution of a set of linear matrix inequalities (LMI). Both uncertainties are cast into a norm-bounded structure. A sufficient condition is derived to achieve the desired settling time for damping power system oscillations in face of plant and controller uncertainties. Furthermore, an improved controller design, resilient guaranteed cost controller, is derived to achieve oscillations damping in a guaranteed cost manner. The effectiveness of the algorithm is shown for a single machine infinite bus system, and then, it is extended to multi-area power system.
Keywords: Power system dynamic stability Robust control Resilient control LMI.

90. Modeling and Simulation of Sensorless Control of Pmsm with Luenberger Rotor Position Observer and Sui Pid Controller

Ghada A. Abdel Aziz, Mohamed. I. Abu El- Sebah, A. Shaltout and F. Ismail

Journal of Electrical Engineering, 2(1): 1-8 (2014) IF: 0.42

This paper presents an investigation and evaluation of the performance of the surface Permanent Magnet Synchronous Motor drive under the Simplified Universal Intelligent PID controller (SUI PID). The estimation of the rotor position and the angular speed in dynamic rate were derived by the use of the Luenberger state observer for currents and MRAS (Model Reference Adaptive System) observer. It also shows how to use a Luenberger state observer in a field oriented control (FOC) scheme to implement a sensorless vector control strategy. The mathematical descriptions of the system and simulation results have been presented in this paper.
Keywords: Surface Permanent Magnet Synchronous; Motor; Luenberger State Observer; SUI PID controlle MRAS observer; Sensorless vector control.

Dept. of Electronics and Communication Engineering

91. Diversity of Mimo Linear Precoding

Ahmed Hesham Mehana and Aria Nosratinia

IEEE Transactions on Information Theory, 60 (2): 1019-1038 (2014) IF: 2.326

This paper studies multiple-input multiple-output linear precoding in the high-signal-to-noise-ratio regime under flat fading. The r of fixed-rate diversity. The zero-forcing (ZF), regularized ZF, matched filtering, and Wiener filtering precoders are analyzed. It is shown that regularized ZF (RZF) or matched filter (MF) suffers from error floors for all positive multiplexing gains. However, in the fixed rate regime, RZF and MF precoding achieve full diversity for spectral efficiencies up to a certain threshold and zero diversity at rates above it. When the regularization parameter in the RZF is optimized in the minimum mean square error sense, the structure is known as the Wiener precoder, which in the fixed-rate regime is shown to have diversity that depends not only on the number of diversity at all fixed rates is analyzed for a number of linear precoders. The diversity-multiplexing tradeoffs (DMTs) a re also obtained, discovering that for many linear precoders the DMT gives no direct insight into the intricate behavio antennas, but also on the spectral efficiency. The diversity in the presence of both precoding and equalization is also analyzed.

Keywords: MIMO; precoder; equalization;MMSE;zero forcing, diversity

92. Interference-aware energy-efficient cross-layer Design for Healthcare Monitoring Applications

Alaa Awad, Amr Mohamed, Amr A. El-Sherif and Omar A. Nasr

Computer Networks, 74: 64-77 (2014) IF: 1.282

Body Area Sensor Networks (BASNs) leverage wireless communication technologies to provide healthcare stakeholders with innovative tools and solutions that can revolutionize healthcare provisioning; BASNs thus promotes new ways to acquire, process, transport, and secure the raw and processed medical data to provide the scalability needed to cope with the increasing number of elderly and chronic disease patients requiring constant monitoring. However, the design and operation of BASNs is challenging, mainly due to the limited power source and small form factor of the sensor nodes. The main goal of this paper is to minimize the total energy consumption to prolong the lifetime of the wireless BASNs for healthcare applications. An Energy–Delay–Distortion cross-layer framework is proposed in order to ensure transmission quality for medical signals under limited power and computational resources. The proposed cross-layer framework spans the Application–MAC–Physical layers. The optimal encoding and transmission energy are computed to minimize the total energy consumption in a delay constrained wireless BASN. The proposed framework considers three scheduling techniques: TDMA, TDMA–Simultaneous Transmission and dynamic frequency allocation scheduling. The TDMA–ST scheme schedules the weakly interfering links to transmit simultaneously, and schedules the strongly interfering links to transmit at different time slots. The dynamic frequency allocation scheme allocates the time–frequency slots optimally based on the application's requirements. Simulation results show that these proposed scheduling techniques offer significant energy savings, compared to the algorithms that ignore cross-layer optimization.

Keywords: BASNs; EEG signals; Convex optimization; Cross-layer optimization.

94. On the Coexistence of A Primary User with an Energy Harvesting Secondary User: A Case of Cognitive Cooperation

Ahmed El Shafie, Tamer Khattab, Amr El-Keyi and Mohamed Nafie

Wireless Communications and Mobile Computing, (2014) IF: 0.858

In this paper, we consider a cognitive scenario where an energy harvesting secondary user shares the spectrum with a primary user. The secondary source helps the primary source in delivering its undelivered packets during periods of silence of the primary source. The primary source has a queue for storing its data packets, whereas the secondary source has two data queues: a queue for storing its own packets and the other for storing the fraction of the undelivered primary packets accepted for relaying. The secondary source is assumed to be a battery-based node, which harvests energy packets from the environment. In addition to its data queues, the secondary user has an energy queue to store the harvested energy packets. The secondary energy packets are used for primary packets decod ing and data packets transmission. More specifically, if the secondary energy queue is empty, the secondary source can neither help the primary source nor transmit a packet from the data queues. The energy queue is modeled as a discrete-time queue with Markov arrival and service processes. Because of the interaction of the queues, we provide inner and outer bounds on the stability region of the proposed system. We investigate the impact of the energy arrival rate on the stability region. Numerical results show the significant gain of cooperation.

Keywords: Cognitive radio; Cooperative communications; Closure; Interacting queues; Bounds; Stability analysis.

93. On the Achievable Rates of A Secondary Link Coexisting with A Primary Multiple Access Network

John Tadrous and Mohammed Nafie

Eurasip Journal on Wireless Communications and Networking, (2014) IF: 0.72

An achievable rate region for a primary multiple access network coexisting with a secondary link of one transmitter and a corresponding receiver is analyzed. The rate region depicts the sum primary rate versus the secondary rate and is established assuming that the secondary link performs rate splitting. The achievable rate region is the union of two types of rate regions. The first type is a rate region established assuming that the secondary receiver cannot decode any primary signal, whereas the second is established assuming that the secondary receiver can decode the signal of one primary link. The achievable rate region is determined first assuming discrete memoryless channel (DMC), then the results are applied to a Gaussian channel. In the Gaussian channel, the performance of rate splitting is characterized for the two types of rate regions. Moreover, a necessary and sufficient condition to determine which primary signal the secondary receiver can decode without degrading the range of primary achievable sum rates is provided. When this condition is satisfied by a certain primary user, the secondary receiver can decode its signal and achieve larger rates without reducing the sum of the primary achievable rates as compared to the case in which it does not decode any primary signal. It is also shown that the

probability of having at least one primary user satisfying this condition grows with the primary signal-to-noise ratio.
Keywords: Rate splitting; Cognitive radios; Discrete memoryless channels.

Dept. of Irrigation & Hydraulics Engineering

95. Predicting Morphological Changes DS New Naga-Hammadi Barrage For Extreme Nile Flood Flows: A Monte Carlo Analysis

Ahmed M.A. Sattar and Yasser M. Raslan

Journal of Advanced Research, 5 (1): 97-107 (2014) IF: 3

While construction of the Aswan High Dam (AHD) has stopped concurrent flooding events, River Nile is still subject to low intensity flood waves resulting from controlled release of water from the dam reservoir. Analysis of flow released from New Naga-Hammadi Barrage, which is located at 3460 km downstream AHD indicated an increase in magnitude of flood released from the barrage in the past 10 years. A 2D numerical mobile bed model is utilized to investigate the possible morphological changes in the downstream of Naga-Hammadi Barrage from possible higher flood releases. Monte Carlo simulation analyses (MCS) is applied to the deterministic results of the 2D model to account for and assess the uncertainty of sediment parameters and formulations in addition to sacristy of field measurements. Results showed that the predicted volume of erosion yielded the highest uncertainty and variation from deterministic run, while navigation velocity yielded the least uncertainty. Furthermore, the error budget method is used to rank various sediment parameters for their contribution in the total prediction uncertainty. It is found that the suspended sediment contributed to output uncertainty more than other sediment parameters followed by bed load with 10% less order of magnitude.
Keywords: 2D Numerical model; Bed load; Monte Carlo simulation ; New naga - Hammadi barrage; River Nile; Suspended load.

96. Gene Expression Models for Prediction of Dam Breach Parameters

Ahmed M. A. Sattar

Journal of Hydroinformatics, 16 (3): 550-571 (2014) IF: 1.336

Data from a large database of 140 dam failure cases are used with gene expression programming (GEP) to develop new empirical formulae of physical meaning for prediction of non-dimensional key dam breach parameters. The GEP models are trained on 75% of the data set and validated on the remaining 25%. Parametric and error analyses are conducted to confirm the robustness of the developed relations. Moreover, uncertainty analyses using the Monte Carlo technique is performed to check for the output uncertainty of key dam breach parameters and the contribution of various input parameters to the overall output uncertainty. It is found that uncertainties of 20 to 40% are calculated for the developed GEP models with reservoir shape factor and dam erodibility being main influential predictors.
Keywords: Dam breach; Dam breach parameters; Gene expression programming; Monte Carlo simulation; Risk; Uncertainty.

97. Gene Expression Models for the Prediction of Longitudinal Dispersion Coefficients in Transitional and Turbulent Pipe Flow

Ahmed M. A. Sattar

Journal of Pipeline Systems Engineering and Practice, 5 (1): 1949-1204 (2014)

Longitudinal dispersion in pipelines leads to changes in the characteristics of contaminants. It is critical to quantify these changes because the contaminants travel through water networks or through chemical reactors. The essential characteristics of longitudinal dispersion in pipes can be described by the longitudinal dispersion coefficient. This paper presents the application of evolutionary gene expression programming (GEP) to develop new empirical formulas for the prediction of longitudinal dispersion coefficients in pipe flow using 220 experimental case studies of the dispersion coefficient with a R range of 2,000–500,000 spanning transitional and turbulent pipe flow. Gene expression programming is used to develop empirical relations between the longitudinal dispersion coefficient and various control variables, including the Reynolds number, the average velocity, the pipe friction coefficient, and the pipe diameter. Four GEP models are developed, and the weight and importance of each control variable is presented. The prediction uncertainties of all of the developed GEP models are quantified and compared with those of existing models. Finally, a parametric analysis is performed for further verification of the developed GEP models. The results indicate that the proposed relations are simple and can effectively evaluate the longitudinal dispersion coefficients in pipe flow.
Keywords: Longitudinal dispersion coefficient; Axial mixing in pipes; Pipe flow; Pipe network; Water quality; Evolutionary algorithms; Gene expression programming; Uncertainty analysis; Parametric analysis.

Dept. of Mechanical Design and Production

98. Effect of Carbon Nanotube Damage on the Mechanical Properties of Aluminium–Carbon Nanotube Composites

Mohamed T.Z. Hassan, Amal M.K. Esawi and Sayed Metwalli

Journal of Alloys and Compounds, 607: 215-222 (2014) IF: 2.726

The effect of carbon nanotube (CNT) damage on the mechanical properties of aluminium (Al)–CNT composites is investigated using mildly and severely damaged CNTs. Composites prepared with mildly damaged CNTs are found to have 97.5% higher strength and 14.2% higher modulus than pure Al. Increased carbide formation – due to the damage sustained – is observed and is believed to be in the form of isolated secondary particles within the matrix which do not contribute to enhancing the Al–CNT bonds. The strength and modulus of composites with severely damaged CNTs are found to be higher by 71% and 3.3% than pure Al, suggesting that even fragmented CNT particles can contribute to enhancing the strength and modulus of the Al matrix. The results are analyzed in light of strengthening mechanisms expected to be playing different roles in Al–CNT composites. The enhancement in strength is believed to be mainly due to matrix strengthening mechanisms and is not affected by

CNT damage whereas the gain in Young's modulus is due to load transfer to the CNTs and accordingly is more significant in the case of the mildly damaged CNTs which have retained their tubular structure and high aspect ratio.
Keywords: Composite materials; Nanostructured materials; Powder metallurgy; Mechanical properties.

99. Microstructure and Mechanical Properties of MWCNTs Reinforced A356 Aluminum Alloys Cast Nanocomposites Fabricated by Using A Combination of Rheocasting and Squeeze Casting Techniques

Abou Bakr Elshalakany, T. A. Osman, A. Khattab, B. Azzam, M. Zaki

Journal of Nanomaterials, (2014): 1-14 (2014) IF: 1.644

A356 hypoeutectic aluminum-silicon alloys matrix composites reinforced by different contents of multiwalled carbon nanotubes (MWCNTs) were fabricated using a combination of rheocasting and squeeze casting techniques. A novel approach by adding MWCNTs into A356 aluminum alloy matrix with CNTs has been performed. This method is significant in debundling and preventing flotation of the CNTs within the molten alloy. The microstructures of nanocomposites and the interface between the aluminum alloymatrix and theMWCNTs were examined by using an optical microscopy (OM) and scanning electron microscopy (SEM) equipped with an energy dispersive X-ray analysis (EDX). This method remarkably facilitated a uniform dispersion of nanotubes within A356 aluminum alloy matrix as well as a refinement of grain size. In addition, the effects of weight fraction (0.5, 1.0, 1.5, 2.0, and 2.5 wt%) of the CNT-blended matrix on mechanical properties were evaluated. The results have indicated that a significant improvement in ultimate tensile strength and elongation percentage of nanocomposite occurred at the optimal amount of 1.5wt%MWCNTs which represents an increase in their values by a ratio of about 50% and 280%, respectively, compared to their corresponding values of monolithic alloy. Hardness of the samples was also significantly increased by the addition of CNTs.
Keywords: A356 Hypoeutectic aluminum-Silicon alloys; Mwcnts; Mmncs; Mechanical Properties.

100. 3D Overlapped Grouping Ga for Optimum 2D Guillotine Cutting Stock Problem

Maged R. Rostom, Ashraf O. Nassef, Sayed M. Metwalli,

Alexandria Engineering Journal, 53 (3): 491-503 (2014)

The cutting stock problem (CSP) is one of the significant optimization problems in operations research and has gained a lot of attention for increasing efficiency in industrial engineering, logistics and manufacturing. In this paper, new methodologies for optimally solving the cutting stock problem are presented. A modification is proposed to the existing heuristic methods with a hybrid new 3-D overlapped grouping Genetic Algorithm (GA) for nesting of two-dimensional rectangular shapes. The objective is the minimization of the wastage of the sheet material which leads to maximizing material utilization and the minimization of the setup time. The model and its results are compared with real life case study from a steel workshop in a bus manufacturing factory. The effectiveness of the proposed approach is shown by comparing and shop testing of the optimized cutting schedules. The results reveal its superiority in terms of waste minimization comparing to the current cutting schedules. The whole procedure can be completed in a reasonable amount of time by the developed optimization program.
Keywords: Cutting stock problem (CSP); Heuristic; Two-dimensional; Genetic Algorithm (GA); Grouping Genetic Algorithms (GGA); Overlapped chromosome (OLC).

Dept. of Mechanical Power Engineering

101. Rewetting of Hot Vertical Tubes by A Falling Liquid Film With Different Directions of Venting the Generated Steam

S.A. Nada, M. Shoukri, A.F. El-Dib and A.S. Huzayyin

International Journal of Thermal Sciences, 85: 62-72 (2014) IF: 2.563

An experimental study of quenching of a hot vertical tube by udden introduction of a falling liquid filmwas investigated under different methods of venting the generated steam. The steam generated during the quenching process may form a ountercurrent vapor velocity which exceeds the onset of flooding limit causing flooding of the liquid film and resisting the propagation of the quench front delaying the rewetting process. To study the effect of this steam countercurrent flow, experiments were carried out in three stages. In the first stage, the tubewas closed from top to force the steam generated to be vented from bottom. In the second stage, both ends of the tube were opened to allow venting of the steam from both ends. In the third stage, the tube was closed at bottom and the steam was vented from top. The results showed that, the rewetting velocity in case of bottom steam-venting is higher than that in case of top and bottom steamventing which in turn is higher than that in case of top steam-venting. For the three methods of steam venting, the quenching velocity decreases with increasing the initial tube temperature and the inlet liquid temperature and decreasing the liquid flow rate. Experimental correlations for rewetting velocities were deduced from experimental data for different cases of steam venting directions. Predictions of equations were compared with the present and previous experimental data and good agreement was found.
Keywords: Rewetting; Vertical tubes; Flooding; Quenching front.

Dept. of Structural Engineering

102. Automated Multi-Objective Construction Logistics Optimization System

Hisham Said and Khaled El-Rayes

Automation in Construction, 43: 110-122 (2014) IF: 1.82

Construction logistics planning entails the coordination of supply and site activities by integrating their decisions and recognizing existing interdependencies to minimize the total material management cost. Despite the preliminary estimates of its benefits to the construction industry, few contractors adopted logistics management because of its demand for detailed data and decision of material supply and site operations. This paper presents the development of a new automated multi-objective construction logistics optimization system (AMCLOS) that would support the contractors in optimally planning material supply and

storage. AMCLOS provides a holistic framework of automatically retrieving project spatial and temporal data from existing scheduling and BIM electronic files, seamlessly integrating relevant contractor and suppliers' data, and optimizing material supply and site decisions to minimize total logistics costs. The performance of AMCLOS was validated against a previous construction logistics planning model, which provided useful insights on material supply and storage logistics in congested and spacious sites. The developed system is envisioned to increase the implementation of logistics management practices and early integration and coordination of construction supply and site processes

Keywords: Automated system; Material logistics; Building information models; Optimization.

103. Utilizing Telematics Data to Support Effective Equipment Fleet-Management Decisions: Utilization Rate and Hazard Functions

Hisham Said, Tony Nicoletti and Peter Perez-Hernandez

Journal of Computing in Civil Engineering, 28: 1-11 (2014) IF: 1.39

Contractors and equipment rental companies have started to acknowledge and use the telematics technology as a reliable solution for timely collection of their equipment fleet data. Telematics is the integration of wireless communications, vehicle monitoring systems, and location devices to provide real-time spatial and performance data of the fleet machines. Despite the large amount of real-time equipment data made available by telematics, fleet managers still try to identify ways to use such data to make informed fleet-management decisions. This paper presents the development of novel telematics-based computational methodologies to support two major equipment fleet management tasks: fleet use assessment and equipment health monitoring. First, a description of the telematics system and data used are presented. Second, a computational algorithm is proposed to quantify the fleet-wide equipment used, based on basic telematics data. Third, a health-monitoring framework is developed to estimate equipment failure events using telematics-based hazard functions, which were developed using survival analysis techniques. Finally, the telematics data sets of large equipment fleets (dozers, excavators, backhoes, and dump trucks) from two companies are used to verify and validate the proposed research developments by providing insightful fleet-management information.

Keywords: Fleet management; Telematics; Data analysis; Health assessment; Utilization.

104. Maximizing the Computational Efficiency of Temporary Housing Decision Support Following Disasters

Omar El-Anwar and Lei Chen

Journal of Computing in Civil Engineering, 28(1): 113-123 (2014) IF: 1.385

Postdisaster temporary housing has long been a challenging problem because of its interlinked socioeconomic, political, and financial dimensions. A significant need for automated decision support was obvious to address this problem. Previous research achieved considerable advancements in developing optimization models that can quantify and optimize the impacts of temporary housing decisions on the socioeconomic welfare of displaced families and total public expenditures on temporary housing as well as other objectives. However, the computational complexity of these models hindered its practical use and adoption by emergency planners. This article analyzes the computational efficiency of the current implementation of the most advanced socioeconomic formulation of the temporary housing problem, which uses integer programming. Moreover, it presents the development of a customized variant of the Hungarian algorithm that has a superior computational performance while maintaining the highest quality of solutions. An application example is presented to demonstrate the unique capabilities of the new algorithm in solving large-scale problems.

Keywords: Temporary housing; Computational efficiency; Optimization; Disaster management; Integer programming.

Faculty of Computers and Information

Dept. of Computer Science

105. A Comparative Study for Rhodopsin Protein Folding Problem

Iman Ahmed Mahmoud, Amr Ahmed Badr and Mostafa Abdel Azim

Journal of Computer Science, 10 (10): 1890-1899 (2014)

Proteins are very important components in any living cells. A number of diseases such as Retinitis pigmentosa, Stargadt-like macular degeneration and Doyne Honeycomb Retinal Dystrophy (DHRD) diseases are shown to result from misfunctioning of proteins. Protein folding problem is a way to predict the best and optimal 3D molecular structure (tertiary structure) of a protein which is then considered to be a sign for the protein's proper functionality.

This comparative study's purpose is to calculate the protein's energy using the Empirical Conformational Energy Program for Peptides (ECEPP) package and experiments were performed on the Rhodopsin proteinusing three different evolutionary algorithms in order to find the best energy in parallel with the best structure for the protein and a comparison for the results obtained from the three algorithms was performed. It was found that the best result was -11.8 obtained from the Extended Compact Genetic Algorithm (ECGA). ECGA has proved from the obtained results to be the best algorithm from the chosen algorithms in the comparative study in obtaining the Rhodpsin protein's energy and its equivalent structure.

Keywords: Extended compact genetic algorithm; Rhodopsin protein; Particle swarm optimization.

106. Clustering Tweets Using Cellular Genetic Algorithm

Amr Adel, Essam ElFakharany and Amr Badr

Journal of Computer Science, 10 (7): 1269-1280 (2014)

As the popularity of Twitter continues to increase rapidly, it is xtremely necessary to analyze the huge amount of data that Twitter users generate. A popular method of tweet analysis is clustering. Because most tweets are textual, this study focuses on clustering tweets based on their textual content similarity.

This study presents tweet clustering using cellular genetic algorithm cGA. The results obtained by cGA are compared with those obtained by generational genetic algorithm in terms of average fitness, average time required for execution and number of generations. Experimental results are tested with two sets: One of 1000 tweets and the second formed of 5000 tweets. The results show a nearly equal performance for both algorithms in terms of the average fitness of the solution. On the other hand, cGA shows a much faster -performance than generational. These results demonstrate that cellular genetic algorithm outperforms generational genetic algorithm in tweet clustering

Keywords: Clustering; Cellular genetic algorithm; Twitter.

107. Egyptian License Plate Recognition Using Enhanced Stroke Width Transformation and Fuzzy Artmap

Alaa Mohamed Youssef, Mohamed S. El-Mahallawy and Amr Badr

Journal of Computer Science, 10 (6): 961-969 (2014)

License Plate Recognition (LPR) is the most important type of Intelligent Transportation System (ITS). LPR is used in many different types of ITS like electronic payment systems, toll station, parking fees, freeway and arterial management systems for traffic surveillance. Few years ago, Egyptians government changed the car license plate to include letters and numbers. So the needs for efficient LPR System for the new license plate are increased in different ITS fields. This study presents an enhanced LPR detection algorithm for the new Egyptian licenses plate. The detection enhancement is done using Stroke Width Transform algorithm to extract letters from candidate areas combined with Fuzzy ARTMAP classifier. Stroke Width Transform (SWT) is a state of art algorithm developed by Microsoft Research Lab for detecting text in natural scene, it seeks to find the value of stroke width for each image pixel and demonstrate its use on the task of text detection in natural images. This study is focusing on detecting Arabic letters in the candidate license plate area using SWT image map instead of binary image map where not all Arabic letters have uniformly stroke width and some letters have a dot above and below it. The proposed model shows 26% detection accuracy enhancement than conventional LPR systems (Sobel Edge detection with binary image map using template matching technique).

Keywords: Image processing; License plate recognition (LPR); License plate segmentation; Stroke width.

108. On the Significance of Fuzzification of the N and M in Cancer Staging

Sara A.Yones, Ahmed S. Moussa, Hesham Hassan and Nelly H.Alieldin

Cancer Informatics, 13: 85-91 (2014)

The tumor, node, metastasis (TNM) staging system has been regarded as one of the most widely used staging systems for solid cancer. The "T" is assigned a value according to the primary tumor size, whereas the "N" and "M" are dependent on the number of regional lymph nodes and the presence of distant metastasis, respectively.

The current TNM model classifies stages into five crisp classes. This is unrealistic since the drastic modification in treatment that is based on a change in one class may be based on a slight shift around the class boundary. Moreover, the system considers any tumor that has distant metastasis as stage 4, disregarding the metastatic lesion concentration and size. We had handled the problem of T staging in previous studies using fuzzy logic. In this study, we focus on the fuzzification of N and M staging for more accurate and realistic modeling which may, in turn, lead to better treatment and medical decisions.

Keywords: MR imaging; Alpha cut; Distant metastasis; Fuzzy logic; Regional lymph nodes.

Dept. of Operation Research and Decision Support

109. An Innovative Fuzzy Logic Based Approach for Supply Chain Performance Management

Nedaa Agami, Mohamed Saleh and Mohamed Rasmy

IEEE, Systems Journal, 8 (2): 336-342 (2014) IF: 1.746

In the last decade, the topic of supply chain performance measurement has attracted the attention of many researchers and practitioners worldwide. A series of significant changes and advancements in the theory and applications has been noticed. Nevertheless, gaps still exist. Current supply chain performance measurement systems still suffer from being too inward looking, ignoring external environmental factors that might affect the overall supply chain performance in the future when setting new targets. In this paper, we introduce an innovative approach to supply chain performance management. The proposed idea integrates fuzzy logic with trend impact analysis and provides a scenarios-based method that simulates and quantifies the possible effect of external factors on the supply chain performance, and thus enables setting realistic achievable targets. The idea is novel and beyond the state of the art of supply chain performance measurement.

Keywords: Fuzzy logic; Performance management; Supply chain; Trend impact analysis.

110. Joint Economic Lot Sizing Problem for A Three-Layer Supply Chain With Stochastic Demand

Hisham M. Abdelsalam and Magy M. Elassal

International Journal of Production Economics, 155 (C): 272-283 (2014)

This paper considers the joint economic lot-sizing problem (JELP) for multi-layer supply chain with multi-retailers and single manufacturer and supplier. The paper extends the work of (Ben-Daya et al., 2013) and relaxes the assumption of deterministic demand and constant holding and ordering costs. The paper proposes modifying four computational intelligent algorithms to solve mixed integer problems and compares their performance for solving the problem at hand. The paper, further, compares between adopting a centralized safety stock policy versus a decentralized policy. Results showed cuckoo search to outperform other tested algorithms and, also, favored adopting a centralized policy.

Keywords: Charged system search; Cuckoo search; Gravitational search algorithm; Joint economic lot sizing; Particle swarm optimization; Production planning; Stochastic optimization; Supply chain coordination.

Institute of Statistical Studies and Research

Dept. of Computer Sciences and Information

111. Using Haar Classifiers to Detect Driver Fatigue and Provide Alerts

Lamiaa Fattouh Ibrahim, Maysoon Abulkhair, Amal D. AlShomrani, Manal AL-Garni, Ameerah AL-Mutiry, Fadiah AL-Gamdi and Roa'a Kalenen

Multimedia Tools and Applications, 71 (3): 1857-1877 (2014) IF: 1.058

Drowsiness is a transition state between being awake and asleep and can have serious consequences when occurring in tasks that require sustained attention such as driving. During the state of drowsiness, reaction time is slower, vigilance is reduced, and information processing is less efficient, which may cause accidents. The proposed Driver Fatigue Detection System(called FDS) aims to monitor the alertness of drivers to prevent them from falling asleep at the wheel. The system monitors the driver's face using Haar feature classifiers with an increased training set to detect changes in the face of the driver quickly. A correlation matching algorithm is used to accurately provide the target's position and track the target's eyes according to the intensity, shape, and size of the pupils. FDS uses an IR illuminator to produce the desired bright pupil effect when the driver is wearing sunglasses. The resulting system operates in realtime, and is more accurate and less intrusive to the driver than other systems currently available.

Keywords: Driver fatigue; Image processing; Haar classifier; Correlation matching algorithm.

112. XML Access Control: Mapping XACML Policies to Relational Database Tables

Abd El-Aziz Ahmed Abd El-Aziz and Arputharaj Kannan

International Arab Journal of Information Technology, 11 (6): 527-534 (2014) IF: 0.366

Although eXtensible Access Control Markup Language (XACML) is recognized as a precise and a complete policy description language, the structure of the current XACML policy is complex. Hence, users need to understand XACML well and write down the securing policy all by hand, which make it dif?cult to master and use. On the other hand, RDBMS is easy and simple to use by all users and allows hiding the dif?culties of XACML by storing XACML policies and rules in relational tables. Hence, it will be easy for users to use and understand the XACML policies and rules. In this paper, we propose a new mapping technique to map XACML policies and rules into relational rules and store them in tables to ease the access control of the XML documents. The implementation of the proposed technique demonstrates a significant access decision time.

Keywords: XML security; XACML; Relational database; Authorization tables; Access control.

113. Exponentiated Generalized Inverse Weibull Distribution

I. Elbatal and Hiba Z. Muhammed

Applied Mathematical Sciences, 8 (81) : 3997-4012 (2014)

The inverse Weibull distribution can be readily applied to a wide range of situations including applications in medicine, reliability and ecology. In this article we introduce a new model of generalized inverse Weibull distribution referred to as the Exponentiated generalized inverse distribution. We provide a comprehensive mathematical treatment of this distribution. We derive the moment generating function and the rth moment thus generalizing some results in the literature. Expressions for the density, moment generating function and rth moment of the order statistics also are obtained. We discuss estimation of the parameters by maximum likelihood and provide the information matrix

Keywords: Inverse weibull distribution; Hazard function; Order statistics; Moments; Maximum likelihood estimation.

(3)
Medical Sciences Sector

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 deviationof 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 confidentialityand 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 sur?ng 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% reporteddesiretowardthesamesex, ofwhom 5.6% hadhomosexualencounters, mostly in the form of external stimulation rather than intercourse, and exclusively undercover. An overwhelming majority was egodystonic (78.2%).

Conclusion: Thisis—toourknowledge—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 seudoaneurysm (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.

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 importantcomplication in transfusion-dependent patients.

Objectives: To determine alloimmunization prevalence in Egyptian patients with b-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 b-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), andanti-P1 (1.6%; 2 of 123). Anti-D antibodies developed in 34.5% of all Rhnegative 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 ¼ .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 ¼ .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 dis-ease determined by interactions of multiple disease sus- ceptibility genes and environmental factors. Interleukin (IL)-18 is an important cytokine for initiating and perpet- uating 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 differ- ence between the degree of asthma severity and IL-18 -607C/A polymorphism was found (p = 0.489). No sig- nificant 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 inter- mittent 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 associa- tions 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 sig- nificantly 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 multi- transfused 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 HBsAgpositive. 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 <.05). ARBC group demonstrated higher RCM that provided significantly higher HCT values to our group of anemic patients (P <.05). Hemolysis was significantly lower in the ARBC group, compared with the MRBC group (P <.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-β1 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- β1 level and TGF- β1 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- β1 gene expression in peripheral blood was quantitated using real-time polymerase chain reaction (PCR), while serum TGF- β1 was analysed using enzyme-linked immunosorbent assay (ELISA).

Results : TGF- β1 gene expression was ignificantly 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-β1 gene xpression showed significant positive correlation with erum TGF- β1 (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-?1 gene expression in comparison with AFP. The area under the curve for TGF-?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-?1 gene expression were 65% and 75%, respectively, at a cutoff value of 0.462 fold change.

Conclusion: TGF- β1 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- β1 gene expression in the pathogenesis of HCC.

Keywords: Transforming growth factor- β1; Gene expression; Hepatocellular carcinoma; Real-time PCR.

Dept. of Dermatology

125. Transforming Growth Factor-β1 Gene Polymorphism in Mycosis Fungoides

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Clinical and Experimental Dermatology, 39: 806-809 (2014) IF: 1.234

Background: Dysregulation in transforming growth factor (TGF)- β1 signalling pathways has been linked to cancer.

Aim: To study the association between single nucleotide polymorphisms (SNPs) of the TGF-β1 gene and mycosis fungoides (MF).

Methods: Using restriction fragment length polymorphism analysis, SNPs in the TGF- β1 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- β1 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- β1 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: β1 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 interstital 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 Kreutzträger, 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% ± 26.6 and volume change of -68.5% ± 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

Nour-Eldin A. Nour-Eldin, Mohammed Alsubhi, Nagy N. Naguib, Thomas Lehnert, Ahmed Emam, Martin Beeres, Boris Bodelle, Karen Koitka, Thomas J. Vogl and Volkmar Jacobi

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

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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

A. Hussein A and A. Abousetta

The Journal of Laryngology and Otology, 128: 612-617 (2014) IF: 0.7

bjective: 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 for 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, Gonçales FL Jr, Gower E, Gschwantler M, Guimarães Pessôa 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, Gonçales FL Jr, Guimarães Pessôa M, Hézode C, Hindman SJ, Hofer H, Husa P, Idilman R, Kåberg M, Kaita KD, Kautz A, Kaymakoglu S, Krajden M,

Krarup 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, Sarmento-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. Balık, 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. Krarup, 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

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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,17b-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 (IFNα) 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 IFNa 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 IFNa 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?

Eman M. Hassan, Dalia A. Omran , Mohamad L. El Beshlawey, Mahmoud Abdo and Ahmad El Askary

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 elastograhy (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% and76%, 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

Sohair Ismail, Hanan Abdel Hafez, Samar K. Darweesh, Kamal Hassan Kamal and Gamal Esmat

Annals of Gastroenterology, 27(4): 380-386 (2014)

Background: Lamivudine monotherapy is eff ective in suppressing hepatitis B virus (HBV) replication to undetectable levels by PCR, in ameliorating liver disease and to some extent in achieving HBsAg seroconversion. Th is 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: Th is 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 signifi cant relationship between pre-treatment viremia and virologic response. No signifi cant 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. Th e 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

Wael Abo El-kheir, Hala Gabr, Mohamed Reda Awad, Osama Ghannam, Yousef Barakat, Haithem A. M. A. Farghali, Zeinab M. El Maadawi, Ibrahim Ewes and Hatem E. Sabaawy

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 physiccal 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

Saif A., Karawya S. and Abdelhamid A.

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

Gehan Hamdy, Olfat M. Hendy, Hala Mahmoud, Azza El-sebaey, Salwa R. Ali and Fatma A. Khalaf

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

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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 artertitis 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/ictrp/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

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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 mm centrally and 62 to 185 mm 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 istance 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 6 2.37 diopters (D) compared with 22.59 6 2.83 D (mean 6 SD). The mean astigmatism magnitude was 1.14 6 0.83 D compared with 1.40 6 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 (±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 %(±11) and 28.4 %(±28.8), (p=0.001), where those for cup/disc ratio were 39.0 %(±29) and 17.5 %(±39.7) (p=0.088) in the PTB and T groups, respectively. The number of IOP-lowering medications had dropped from 1.7?±?0.5 to 0.7?±?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

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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 Bohlers' 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-egment 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: Coccidiodomycosis; 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 FA2*H* in three Arab Families with a Clinical Spectrum of Neurodegenhereditary Spastic Paraparesiseration 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 dysarthia while infrequent limb dystonic movements were obvious with disease progression. Spastic quadriparesis 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 Conferringexercise-Induced Symptomatic Hyperglycaemia Responsive to Sulfonylurea

Ebrahim MS, Lawson ML and Geraghty MT

Diabetes abd 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 , responsiveto 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 patientand 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) whenon 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 tolow dose sulfonylurea with self-reported additional benefit after reduction of carbohydrate intake. We postulate that her atypical clinical presentationwas related to the intense elite-level physical activity combined with carbohydrate loading before exercise.
Keywords: Glucokinase; Heterozygote; MODY2; Sulfonylurea compounds; Exercise1

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 massl; 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. Dolllike 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

MR El-Shanshory, AA Hagag, SS Shebl, IM Badria, AH Abd Elhameed, ES Abd El-Bar, Y Al-Tonbary, A Mansour, H Hassab, M Hamdy, M Elalfy, L Sherief and E Sharaf

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 ?-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 (◦) 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 Ovarectomized Rats

Hossam A. Awad and Zienab A. Alrefaie

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 ovarectomized rats. Thirty female Wistar rats were included into a sham-operated control group and an ovarectomized 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 ovarectomized 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 ovarectomized rats. In addition, D2 expression was significantly attenuated in all tissue homogenates of the ovarectomized group. The present work showed a significant positive correlation between T4 and T3 in the sham-operated control rats, which was abolished in ovarectomized rats. A negative significant correlation between progesterone and T4 was revealed in ovarectomized rats. There was also a significant positive correlation between progesterone and D2 expression in the ovarectomized 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-Jaliah, Hussein F Sakr, Hesham M Elrefaey, Abbas O Elkarib, Riyad 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 affectivedisorders, 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

Dalia Enabah, Heba El Baz and Hamdy Moselhy

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

R.H.A. Mohammed, H.H. Kewan and M. Bukhari

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?±?17.9 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. Etanercrpt Therapy in Behçet′s Disease

Reem Hamdy Abdellatif Mohammed

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: Behcet disease; Etanercept; Refractory disease.

Dept. of Surgery

173. Strategies in the Management of Post-burn Breast Deformities

Alaa Gheita, Aly Moftah and Husam Hosny

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 mammaplasty 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.

Faculty of Oral Dental Medicine

Dept. of Oral and Maxillofacial Surgery

174. Assessment of Marginal Bone Loss Using full Thickness Versus Partial Thickness Flaps for Alveolar Ridge Splitting and Immediate Implant Placement in the Anterior Maxilla

Mohamed Mounir, G. Beheiri and W. El-Beialy

International Journal of Oral Maxillofacial Surgery, 43: 1373-1380 (2014) IF: 1.359

The aim of this study was to evaluate the effectiveness of maintaining the periosteal attachment of the facial and palatal cortical plates on crestal bone loss that occurs at the margin of dental implants placed immediately in split anterior maxillary alveolar ridges. This was a prospective randomized comparative clinical trial. The study population included 22 patients with edentulous anterior maxillary alveolar ridges who presented for treatment during the period March 2012 to September 2013. The selected patients were divided randomly into two equal groups. All patients underwent a maxillary ridge splitting technique; a total of 43 implants were placed immediately. A full thickness mucoperiosteal flap was performed in the control group patients, while a split thickness mucosal flap was done in the study group patients. Assessments included measurements of the linear changes in the marginal bone surrounding the implants immediately postoperative and after 6 months. Measurements were taken from cross-sectional and longitudinal cone beam computed tomography images using special software. The partial thickness flap used in the study group decreased the percentage of bone loss by 9.5% for the labial bone plate, 7.9% for the palatal bone plate, and 3.5% for the mesiodistal bone plate.
Keywords: Ridge splitting; Partial thickness flap; Full thickness flap; Immediate implant; Anterior maxilla.

Dept. of Orthodontics

175. Virtual Techniques For Designing And Fabricating A Retainer

Ahmed A. Nasef, Amr R. El-Beialy and Yehya A. Mostafa

Am J Orthod Dentofacial Orthop, 146: 394-398 (2014) IF: 1.437

The purpose of this article was to report a procedure for using 3-dimensional cone-beam computed tomography imaging, computer-aided design, computer-aided manufacturing, and rapid prototyping to design and produce aretainer.
Keywords: CBCT; virtual imaging; retainer; CADlCAM.

176. Zygomatic Mini-implant for Class Ii Correction in Growing Patients

El-Dawlatly MM, Abou-El-Ezz AM, El-Sharaby FA and Mostafa YA.

Journal of Orofacial Orthopedics, 3: 1-12 (2014) IF: 0.819

Objective: The correction of some Angle Class II malocclusions requires distalization of the upper first molars via an induced orthopedic effect. In the present study, we tested the potential of using a mini-implant to achieve a modified zygomatic anchorage system for Class II correction.

Materials and methods: Our study comprised 10 treated and 10 control Class II growing female subjects aged 10–12 years. Orthodontic mini-implants were placed in the zygomatic buttress to act as anchorage for the distalization. The follow-up period was 6 months; treatment changes were assessed by cone beam CT scans.
Results: Compared to the control group, the treatment group showed significant retrusion of point A, anti-clockwise rotation of the maxillary plane, and a mean molar distalization of 2.92±0.69 mm with no extrusion, no tipping or buccal rolling. There was significant upper incisor intrusion (1.89±0.84 mm) with no changes in incisor inclination. No change in the mandibular plane angle was detected.
Conclusion: Use of this technique allowed Class II correction with concomitant reduction in the visible gingiva in the treated subjects without the adverse effects experienced with other appliances.
Keywords: Skeletal anchorage Class II Mini-implants

177. Corticotomy-Facilitated Orthodontics Using Piezosurgery Versus Rotary Instruments: An Experimental Study

Farid KA, Mostafa YA, Kaddah MA and El-Sharaby FA.

Journal of the International Academy of Periodontology, 16(4): 1-6 (2014)

Objective: The aim of this study was to evaluate corticotomy-facilitated orthodontics (CFO) using piezosurgery versus conventional rotary instruments.
Materials and methods: Ten healthy adult male mongrel dogs of comparable age with a complete set of permanent dentition with average weights between 13-17 kilograms were used. CFO using conventional rotary instruments versus piezosurgery was performed on each dog in a split mouth design. For every dog, mandibular 2nd premolar retraction on each side was attempted after extracting 3rd premolars followed by corticotomy-facilitated orthodontics using conventional rotary surgical burs on the left side and an ultrasonic piezosurgery system on the right side of the same animal. Intraoral measurements of the rate of tooth movement were taken with a sliding caliper. Measurements were performed by the same operator at the time of surgery (appliance delivery) and every month for six months. The dogs were sacrificed after six months from initiation of tooth movement to evaluate the amount of tooth movement for both conventional rotary and piezosurgery corticotomy techniques.
Results: A statistically significantly higher mean amount of tooth movement for conventional rotary instrument versus the piezosurgery corticotomy technique was observed at all time intervals.
Conclusions: Tooth movement was 1.6 times faster when CFO was done using conventional rotary instruments as compared to a piezosurgery device.
Keywords: Corticotomy; Piezosurgery; Rotary instruments.

178. Treatment of A Complex Malocclusion in A Growing Skeletal Class II Patient

El Refaei AK, Fayed MM, Heider AM and Mostafa YA

Journal of Clinical Orthodontics, 48(3): 181-189 (2014)

In a growing patient with excessive lower facial height, a skeletal

Class II malocclusion is especially difficult to treat without surgical repositioning of the maxilla and possibly the mandible. 1-3 Since sagittal and transverse discrepancies often coexist in these cases, the transverse discrepancy is generally corrected first, establishing a proper base for the sagittal correction to follow. Although any degree of bite opening could result in a downward and backward mandibular rotation that would exacerbate the malocclusion, several authors have suggested that high-pull headgear can alter the forward and downward growth of the maxilla and redirect mandibular growth in a more forward and upward direction with condylar adaptation.4-12

Keywords: Class II; Malocclusion; Anchordontics.

Dept. of Pedodontics

179. Adverse Events of Surgical Extrusion in Treatment for Crown-Root and Cervical Root Fractures: A Systematic Review of Case Series/Reports

Ahmed Elkhadem, Sharon Mickan and Derek Richards

Journal of Dental Traumatology, 30: 1-14 (2014) IF: 1.214

Background: Crown-root and cervical root fractures constitute a restorative challenge due to sub-gingival position of the fracture margin. Surgical tooth extrusion is one of the treatment options. There is uncertainty regarding the prognosis of such treatment modality.

Objective: To assess adverse events of surgical tooth extrusion in the treatment for crown-root and cervical root fractures in permanent teeth.

Methods: Pub-Med, Embase, and Google Scholar were searched through 15th of June 2012. Search was limited to English and Arabic languages. Reference list of relevant studies were hand-searched. Grey literature was searched using Open Grey. Two review authors independently extracted data, while only one assessed trial quality using 8-point methodological index for non-randomized studies (MINORS) scale. A sensitivity analysis was performed to exclude studies with suspected patients' duplicates.

Results: Eleven case reports and eight case series involving 226 patients with 243 teeth were identified. No randomized controlled trials were found.

The mean quality score for all case series was 9 suggesting a fair quality, while that of all case reports was 5 suggesting poor quality. Non-progressive root resorption is the most common finding following surgical extrusion with an event rate of 30% (95% CI 24.6–36.7%). This is followed by low event rates of tooth loss (5%), slight mobility (4.6%), marginal bone loss (3.7%), and progressive root resorption (3.3%). No ankylosis occurred to any extruded tooth, while severe tooth mobility showed negligible overall event rate of 0.4%.

Conclusion: The available evidence suggests that surgical tooth extrusion is a valid technique in management of crown–root and cervical root fracture of permanent teeth. Minimal adverse events and good prognosis are expected. Further, surgical extrusion can be considered as a treatment option in teeth suffering sub-gingival decay.

Keywords: Crown-root fracture; Root resorption; Ankylosis; Prognosis.

180. Limited Evidence Suggests Standard Fluoride Toothpaste Reduces Caries Potential in Preschool Children

Ahmed Elkhadem and Suzan Wanees

Journal of Evidence-Based Dentistry, 145: 182-189 (2014)

Data Sources: CENTRAL, Medline, Embase, Web of Science, LILACS and BBO databases, the Brazilian database of thesis and dissertations (Banco de Teses CAPES), a Brazilian register of ethically approved projects involving human beings (SISNEP) and two registers of ongoing trials (Current Controlled Trials and Clinical-Trials.gov). Reference lists were also scanned for relevant papers. Study authors were contacted for additional information.

Study selection: Individual or cluster-randomised or quasi-randomised controlled trials conducted in children under seven were included.

Data extraction and synthesis: Study selection and data abstraction were conducted by two reviewers independently. Risk of bias assessment was undertaken using the Cochrane Collaboration tool. Meta-analyses of prevented fractions (PF) were performed to assess the effect of fluoride toothpaste on the dmft and dmfs. Meta-analyses were also performed to obtain a pooled relative risk (RR) to assess the effect of fluoride toothpastes on the proportion of children developing caries.

Results: Eight studies were included. When standard F toothpastes were compared to placebo or no intervention, significant caries reduction at surface (PF = 31%; 95% CI 18-43; 2644 participants in five studies), tooth (PF = 16%; 95% CI 8-25; 2555 participants in one study) and individual (RR = 0.86; 95% CI 0.81-0.93; 2806 participants in two studies) level were observed. Low F toothpastes were effective only at surface level (PF = 40%; 95% CI 5-75; 561 participants in two studies).

Conclusions: Standard F toothpastes are effective in reducing dental caries in the primary teeth of preschool children and thus their use should be recommended to this age group.

Keywords: Standard fluoride; Toothpaste reduces; Caries potential.

181. No Clear Evidence of Superiority Regarding Pulp Medicaments in Primary Molars

Ahmed Elkhadem and Inas Sami

Journal of Evidence-Based Dentistry, 15: 100-101 (2014)

Data Sources: Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), Medline, Embase, the Web of Science, OpenGrey, the US National Institutes of Health Trials Register and the World Health Organization (WHO) Clinical Trials Registry Platform.

Study selection: Two reviewers independently selected studies. Randomised controlled trials comparing different pulp interventions combining a pulp treatment technique and a medicament in primary teeth were considered.

Data extraction and synthesis: Data abstraction and risk of bias assessment were carried out independently by two reviewers. The primary outcomes were clinical failure and radiological failure, as defined in trials, at six, 12 and 24 months. Pairwise meta-analysis using fixed-effect models was conducted with statistical heterogeneity being assessed using I2 coefficients.

Results: Forty-seven trials involving 3910 teeth were included. All were small single centre studies. The overall level of evidence was low with only one trial having a low risk of bias, 20 a high risk and 26 unclear risk of bias.
The 47 trials examined 53 different comparisons: 25 for pulpotomy, 13 for pulpectomy, 13 for direct pulp capping and two comparisons between pulpotomy and pulpectomy.
Regarding pulpotomy, 14 trials compared mineral trioxide aggregate (MTA) with formocresol (FC). MTA reduced both clinical and radiological failures at six, 12 and 24 months, although the difference was not statistically significant. MTA also showed favourable results for all secondary outcomes measured, although again, differences between MTA and FC were not statistically significant (with the exception of pathological root resorption at 24 months and dentine bridge formation at six months). MTA showed favourable results compared with calcium hydroxide (CH) (two trials) for all outcomes measured, but the differences were not statistically significant (with the exception of radiological failure at 12 months). When comparing MTA with ferric
sulphate (FS) (three trials), MTA had statistically significantly fewer clinical, radiological and overall failures at 24 months. This difference was not shown at six or 12 months.
FC was compared with CH in seven trials and with FS in seven trials. There was a statistically significant difference in favour of FC for clinical failure at six and 12 months, and radiological failure at six, 12 and 24 months. FC also showed favourable results for all secondary outcomes measured, although differences between FC and CH were not consistently statistically significant across time points. The comparisons between FC and FS showed no statistically significantly difference between the two medicaments for any outcome at any time point.
For all other comparisons of medicaments used during pulpotomies, pulpectomies or direct pulp capping, the small numbers of studies and the inconsistency in results limits any interpretation.
Conclusions: We found no evidence to identify one superior pulpotomy medicament and technique clearly. Two medicaments may be preferable: MTA or FS. The cost of MTA may preclude its clinical use and therefore FS could be used in such situations. Regarding other comparisons for pulpectomies or direct pulp capping, the small numbers of studies undertaking the same comparison limits any interpretation.
Keywords: Superiority; Pulp medicaments.

Faculty of Pharmacy

Dept. of BioChemsitry

182. Natural Product Inhibitors of Ocular Angiogenesis

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Experimental Eye Research, 129: 161-171 (2014) IF: 3.017

Natural products are characterized by high chemical diversity and biochemical specificity; therefore, they are appealing as lead compounds for drug discovery. Given the importance of angiogenesis to many pathologies, numerous natural products have been explored as potential anti-angiogenic drugs. Ocular angiogenesis underlies blinding eye diseases such as retinopathy of prematurity (ROP) in children, proliferative diabetic retinopathy (DR) in adults of working age, and age-related macular degeneration (AMD) in the elderly. Despite the presence of effective therapy in many cases, these diseases are still a significant health burden. Anti-VEGF biologics are the standard of care, but may cause ocular or systemic side effects after intraocular administration and patients may be refractory. Many anti-angiogenic compounds inhibit tumor growth and metastasis alone or in combination therapy, but a more select subset of them has been tested in the context of ocular neovascular diseases. Here, we review the promise of natural products as anti-angiogenic agents, with a specific focus on retinal and choroidal neovascularization. The multifunctional curcumin and the chalcone isoliquiritigenin have demonstrated promising anti-angiogenic effects in mouse models of DR and choroidal neovascularization (CNV)
respectively. The homoisoflavanone cremastranone and the flavonoid deguelin have been shown to inhibit ocular neovascularization in more than one disease model. The isoflavone genistein and the flavone apigenin on the other hand are showing potential in the prevention of retinal and choroidal angiogenesis with long-term administration. Many other products with anti-angiogenic potential in vitro such as the lactone withaferin A, the flavonol quercetin, and the stilbenoid combretastatin A4 are awaiting investigation in different ocular disease-relevant animal models. These natural products may serve as lead compounds for the design of more specific, efficacious, and affordable drugs with minimal side effects.
Keywords: Angiogenesis; Natural compounds; Blinding diseases; Small molecules; Choroidal neovascularization; Retinal neovascularization; Polyphenols.

183. Camel's Milk Ameliorates Tnbs-Induced Colitis in Rats Via Downregulation of Inflammatory Cytokines and Oxidative Stress

Hany H. Arab, Samir A. Salama, Ahmed H. Eid, Hany A. Omar, El-Shaimaa A. Arafa and Ibrahim A. Maghrabi

Food and Chemical Toxicology, 69: 294-302 (2014) IF: 2.61

Current treatment strategies for inflammatory bowel diseases (IBD) are associated with several adverse effects, and thus, the search for effective agents with minimal side effects merits attention. Camel's milk (CM) is endowed with antioxidant/anti-inflammatory features and has been reported to protect against diabetes and hepatic injury, however, its effects on IBD have not been previously explored. In the current study, we aimed to investigate the potential alleviating effects of CM against TNBS-induced colitis in rats. CM (10 ml/kg b.i.d. by oral gavage) effectively suppressed the severity of colon injury as evidenced by amelioration of macroscopic damage, colon weight/length ratio, histopathological alterations, leukocyte influx and myeloperoxidase activity. Administration of CM mitigated the colonic levels of TNF-a and IL- 10 cytokines. The attenuation of CM to colon injury was also associated with suppression of oxidative stress via reduction of lipid peroxides and nitric oxide along with boosting the antioxidant defenses through restoration of colon glutathione and total anti-oxidant capacity. In addition, caspases-3 activity, an apoptotic marker, was inhibited. Together, our study highlights evidences for the promising alleviating effects of CM in colitis. Thus, CM may be an interesting complementary approach for the management of IBD.
Keywords: Camel's milk; TNBS; Colitis; Inflammation; Oxidative stress ; Caspase-3

184. OSU-CG5, A Novel Energy Restriction Mimetic Agent, Targets Human Colorectal Cancer Cells in Vitro

El-Shaimaa A Arafa, Ahmed H Abdelazeem, Hany H Arab and Hany A Omar

Acta Pharmacologica Sinica, 35: 394-400 (2014) IF: 2.496

Aim: Energy-restriction mimetic agents (ERMAs) are small-molecule agents that target various aspects of energy metabolism, which has emerged as a promising approach in cancer therapy. In the current study, we tested the ability of OSU-CG5, a novel ERMA, to target human colorectal cancer (CRC) in vitro.
Methods: Two human CRC cell lines (HCT-116 and Caco-2) were tested. Cell viability was assessed using MTT assay. Caspase-3/7 activities were measured using Caspase-Glo 3/7 assay kit. Western blot analysis was used to measure the expression of relevant proteins in the cells. Glucose consumption of the cells was detected using glucose uptake cell-based assay kit.
Results: OSU-CG5 dose-dependently inhibited HCT-116 and Caco-2 cell proliferation with the IC50 values of 3.9 and 4.6 μmol/L, respectively, which were 20-25-fold lower than those of resveratrol, a reference ERMA. Both OSU-CG5 (5, 10, and 20 μmol/L) and resveratrol (50, 100, and 200 μmol/L) dose-dependently increased caspase-3/7 activity and PARP level in the cells. Furthermore, both OSU-CG5 and resveratrol induced dose-dependent energy restriction in the cells: they suppressed glucose uptake and Akt phosphorylation, decreased the levels of p-mTOR and p-p70S6K, increased the levels of ER stress response proteins GRP78 and GADD153, and increased the level of ß-TrCP, which led to the downregulation of cyclin D1 and Sp1.
Conclusion: OSU-CG5 exhibits promising anti-cancer activity against human CRC cells in vitro, which was, at least in part, due to energy restriction and the consequent induction of ER stress and apoptosis.
Keywords: Colorectal cancer; Energy restriction mimetic agent; OSU-CG5; Resveratrol; Apoptosis; Glucose uptake; Akt; MTOR; ER stress; ß-TrCP.

185. Association of Genetic Variants of MTHFR, ENPP1, and ADIPOQ with Myocardial Infarction in Egyptian Patients

Olfat Gamil Shaker and Manal Fouad Ismail

Cell Biochemistry and Biophysics, 69: 265-274 (2014) IF: 2.38

The study aimed to investigate the association between MTHFR C677T, ENPP1 K121Q , and ADIPOQ 45 T/G gene polymorphisms and incidence of myocardial infarction (MI) in Egyptian patients. The study included 60 unrelated patients suffering from their first MI and 60 unrelated controls. Patients were recruited from Kasr-El Eini hospital, Cairo University. The previously mentioned polymorphisms were determined in all participants by PCR– RFLP. There was no significant difference in the distribution of genotypes and alleles of MTHFR C677T between groups. In contrast, significant difference was found in the distributions of genotypes and alleles of ENPP1 K121Q and ADIPOQ 45 T/G between MI patients and controls (P = 0.01, P = 0.004, P = 0.009, P = 0.001, respectively). Univariate analysis revealed that 121Q ENPP1 and 45 G ADIPOQ alleles were associated with the increased risk of MI (OR = 3; 95 % CI = 1.45–6.2; P = 0.004 and OR = 5.8; 95 % CI = 1.92–17.54; P = 0.001, respectively). The mutant homozygous genotypes of MTHFR, ENPP1, and ADIPOQ were more prevalent in diabetic hypertensive MI patients than it was among non-diabetic normotensive MI patients. Regarding the coagulation profile, INR (P = 0.009) and PC % (P = 0.022) were significantly different among the three genotypes of MTHFR C677T. The 677 T, 121 Q, and 45G variants were associated with MI in Egyptian patients; however, more studies are needed to determine the possible protective effect for these polymorphisms in our population.

Keywords: Myocardial infarction MTHFR C677T ENPP1 K121Q ADIPOQ 45 T/G

186. Ischemic heart diseases in Egypt: Role of xanthine Oxidase System and Ischemia-Modified Albumin

Ola Sayed Ali, Hanan Muhammad Abdelgawad, Makram Sayed Mohammed and Rehab Refaat El-Awady

Heart and Vessels, 29 (5): 629-637 (2014) IF: 2.109

It is known that xanthine oxidoreductase contributes significantly to ischemia/reperfusion injury by generating reactive oxygen species. Ischemia-modified albumin (IMA) is a biomarker of acute myocardial ischemia with high sensitivity but moderate specificity. Our study aims to evaluate the xanthine oxidase (XO) system and the IMA level in the serum of patients with ischemic heart disease, and their correlation with traditional cardiac markers. The study was conducted on 60 patients with ischemic heart disease and 22 healthy subjects (control group). Subjects were divided into three groups: group I (30 patients with ST-elevated myocardial infarction), group II (30 patients with chronic stable angina), and the control group (22 subjects). The patients and controls had laboratory tests performed including lipid profile, cardiac enzymes, XO, uric acid, and IMA. The serum levels of XO and IMA were significantly higher in group I (1.65 ± 0.29 U/ml and 0.58 ± 0.15 ABSU, respectively) than in group II (1.11 ± 0.20 U/ml and 0.29 ± 0.10 ABSU, respectively) and the control group (0.95 ± 0.16 U/ml and 0.24 ± 0.08 ABSU, respectively) (P < 0.001). There was a significant positive correlation between XO and IMA in group I. Also, there was significant positive correlation between XO or IMA and other cardiac markers, with the highest level of significance between IMA and creatine kinase (CK-MB). In group II only XO activity was significantly elevated in comparison with controls. These results confirm the role of XO enzyme in ischemic heart disease with involvement of IMA, at a detectable level, during the early necrotic phase.

Keywords: Xanthine oxidase; Ischemia-modified albumin; Ischemic heart disease; Myocardial infarction; Stable angina.

187. Nicotine Mediates Hypochlorous Acid-Induced Nuclear Protein Damage in Mammalian Cells

Samir A. Salama, Hany H. Arab, Hany A. Omar, Ibrahim A. Maghrabi and Robert M. Snapka

Inflammation, 37: 785-792 (2014) IF: 1.921

Activated neutrophils secrete hypochlorous acid (HOCl) into the extracellular space of inflamed tissues. Because of short diffusion distance in biological fluids, HOCl-damaging effect is restricted to the extracellular compartment. The current study aimed at investigating the ability of nicotine, a component of tobacco and electronic cigarettes, to mediate HOCl-induced intracellular damage. We report, for the first time, that HOCl reacts with nicotine to produce nicotine chloramine (Nic-Cl). Nic-Cl caused dose-dependent damage to proliferating cell nuclear antigen (PCNA), a nuclear protein, in cultured mammalian lung and kidney cells. Vitamin C, vitamin E analogue (Trolox), glutathione, and N-acetyl-L-cysteine inhibited the Nic-Cl-induced PCNA damage, implicating oxidation in PCNA damage. These findings point out the ability of nicotine to mediate HOCl-induced intracellular damage and suggest antioxidants as protective measures. The results also raise the possibility that Nic-Cl can be created in the inflamed tissues of tobacco and electronic cigarette smokers and may contribute to smoking-related diseases.

Keywords: Nicotine chloramine; Hypochlorous acid; Inflammation; Lung diseases; Tobacco smoking.

Dept. of Clinical Pharmacy

188. Failure of Corn Trypsin Inhibitor to Affect the Thrombin Generation Assay in Plasma From Severe Hemophiliacs

Mohammed B M, Martin E J, Salinas V, Carmona R, Young G and Brophy D F.

Journal of Thrombosis and Haemostasis, 12: 1-4 (2014) IF: 5.55

Background: The thrombin generation assay (TGA) is an important global coagulation assay; however, it suffers from the lack of preanalytical standardization. The addition of corn trypsin inhibitor (CTI) to blood collection tubes before TGA has been previously advocated to block the contact activation pathway. Emerging data, however, suggest that CTI may only be necessary when minimal tissue factor (TF) concentrations < 1 pmol are used.

Objectives: To determine whether blood collection tubes containing CTI influenced TGA parameters.

Methods: This cross-sectional, observational study performed the TGA using TF 1 pmol L(-1) in 15 healthy volunteers, 14 severely

factor VIII (FVIII)-deficient patients, and 15 severely FVIII-deficient patients with documented FVIII inhibitors. TGA was conducted using blood tubes that contained CTI 33 µg mL(-1) and no CTI.
Results: CTI markedly reduced peak thrombin (P = 0.002) and endogenous thrombin potential (P < 0.001) in the healthy volunteers but had no significant effect on TGA parameters in severely FVIII-deficient patients or those with inhibitors.
Conclusions: This lack of effect raises additional questions regarding the need for CTI as a preanalytical addition to blood collection tubes during TGA in severe hemophiliacs, particularly when activating samples with TF 1 pmol L(-1) .
Keywords: Corn trypsin inhibitor; Hemophilia; Inhibitors; Patient monitoring; Thrombin

189. Resolution of Sterile Inflammation: Role for Vitamin C

Bassem M. Mohammed, Bernard J. Fisher, Quoc K. Huynh, Dayanjan S. Wijesinghe, Charles E. Chalfant, Donald F. Brophy, Alpha A. Fowler III, and Ramesh Natarajan

Mediators of Inflammation, (2014) IF: 2.417

Introduction: Macrophage reprogramming is vital for resolution of acute inflammation. Parenteral vitamin C (VitC) attenuates proinflammatory states in murine and human sepsis. However information about the mechanism by which VitC regulates resolution of inflammation is limited.
Methods: To examine whether physiological levels of VitC modulate resolution of inflammation, we used transgenic mice lacking L-gulono-?-lactone oxidase. VitC sufficient/deficient mice were subjected to a thioglycollate-elicited peritonitis model of sterile inflammation. Some VitC deficient mice received daily parenteral VitC (200 mg/kg) for 3 or 5 days following thioglycollate infusion. Peritoneal macrophages harvested on day 3 or day 5 were examined for intracellular VitC levels, pro- and anti-inflammatory protein and lipid mediators, mitochondrial function, and response to lipopolysaccharide (LPS). The THP-1 cell line was used to determine the modulatory activities of VitC in activated human macrophages.
Results: VitC deficiency significantly delayed resolution of inflammation and generated an exaggerated proinflammatory response to in vitro LPS stimulation. VitC sufficiency and in vivo VitC supplementation restored macrophage phenotype and function in VitC deficient mice. VitC loading of THP-1 macrophages attenuated LPS-induced proinflammatory responses.
Conclusion: VitC sufficiency favorably modulates macrophage function. In vivo or in vitro VitC supplementation restores macrophage phenotype and function leading to timely resolution of inflammation.
Keywords: vitamin C; macrophages; resolution; lipid mediators; inflammation.

Dept. of Microbiology and Immunology

190. Prevalence of Central Venous Catheter-Related Infections in Catheterized Icus' Patients

Alaa El-Dien M. S. Hosny, Hala A. Farrag, Soheir A. Issa and Soheir A.A. Hagras

International Journal of Pharmaceutical Science and Health Care, 4 (2): 67-82 (2014)

Medical devices are used extensively in many practice. This include devices used on a temporary, intermittent and long term basis. Transient or permanently implanted plastic devices are frequently the starting point of infection. A total number of 117 clinical isolates were recovered from 83 contaminated CVCs from ICUs hospitalized infants and adult patients of age up to 90 years. The majority of the isolates (about 92%) were Gram-negative rods, in addition to Gram-positive cocci and Yeast (4% each). The most prevalent contaminants were Acinetobacter baumannii (23%) followed by Pseudomonas aeruginosa (18%), Klebsiella pneumoniae (15%) and Enterobacter species (13%). Less common isolates were Acinetobacter lowffii (5%), Yeasts (4%), Providencia, Stenotrophomonas, Achromobacter, Proteus and Staphylococci (3% each), Pseudomonas fluorescens, Pseudomonas putida, Shewanellae, Serratia, Hafnia, Yersinia, Cedeceae and Micrococcus (1% each). Positive slime production was observed with about 72% of the Gram-negative isolates and one Candida tropicalis strain. Strong slime production was detected in 11 out of 23 Pseudomonas strains, 10 out of 33 Acinetobacter and 2 out of 18 Klebsiella strains. Among 32 antibiotics tested, the susceptibility pattern revealed that the most effective antibiotics were levofloxacin, imipenem and meropenem; 68, 67 and 67%, of Gram-negative isolates were affected, respectively. Among the affected isolates there were Pseudomonas aeruginosa, Acinetobacter baumannii and Klebsiella pneumoniae strains; highly resistant to other antibiotics. Minimum inhibitory concentration (MIC) to fluconazole was found to be 2 µg/ml. The absence or presence of adherent growth and biofilm formation on the catheter surface, to any degree, was confirmed by scanning electron microscopy; where heavy growth showed cottony like appearance. More basic research at the level of pathogenesis with in-vitro model for prevention and elimination of microbial colonization of CVC and modification of catheter materials is needed to design novel strategies
Keywords: Venous Catheter; Infections; ICUS'.

Dept. of Pharmaceutical Chemistry

191. Design, Synthesis and Molecular Docking of Novel N,N-Dimethylbenzenesulfonamide Derivatives As Potential Antiproliferative Agents

Mahmoud S. Bashandy, Mansour S. Alsaid, Reem K. Arafa and Mostafa M. Ghorab

J Enzyme Inhib Med Chem, 29 (5): 619-627 (2014) IF: 2.383

Novel pyridine, thiophene, thiazole, chromene and benzochromene derivatives bearing a N, N dimethylbenzenesulfonamide moiety 6 – 20 were synthesize . The target compounds were obtained through employing a series of heterocyclization reactions utilizing the key intermediate hydrazide hydrazone derivative 3. The structures of the newly synthesized compounds were confirmed by elemental analyses, IR, 1H-NMR and ^{13}C-NMR spectral data. All the newly synthesized compounds were evaluated for their in vitro antiproliferative activity against the human breast cancer cell line MCF-7. Biological screening results showed that sulfonamides 6, 9, 11, 16 and 17 with IC_{50} values 21.81, 25.50, 20.60, 25.83 and 31.20 mM, respectively, possessed higher antiproliferative

activity compared to doxorubicin, IC_{50} value 32.00 mM, as position control. Molecular docking study was also performed to assess the binding mode of the synthesized sulfonamides with their potential biomolecular target, carbonic anhydrase IX (CA IX), which is usually highly expressed in some types of cancer cells.

Keywords: Antiproliferative activity; CA IX; chromene,

192. Synthesis, Molecular Modeling and NAD (P) H: Quinone Oxidoreductase 1 Inducer Activity of Novel Cyanoenone and Enone Benzenesulfonamides

Mostafa M. Ghorab, Maureen Higgins, Mansour S. Alsaid, Reem K. Arafa, Abdelaaty A. Shahat and Albena T. Dinkova-Kostova

J Enzyme Inhib Med Chem, 29: 840-845 (2014) IF: 2.383

In biological systems, the Keap1/Nrf2/antioxidant response element pathway determines the ability of mammalian cells to adapt and survive conditions of oxidative, electrophilic and inflammatory stress by regulating the production of cytoprotective enzymes NAD (P) H:quinine oxidoreductase 1 (NQO1, EC 1.6.99.2) being one of them. Novel biologically active benzenesulfonamides 2, 3, 5–7, penta-2,4-dienamide 4 and chromene-2-carboxamide 8 structurally augmented with an electron-deficient Michael acceptor enone or cyanoenone functionalities were prepared. A new biological activity was conferred to these molecules, that of induction of NQO1. The potency of induction was increased by incorporation of a nitrile group adjacent to the enone and the dinitrophenyl derivative 3 was the most promising inducer. Also, molecular docking of the new compounds in the Nrf2-binding site of Keap1 was performed to assess their ability to inhibit Keap1 which biologically leads to a consequent Nrf2 accumulation and enhanced gene expression of NQO1. Docking results showed considerable interactions between the new molecules and essential binding site amino acids.

Keywords: Cytoprotection; electrophilicity; NQO1.

193. Molecular Modeling, Spectral, and Biological Studies of 4-Formylpyridine-^{4}N-(2-Pyridyl) Thiosemicarbazone (HFPTS) and its Mn(II), fe(III), Co(II), Ni(II), Cu(Ii),Cd(II), Hg(II), and Uo_2(II) Complexes

Nashwa M. El Metwally, Reem Arafa and Usama El-Ayaan

J Therm Anal Calorim, 115: 2357-2367 (2014) IF: 2.206

The present work describes the preparation and characterization of some metal ion complexes derived from 4-formylpyridine - 4 N-(2-pyridyl)thiosemicarbazone (HFPTS). The complexes have the formula ; [Cd(HFPTS) 2H2O]Cl2 , [CoCl2 (HPTS)] H2O , [Cu2Cl4(HPTS)]H2O, [Fe (HPTS)2Cl2] Cl3H2O , [Hg(HPTS) Cl2]4H2O, [Mn(HPTS)Cl2] 5H2O , [Ni(HPTS)Cl2] 2H2O, [UO2 (FPTS) 2(H2O)] 3H2O. The complexes were characterized by elemental analysis, spectral (IR , 1H-NMR and UV–Vis), thermal and magnetic moment measurements. The neutral bidentate coordination mode is major for the most investigated complexes. A mononegative bidentate for UO2(II), and neutral tridentate for Cu (II) . The tetrahedral arrangement is proposed for most investigated complexes. The biological investigation displays the toxic activity of Hg(II) and UO2(II) complexes , whereas the ligand displays the lowest inhibition activity toward the most investigated microorganisms.

Keywords: Thiosemicarbazone complexes Spectral Modeling Biological studies

194. Phenolics of Achillea Fragrantissima Growing in Egypt and its Cytotoxic Activity

Riham Omar Bakr, Reem Khedr Arafa, Ahmed Mohamed Al-Abd and Hisham Mohamed Elshishtawy

Journal of Medicinal Plant Research, 8 (21): 763-771 (2014)

Achillea fragrantissima Sch. Bip. (Asteraceae) has been reputed in folk medicine of the Arabia region and Egypt for the treatment of many diseases. Air dried aerial parts of A. fragrantissima were extracted with 70% aqueous ethanol and fractionated with petroleum ether, dichloromethane, n-butanol and ethyl acetate fractions. Among them, dichloromethane showed the highest activity and was subjected to separation and purification by various chromatographic techniques. Five flavones and one phenolic acid were isolated and identified as acerosin (1), cirsimaritin (2), cirsiliol (3), luteolin (4), apigenin (5) and caffeic acid (6), respectively. Acerosin, the flavone of higher concentration isolated for the first time in genus Achillea, showed promising cytotoxic and radical scavenging activity. Molecular modeling of acerosin indicated its ability to bind in a co-crystallized ligand-like manner with kinase enzyme (FAK), namely with Cys502, alongside extra binding interactions with Glu430, Lys454 and Asp564. Total protein profiling of A. fragrantissima DNA was performed using polyacrylamide gel electrophoresis (PAGE) for characterization of plant where the total number of bands recovered was 4.

Keywords: Acerosin; hepatocellular carcinoma; molecular modeling; DPPH; kinase enzyme (FAK).

Dept. of Pharmaceutical Technology and Industerial Pharmacy

195. Formulation and characterization of nanoliposomal 5-Fluorouracil for cancer nanotherapy

Aliaa Nabil Ahmed ElMeshad

J Liposome Res, 24(1): 1-9 (2014) IF: 1.822

A scalable and safe method was developed to prepare nanoliposome carriers for the entrapment and delivery of 5-fluorouracil (5-FU). The carrier systems were composed of endogenously occurring dipalmitoylphosphatidylcholine (DPPC), negatively charged dicetylphosphate (DCP), cholesterol (CHOL) and glycerol (3%, v/v). Nanoliposomes were prepared by the heating method in which no harmful chemical or procedure is involved. Results indicated fast and reproducible formation of non-toxic liposomes that possess high entrapment efficiency (up to 96.9%) and vesicle size range of ca. 530–620 nm. Transmission electron and optical micrographs of the 5-FU liposomes revealed that they were spherical and some were multilayered. There was an increase in the release rate of 5-FU from the liposomes prepared with a high ratio of drug:lipid. The release data showed that the highest release rates were obtained for nanoliposomes containing 5-FU with the drug concentration of 500mM and that it followed the diffusion model. Nanoliposome preparation method introduced here has the

potential of large-scale manufacture of safe and efficient carriers of 5-FU.
Keywords: Cancer nanotherapy; 5-fluoruracil; heatingmethod; lipid vesicles; transmission ;electron microscope.

196. Self-Nanoemulsifying Drug Delivery System for Sertraline Hydrochloride: Design, Preparation and Characterization

Hussein O. Ammar, Mahmoud M. Ghorab, Dina M. Mostafa and Amira M. Ghoneim

International Journal of Pharmacy and Pharmaceutical Sciences, 6 (9): 589-595 (2014) IF: 0.609

Objective: Development and characterization of self-nanoemulsifying drug delivery system for sertraline hydrochloride (SNEDDS).
Methods: Solubility of sertraline hydrochloride in various vehicles were determined, and ternary phase diagrams were constructed using a suitable oil, surfactant and cosurfactant system to find out the most efficient self emulsification system.
Results: Capmul® and Lauroglycol® were selected as an oil phase, Tween 80 and Cremophor® as surfactant and Transcutol® as cosurfactant due to their high solublization effect. Various formulations were prepared by simple mixing followed by vortexing. The systems were assessed for droplet size, light absorbance, drug release and emulsification effect. Optimized SNEDDS compositions of oil to surfactant/cosurfactant content did not show phase separation in 0.1N HCl and water, with droplet size varying from 21 nm to 153 nm, which indicates the formation of homogeneous stable nano emulsion in both media. In vitro dissolution data showed surprisingly significant enhancement of dissolution rate of sertraline HCl in form of SNEDDS compared to the drug per se.
Conclusion: These results confirm the potentiality of SNEDDS formulation to improve sertraline HClsolubilization and In vitro release.
Keywords: Self - nanoemulsifying drug delivery systems (SNEDDS) ; Sertraline HCl ; Surfactant ; Cosurfactant.

Dept. of Pharmacology and Toxicology

197. Hesperidin and Rutin, Antioxidant Citrus Flavonoids, Attenuate Cisplatin-Induced Nephrotoxicity in Rats

Kamel M. Kamel, Ola M. Abd El-Raouf, Salwa A. Metwally, Hekma A. Abd El-Latif and Mostafa E. El-sayed

J Biochem Molecular Toxicology, (2014) IF: 1.317

This study aimed to assess the protective effect of hesperidin (HES) and rutin (RUT) against cisplatin-induced nephrotoxicity in male rats. Cisplatin (5 mg/kg, intraperitoneal) caused significant increases in serum sodium, blood urea nitrogen, serum creatinine, total sodium and potassium excreted in urine, urine volume, and lipid peroxides measured as the malondialdehyde content of kidney, with significant decreases in serum total protein, creatinine clearance, reduced glutathione content of kidney, and kidney superoxide dismutase activity as compared with the control group.On the other hand, administration of HES (200 mg/kg, per oral [p.o.]) or RUT (30 mg/kg, p.o.) for 14 dayswith a single cisplatin dose on the tenth day ameliorated the cisplatin-induced nephrotoxicity as indicated by the restoration of kidney function and oxidative stress biomarkers. Furthermore, the test drugs reduced the histopathological changes induced by cisplatin. In conclusion, HES and RUT showed protective effects against cisplatin-induced nephrotoxicity. C 2014 Wiley Periodicals, Inc. J. Biochem. Mol. Toxicol. 00:1–8, 2014; View this article online at wileyonlinelibrary.com.
Keywords: Hesperidin; Rutin; Antioxidant; Cisplatin; Nephrotoxicity

198. Pharmacological Evaluation of the Methanolic Extract of Tribulus Bimucronatus Growing in Saudi Arabia in Rats

Shoeib N, Hassan M and Abd El-Latif H.A.

International Journal of Pharmacognosy and Phytochemical Research, 6(4): 913-916 (2014)

The methanolic extract of Tribulus bimucronatus (Zygophyllaceae) growing in Saudi Arabia was screened using albino rats in a dose of 100, 200 & 400 mg/kg of body weight.The tail cuff for hypotensive, the hot plate for the antinociceptive and the carrageenan-induced rat paw edema method for the anti-inflammatory activity were adopted. The results revealed a significant dose-dependent anti-inflammatory activity. Furthermore marked hypotensive and antinociceptive effect were observed at the higher dose (400 mg/kg).Tribulus bimucronatus is shown to be a promising plant and may be comparable to the famous Ayurvedic Tribulus teresteris from which commercial products are available.
Keywords: Tribulus bimucronatus; Hypotensive activity; Antinociceptive activity; Anti-inflammatory activity.

The National Cancer Institute

Dept. of Radiation Oncology

199. Assessment of air Pockets in High-Dose-Rate Vaginal Cuff Brachytherapy Using Cylindrical Applicators

Ashraf Hassouna, Yasir Abdulaziz Bahadur and Camelia Constantinescu

Journal of Contemporary Brachytherapy, 6: 271-275 (2014)

Purpose: To retrospectively assess the incidence and magnitude of air pockets around vaginal cylinders and its impact on dose distribution in vaginal cuff image-guided high-dose-rate (HDR) brachytherapy. Material and methods: Fifty endometrial carcinoma patients treated by postoperative HDR vaginal cuff brachytherapy were included in the study. The average age of patients was 58.3 ± 11.8 years (range: 31-87 years). Brachytherapy was performed using cylindrical applicators, and the dose prescribed to 0.5 cm from the applicator's surface, over a length of 5 cm from the applicator's tip. Computed tomography (CT) simulation was used for each brachytherapy fraction. The incidence, vaginal mucosa displacement, volume, and dosimetric effect of air pockets around the vaginal cylinder were evaluated. **Results:** A total of 78 air pockets were found in 29/50 patients (58%) and 45/135 (33%) brachytherapy plans. They were located at the apex: 16/78 (20%) and lateral to the applicator: 62/78 (80%). The volume of air pockets ranged be- tween 0.01 and 2.1 cm3 (mean: 0.15 cm3 ± 0.36 cm3), and the maximum displacement of vaginal mucosa from cylinder surface was between 0.1 and 1.09 cm (mean: 0.34 cm ± 0.2 cm). The dose reduction to the vaginal mucosa generated by the air pockets ranged from 0.5 to 66% (mean: 26.4% ± 13.9%).
Conclusions: The presence of air pockets around vaginal cylinder applicators is frequently noticed in post-operative vaginal cuff brachytherapy. The dose to the vaginal mucosa is reduced, as a result of displacement generated by air pockets. The effect on the clinical outcome of this dose reduction is yet to be determined.
Keywords: Air pockets; Brachytherapy cylinder; Endometrial carcinoma; Vaginal brachytherapy.

200. Single versus Multichannel Applicator in High-Dose-Rate Vaginal Brachytherapy Optimized by inverse Treatment Planning

Yasir A. Bahadur, Camelia Constantinescu, Ashraf H. Hassouna, Maha M. Eltaher, Noor M. Ghassal and Nesreen A. Awad

Journal of Contemporary Brachytherapy, 6: 362-370 (2014)

Purpose: To retrospectively compare the potential dosimetric advantages of a multichannel vaginal applicator vs. a single channel one in intracavitary vaginal high-dose-rate (HDR) brachytherapy after hysterectomy, and evaluate the dosimetric advantage of fractional re-planning. Material and methods: We randomly selected 12 patients with endometrial carcinoma, who received adjuvant vaginal cuff HDR brachytherapy using a multichannel applicator. For each brachytherapy fraction, two inverse treatment plans (for central channel and multichannel loadings) were performed and compared. The advantage of fractional re-planning was also investigated. Results: Dose-volume-histogram (DVH) analysis showed limited, but statistically significant difference (p = 0.007) regarding clinical-target-volume dose coverage between single and multichannel approaches. For the organs-at-risk rectum and bladder, the use of multichannel applicator demonstrated a noticeable dose reduction, when compared to single channel, but statistically significant for rectum only (p = 0.0001). For D2cc of rectum, an average fractional dose of 6.1 ± 0.7 Gy resulted for single channel vs. 5.1 ± 0.6 Gy for multichannel. For D2cc of bladder, an average fractional dose of 5 ± 0.9 Gy occurred for single channel vs. 4.9 ± 0.8 Gy for multichannel. The dosimetric benefit of fractional re-planning was demonstrated: DVH analysis showed large, but not statistically significant differences between first fraction plan and fractional re-planning, due to large inter-fraction variations for rectum and bladder positioning and filling. Conclusions: Vaginal HDR brachytherapy using a multichannel vaginal applicator and inverse planning provides dosimetric advantages over single channel cylinder, by reducing the dose to organs at risk without compromising the target volume coverage, but at the expense of an increased vaginal mucosa dose. Due to large inter-fraction dose variations, we recommend individual fraction treatment plan optimization.
Keywords: Endometrial cancer; Inverse planning; Multichannel applicator; Vaginal brachytherapy.

Dept. of Tumor Biology

201. S6 Kinase 2 is Bound to Chromatin-Nuclear Matrix Cellular Fractions and is Able to Phosphorylate Histone H3 at Threonine 45 in Vitro and in Vivo

Heba M.S. Ismail, Paul J. Hurd, Mahmoud I.M. Khalil, Tony Kouzarides, Andrew Bannister and Ivan Gout

Journal of Cellular Biochemistry, 115: 1048-1062 (2014)
IF: 3.368

The activity of S6 kinases (S6K) is highly induced in cancer cells highlighting an essential role in carcinogenesis. The S6K family has two members: S6K1 and S6K2 which bear common as well as distinct features. In an attempt to identify S6K2 unique sequence features compared to S6K1, we applied extensive bioinformatic analysis and motif search approaches. Interestingly, we identified 14 unique protein signatures which are present in proteins directly connected to chromatin and/or involved in transcription regulation. Using chromatin binding assay, we biochemically showed that S6K2 is bound to chromatin as well as nuclear matrix cellular fractions in HEK293 cells. The presence of S6K2 in chromatin fractions raised the possibility that it may be in close proximity to a number of chromatin substrates. For that, we then searched for S6K phosphorylation consensus sites RXRXXT/S in mammalian proteins using the SWISS-PROT database. Interestingly, we identified some potential phosphorylation sites in histone H3 (Thr45). Using in vitro kinase assays and siRNA-based knockdown strategy; we confirmed that S6K2 but not S6K1 or AKT is essential for histone H3-Thr45 phosphorylation in HEK293 cells. Furthermore, we show that the nuclear localisation sequence in the S6K2 C-terminus is essential for this modification. We have found that, H3-Thr45 phosphorylation correlates to S6K activation in response to mitogens and TPA-induced cell differentiation of leukaemic cell lines U937, HL60 and THP1. Overall, we demonstrate that S6K2 is a novel kinase that can phosphorylate histone H3 at position

Thr45; which may play a role during cell proliferation and/or differentiation.
Keywords: Chromatin; H3 phosphorylation; S6k2.

202. Effect of Some Differentiation-Inducing Agents on wild Type Fragment-1(Waf-1)/P^{21} and cycline D1 (CD1) Expressions in Leukemic Cells Propagated Ex-Vivo

Motawa E. El-Houseini, Eman R. Amer, Mohamed A. Elhefny, Heba Mohammed and Hani H. Mohammad

International Journal of Pharmaceutical Science and Health Care, 3 (4): 61-71 (2014) IF: 3.11

Leukemia is a disease of the blood or bone marrow, which is characterized by increased numbers of abnormal white blood cells. The abnormality of leukemic cells lies in their inhibited differentiation and increased proliferation rate. A very attractive way to treat leukemia was proposed as in vitro studies have shown that a variety of agents stimulate differentiation of the cell lines isolated from leukemic patients. This work aims to study the effects of some differentiation inducing agents (DIAs) on genes expression of wild type Fragment-1(Waf-1)/ P21 and Cycline D1 (CD1)in leukemic cells from acute myloid leukemia (AML) patients and propagated ex-vivo for 72hr., as compared with normal Leukocytes obtained from normal persons matching ages with the patients. We found that trans- retinoic acid (t-RA) [1M] alone or in combination with sodium butyrate (NaBu) [1mM] and dibutyryl-cAMP (But-cAMP) [1mM] have led to down-regulation of CD1 gene expression in leukemic cells cultured for 72hr. On the contrary up-regulation of WAF1 (P21) gene in those cells was found to be observed with the same condition. Meanwhile in normal leukocytes, the expressions of the previous mentioned gene classes did not change due the treatment with DIAs.
Conclusion: DIAs could open new avenues of novel therapy for those patients suffering from AMLby restoring the homeostatic function of the genome of the leukemic cells.
Keywords: Leukemic cells; CD1; WAF (P21) gene expressions; DIAs; Trans- retinoic acid; Dibutyryl; CAMP; Sodium butyrate

Faculty of Physical Therapy

Dept. of Physical Therapy for Growth and Developmental Disorder

203. The Clinical Impact of Orthotic Correction of Lower Limb rotational deformities in children with Cerebral Palsy: a Randomized Controlled Trial

Ehab Mohamed Abd El-Kafy

Clinical Rehabilitation, 28 (10): 1004- 1014 (2014) IF: 2.18

Objective: This study aimed to evaluate the effectiveness of a static ground reaction ankle foot orthosis and strapping system on improving gait parameters in children with spastic diplegic cerebral palsy. Setting: The current study was conducted at the physical therapy faculty of Cairo University, Egypt.
Subjects: This study included 57 children of both sexes, aged 6 to 8 years.
Study design: Three-armed randomized control trial. Intervention: Participants in all groups received a traditional neuro-developmental physical therapy program that included standing and gait training exercises. Children in group A performed the training program without any orthotic management, in group B with the TheraTogs™ strapping system, and in group C with the TheraTogs™ strapping system and static ground reaction ankle foot orthoses. Children underwent treatment for two hours daily, except on weekends, for twelve successive weeks.
Main measure: Gait speed, cadence, stride length, and hip and knee flexion angles in the mid-stance phase were evaluated pre- and post-treatment using a three-dimensional motion analysis system (pre- reflex system).
Results: Statistically significant differences were recorded among the three groups post-treatment in gait speed, cadences, and stride length. The P-values for these variable differences were 0.03, 0.011, and 0.001 respectively. Significant post-treatment differences were also recorded for bilateral hip-and knee-flexion angles. For all measured parameters, better significant results were registered for group C than for the other groups.
Conclusion: Orthotic intervention composed of a static ground reaction ankle foot orthosis combined with the TheraTogs™ strapping system improves gait more than conventional treatment with or without TheraTogs™ in children with spastic diplegic cerebral palsy.
Keywords: Cerebral palsy; Femoral anteversion; Tibial torsion; ankle foot orthosis; TheraTog™.

204. Effect of Extracorporeal Shock wave Therapy on Gait Pattern in Hemiplegic Cerebral Palsy

Shamekh Mohamed El-Shamy, Mohamed Ahmed Eid and Mohamed Fawzy El-Banna

American Journal of Physical Medicine and Rehabilitation, 93 (12): 1065-1072 (2014) IF: 2.012

Objective: The aim of this study was to investigate the effects of shock wave therapy on gait pattern in children with hemiplegic cerebral palsy.
Design: Fifteen children were assigned to the study group, whose members received shock wave therapy (1500 shots/muscle, frequency of 5Hz, energy of 0.030 mJ/mm2, one session/wk). Another 15 were assigned to the control group, whose members participated in a conventional physical therapy exercise program for 3 successive months. Baseline and posttreatment assessments were performed using the Modified Ashworth Scale to evaluate spasticity degrees and using a three-dimensional gait analysis to evaluate gait parameters.
Results: Children in the study group showed a significant improvement when compared with those in the control group ($P < 0.005$). The Modified Ashworth scores after treatment were 1.86 (0.22) and 1.63 (0.23) for the control and study groups, respectively. The gait parameters (stride length, cadence, speed, cycle time, and stance phase percentage) after treatment were 0.5 m, 125 steps/min, 0.6 m/sec, 0.48 sec, and 50.4% and 0.74 m, 119 steps/min, 0.75 m/sec, 0.65 sec, and 55.9% for the control group and the study group, respectively.
Conclusions: Shock wave therapy may be a useful tool for improving spasticity and gait pattern in children with hemiplegic cerebral palsy.
Keywords: Extracorporeal Shock Wave Therapy; Cerebral Palsy; Hemiplegia; Gait.

205. Effect of Postural Balance Training on Gait Parameters in Children with Cerebral Palsy

Ehab Mohamed Abd El-Kafy and Heba M.Youssr M. El-Basatiny

American Journal of Physical Medicine & Rehabilitation, 93(11): 938-947 (2014) IF: 2.012

Objective: The aim of this study was to evaluate the effect of dynamic bilateral postural stability on balance control and gait parameters in children with cerebral palsy.
Design: Thirty children with spastic diplegia (8-10 yrs) were included in this study. The children were randomly assigned into two groups: control group A and study group B. The children in both groups received traditional physical therapy program, 2 hrs per day for group A and 1.5 hrs followed by 30 mins of dynamic postural stability training program using the Biodex Stability System for group B. The treatment frequency was three sessions per week for 8 consecutive weeks on two stability levels (7 and 8). The participating children received pretreatment and posttreatment assessments using the Biodex Stability System to evaluate the stability indices (anteroposterior, mediolateral, and overall) at the two stability levels (7 and 8) and three-dimensional motion analysis system (pro-reflex system) to evaluate the spatiotemporal parameters including step length, velocity, cycle time, stance, and swing phase percentage.
Results: The children in both groups showed significant improvements in the mean values of all measured variables after treatment indexed by a significant reduction in stability indices and improvement in gait parameters. The results also showed significant differences in all measured parameters in favor of group B, when compared with those in group A ($P < 0.01$).
Conclusions: Balance training on the Biodex Stability System could be a useful tool in conjunction with traditional physical therapy program for improving balance control and gait functions in children with spastic diplegic cerebral palsy
Keywords: Cerebral Palsy; Balance; Gait.

206. Effect of Whole-Body Vibration on Muscle Strength and Balance in Diplegic Cerebral Palsy

Shamekh Mohamed El-Shamy

American Journal of Physical Medicine and Rehabilitation, 93 (2): 114-121 (2014) IF: 2.012

Objective: The purpose of this study was to investigate the effects of whole-body vibration training on muscle strength and balance in children with diplegic cerebral palsy.
Design: Fifteen children were assigned to the experimental group, which received whole-body vibration training (9 mins per day, 5 days per week). Another 15 were assigned to the control group, which participated in a traditional physical therapy exercise program for 3 successive months. Baseline and posttreatment assessments were performed using the Biodex isokinetic dynamometer to evaluate the knee extensors peak torque at 60 degrees per second and 90 degrees per second and using the Biodex balance system to evaluate stability index.
Results: The children in the experimental group showed a significant improvement when compared with those in the control group ($P < 0.001$). The peak torque at 60 degrees per second and 90 degrees per second after treatment was 28.8 ± 0.45 and 47.5 ± 0.7 N · m and 30.9 ± 0.68 and 54.2 ± 1.7 N · m for the control and the experimental group, respectively. The overall stability index after treatment was 2.75 and 2.2 for the control group and the experimental group, respectively.
Conclusions: Whole-body vibration training may be a useful tool for improving muscle strength and balance in children with diplegic cerebral palsy.
Keywords: Whole-Body Vibration; Diplegia; Muscle Strength; Balance.

207. Effect of Balance Training on Postural Balance Control and Risk of fall in Children with Diplegic Cerebral Palsy

Shamekh Mohamed El-Shamy and Ehab Mohamed Abd El Kafy

Disability and Rehabilitation, 36 (14): 1176-1183 (2014) IF: 1.837

Purpose: The purpose of this study was to evaluate the effects of balance training on postural control and fall risk in children with diplegic cerebral palsy.
Methods: Thirty spastic diplegic cerebral palsied children (10–12 years) were included in this study. Children were randomly assigned into two equal-sized groups: control and study groups. Participants in both groups received a traditional physical therapy exercise program. The study group additionally received balance training on the Biodex balance system. Treatment was provided 30 min/d, 3 d/week for 3 successive months. To evaluate the limit of stability and fall risk, participated children received baseline and post-treatment assessments using the Biodex balance system. Overall directional control, total time to complete the test, overall stability index of the fall risk test and total score of the pediatric balance scale were measured.
Results: Children in both groups showed significant improvements in the mean values of all measured variables post-treatment (p 5 0.05). The results also showed significantly better improvement in the measured parameters for the study group, as compared to the control group (p 5 0.05).
Conclusion: Balance training on Biodex system is a useful tool that can be used in improving postural balance control in children with diplegic cerebral palsy.
Keywords: Balance training; Cerebral palsy; fall risk; limit of stability; postural control.

208. Effect of Rowing on Pulmonary Functions in Children with Down Syndrome

Ehab Mohamed Abd El Kafy and Omar Farouk Helal

Pediatric Physical Therapy, Winter; 26(4): 437-445 (2014) IF: 1.035

Purpose: To examine effects of a rowing exercise regimen versus a chest physical therapy program on pul- monary function in children with Down syndrome.
Methods: Twenty-nine participants of both sexes, between 8 to 12 years of age, participated in this study. They were assigned randomly into 2 study groups. The frst group (A) received a chest physical therapy program, while the second group (B) received an aerobic exercise regimen using a rowing ergometer. Vital capacity, forced vital capacity, forced expiratory volume after 1 second, and peak expiratory ?ow rate were measured before and after 12 successive weeks of treatment.
Results: Significant improvements in all measured variables were found posttreatment in both study groups. No signi?cant difference between the 2 groups was found posttreatment.
Conclusion: Rowing exercise could be effective in improving pulmonary functions in children with Down syndrome.
Keywords: Aerobic exercise; Child; Down syndrome; Physical therapy / breathing exercises; Respiratory function; Respiratory function tests.

International Publications Awards
Cairo University

(4)
Social Sciences Sector

4-1 Faculity of Economics and Political Science
4-2 Faculty of Commerce

Faculty of Economics and Political Science

Dept. of Economics

209. Risky Behavior Among Youths In Egypt: Theoretical Underpinnings, Classification And Determinants

Marwa Mohamed Shibl Biltagy

Procedia-Social And Behavioral Sciences, 132: 43-48 (2014)

This paper focuses on studying the issue of risky behavior among youths in Egypt. Risky behavior is considered one of the most pressing of current social problems. Of particular concern is the increase in delinquency among young people.
Given the significant social concern surrounding the problem of youth delinquency, it is reasonable for policy makers, academics and citizens to ask what might cause misbehavior. The methodology of this paper is based on studying and analyzing the topic of risky behavior among youths by clarifying the concept, introducing its classification and identifying its determinants depending on the literature review on different models that explain risky behavior among youths.
Additionally, a designed questionnaire is used in order to identify the classification and the determinants of risky behavior, particularly drug use, in Egypt.
Keywords: Risk prefernces; Risky behavior; Youths; Egypt.

Dept. of Political Science

210. Why Did The Muslim Brotherhood Fail? The Double-Faced Discourse Of Ikhwan And Political Response To Islamist-Secular Diversity In Egypt

Rehab Abdelghany Abdelsalam Ahmed Sakr

Danubius, 32: 75-86 (2014)

Brotherhood reached political power when one of its members held the presidency in Egypt after the presidential elections of 2012. One year after being in power, another revolution unwounded against the Muslim brotherhood's president, on the 30th of June .2013 The Muslim Brotherhood، by the end of 1990s and the beginning of 2000s has launched two internet websites: Arabic and English and used to adopt double faced discourse to attract supporters from different political attitudes, namely Islamists and secularists. This paper argues that one of the important reasons behind the failure of the Muslim Brotherhood In Egypt is that it failed after it came to power to transform its double faced discourse into policies. Decisions and policies of the Muslim Brotherhood were contradictive and did not satisfy any side, after a short while, the group lost all its allies.
Keywords: Muslim Brotherhood, Internet Activism, Egypt.

Dept. of Statictics

211. Nile Water Pollution And Technical Efficiency Of Crop Production In Egypt: An Assessment Using Spatial And Non-Parametric Modelling

Hala Abou- Ali and Amira El-Ayouti

Environmental and Ecological Statistics, 21(2): 221-238 (2014) IF: 0.972

Agriculture is considered one of the vital activities in Egypt; it consumes about 83 % of the Egyptian Nile water quota. This activity is becoming negatively affected by water pollution causing negative repercussion on land productivity and subsequently food security. This paper assesses the water quality for agriculture along the mainstream of the Nile in Egypt through spatial distributions modelling of total dissolved solids (TDS), using spatial statistical analysis. The study's sample frame consists of 78 sampling points collected in February 2008 and located on the Nile mainstream and its two branches, Rosetta and Damietta. Exploratory spatial data analysis is carried out on the TDS, followed by plotting and modelling the experimental semi-variogram.Then, cross validation is executed in order to determine the best fitting model. Finally, surface mapping is generated by performing spatial interpolation, using kriging technique. The generated surface map shows that the TDS levels increase from Upper to Lower Egypt, exceeds the standard limit in Beni-Suef and Rosetta branch. In fact, high levels of TDS are known to have a negative effect on Egyptian agriculture through harmfully affecting the soil and consequently the crop yields. Therefore, an analysis of the effect of water pollution on technical efficiency of crop production is conducted using a non-parametric mathematical programming approach to frontier estimation. The results of this estimation indicated that the TDS is overutilized in all governorates except Aswan.
Keywords: Kriging Non-Parametric Frontier Modelling Semi-Variogram Spatial Modelling Technical Efficiency Total Dissolved Solids (TDS).

212. Likelihood Inference for A Step-Stress Partially Accelerated Life Test Model With Type-I Progressively Hybrid Censored Data from Weibull Distribution

Ali Ahmed Mohamed Ismail

Journal of Statistical Computation And Simulation, 84: 2486-2494 (2014) IF: 0.713

Recently, progressively hybrid censoring schemes have become quite popular in life testing and reliability studies. In this article, the point and interval maximum-likelihood estimations of Weibull distribution parameters and the acceleration factor are considered. The estimation process is performed under Type-I progressively hybrid censored data for a step-stress partially accelerated test model. The biases and mean square errors of the maximum-likelihood estimators are computed to assess their performances in the presence of censoring developed in this article through a Monte Carlo simulation study.
Keywords: Reliability; Step-Stress Partially Accelerated Life Test;Weibull Distribution; Maximum Likelihood.

213. Estimation Under Fall..Ure-Censored Step-Stress Life Test for the Generalized Exponential Distribution Parameters

Ali Ahmed Mohamed Ismail

Indian Journal Of Pure & Applied Mathematics, 45: 1003-1015 (2014) IF: 0.711

Accelerated life testing of materials is used to collect failure data quickly when the lifetime of a specimen under use condition is

too long. lbis atticle considers estimates of the generalized exponential distribution patameters under step-stress pattially accelerated life testing with Type-IT censoring. The maximum likelihood approach is applied to derive point and asymptotic confidence interval estimations of the model parameters. The performance of the estimators is evaluated numerically for different pammeter values and different sample sizes via their mean square error. Also, the average confidence intervals lengths and the associated coverage probabilities are obtained. A simulation study is conducted for illustration.

Keywords: Step-Stress Pattially Accelerated Life Tests; Maximum Likelihood Estimation; Mean Square Error; Confidence Interval And Coverage Probability; Type-Ii Censoring; Monte Carlo Simulation.

214. Recurrence Relations for the Moments of Order Statistics from Doubly Truncated Modified Makeham Distribution and its Characterization

Ali Ahmed Mohamed Ismail

Journal Of King Saud University – Science, 26: 200-204 (2014)

In this study a general form of recurrence relations of continuous function for doubly truncated modified Makeham distribution is obtained. Recurrence relations between single and product moments of order statistics from doubly truncated modified Makeham distribution are given. Also, a characterization of modified Makeham distribution from the right and the left is discussed through the properties of order statistics

Keywords: Modified Makeham Distribution; Bution; Bathtub Hazard Rate Function; Single And Product Moments; Order Statistics; Recurrence Relations; Characterization.

Faculty of Commerce

Dept. of Accounting

215. Auditors'' Perceptions of Audit Firm Rotation Impact on Audit Quality in Egypt

Ahmed Anis Ahmed Hussein

Accounting & Taxation, 6: 105-120 (2014)

This study aims to explore professional auditors' perceptions of the impact of audit firm rotation on audit quality. It also investigates the possible benefits and determining factors of mandatory auditor rotation. A sample of 83 auditors was drawn from a group of large firms and another of smaller firms in Egypt. Data were analyzed using one sample t-test; the findings indicate that auditors' perceived mandatory rotation of auditors to have a positive effect on audit quality, a negative effect on client-specific knowledge, and a positive impact on auditors' independence. The impact from the auditors' perspective of industry specialization and fee dependence on the relationship between mandatory auditor rotation and audit quality was also determined.
Keywords: Mandatory Auditor Rotation; Audit Quality; Auditor's Independence; Egypt.

216. E-Business Internal Audit: The Elephant is Still in the Room!

Amr Mohamed Kotb

Journal Of Applied Accounting Research, 15: 43-63 (2014)

Purpose: The purpose of this paper is to explore the impact of technological change on the internal audit practices and skills requirements for internal auditors in an e-business environment.
Design/methodology/approach: Generalist internal auditors and specialist information technology (IT) internal auditors were surveyed online in ten countries, including the USA and the UK which, together, provided the majority of responses.
Findings: The results suggest a need for advanced IT-audit techniques in conducting the internal audit function, thereby increasing IT audit skill demands on generalist internal auditors. However, the results show a low confidence among internal auditors about their IT training and a continuing reliance upon IT audit specialists, rather than their own training/retraining.
Research limitations/implications: The responses obtained in this study provide insight into both the status quo of the internal audit function, and to the changes that are needed to prepare generalist internal auditors for work in an e-business environment and, while the scale of the study limits the extent to which the findings may be generalized, they are consistent with the literature concerning the changing business environment and with the literature on resistance to change, suggesting that the issues revealed should be of concern.
Practical implications: The results reported in this paper are useful to internal auditing educators and regulators in their consideration of the skills needed by generalist internal auditors in e-business environment.
Originality/value: This study sheds light on a significantly growing area which remains relatively unexplored in the auditing-related literature, e-business audit. The study provides empirical evidence on challenges facing internal auditors in an e-business environment, thereby serving as a wake-up call, to both internal auditors and the professional bodies representing them, to defend their jurisdictional space against rival professional groups.
Keywords: E-Commerce, E-Business, Internal Audit, It Audit, Resistance To Change.

(5)
Humanity
Sciencec Sector

5-1 Faculity of Arts
5-2 Faculty of Archaeology

Faculty of Arts

Dept. of English Language and its Literature

217. Stories/Storytelling for Women"s Empowerment/ Empowering Stories

Mona Ibrahim Ali

Women's Studies' International Forum, 45: 98-104 (2014) IF: 0.398

The aim of this paper is to introduce and analyze the "Stories/Storytelling for Change" Project by the "I am the Story" Group that was held under the auspices of the Pathways of Women's Empowerment Project. The paper describes the methodologies used in holding two re/writing workshops using social and anthropological research as raw material for the writing. Another aim of this methodology paper is to propose that creative writing and storytelling can be effectively used as advocacy tools in gender training workshops. Works of art are maintained to help participants in gender training workshops to acquire gender knowledge and to write gender sensitive stories in the most subtle of ways. The subtlety of a good work of art is claimed to help feminist issues to sink in an effective way as it helps suspend participants' resistance to new ideas about gender stereotyping and traditional gender roles that oppress both men and women in the Egyptian society. One of the main aims of the paper is also to demonstrate how storytelling performances including the stories written in the workshops can help disseminate discussions and revisions of gender issues to wider audiences who would not know about these issues in other different ways.

Keywords: Storytelling; Youth; Women; Empowerment; Gender education.

Dept. of Greek and Latin Studies and its Literature

218. Two Epithets of Mark the Evangelist: Coptic ⲟⲉⲱⲣⲓⲩⲟⲥ and Byzantine Greek θεόπτης

Sameh Farouk Soliman

Greek, Roman & Byzantine Studies, 54/3: 494-506 (2014) IF: 9.977

The article discusses the use of Greek loanwords in the Coptic language, focusing on epithets used to describe Saint Mark the Evangelist in the Coptic Church. Issues addressed include the etymology of the epithets, the role of Mark in various Biblical stories of Jesus Christ, and the idea, presented by the writer Papias of Hierapolis, that Mark may not have been one of the original disciples of Jesus.

Keywords: Language; Foreign words; Phrases; Coptic language greek language; Terms; Phrases; Epithets; Etymology; Apostles.

Faculty of Archaeology

Dept. of Conservation

219. Insecticidal Activity of Cinnamomum Cassia Extractions Against the Common Egyptian Mummies' Insect Pest (Dermestes Maculatus)

Abdel-Maksoud, Gomaa; EL-Amin, Abdel-Rahman; Afifi, Fathy

International Journal of Conservation Science, 5: 355-368 (2014)

Dermestes maculatus is considered the responsible of the most serious pests which caused damage to Egyptian mummies. Hexane, petroleum ether, chloroform, acetone and ethanol extracts from Cinnamomum cassia were tested for their insecticidal activities against Dermestes maculatus larvae isolated from Egyptian mummies. Responses varied according to type of solvent, concentrations and exposure time. The results showed that the chloroform extract from Cinnamomum cassia was the most effective one at the lethal concentration (LC) 25,50,75,90,95 99& levels against Dermestes maculatus larvae. The data also showed that the Chloroform extract at any concentration realized complete mortality after a period that did not exceed 5, 8, 10, 13, 16 days with petroleum ether, hexane, acetone and ethanol respectively.

Keywords: Mummy; Cinnamomum Cassia; Dermestesmaculatus; Biological Activity; Extracts

220. Technical Examination and Restoration of the Stucco Decorations of Al Hasawaty Mihrab, Fatimid Period, Cairo, Egypt

KAMEL, Abdullah M. A.; MARIE, Hassan A. H.; MAHMOUD, Hala A. and ALI, Mona F.

International Journal of Conservation Science, Volume 5, Issue 4,: 469-478 (2014)

Stucco mihrabs in Islamic buildings suffer from many causes of deterioration, mainly ground water and salt weathering, which have caused complete loss of the decorations of some stucco mihrabs and have left others in need of restoration and conservation ،so finding a solution for this problem becomes ever more urgent. Al Hasawaty stucco mihrab is an important monument, and is in serious need of restoration and conservation, which should be done in the light of examination and chemical analysis of the stucco material, support and degree of deterioration. The conservation and restoration of the stucco decoration involves the historical documentation of the Al Hasawaty Mausoleum, a condition survey, a measured survey، examination of the stucco decoration, the support and deterioration aspects. In addition the following are needed: mechanical and chemical cleaning, adhesion of detached parts of decorations, grout injection, replacement of the Portland cement plaster with porous lime plaster (disposable layer ،(mechanical strengthening with mortar and chemical treatment with a consolidant.

Keywords: Cleaning; Consolidation; Gypsum; Lime; Stucco; Deterioration; Mihrab.

221. Why Did Ancient People Have Atherosclerosis? From Autopsies to Computed Tomography to Potential Causes

Gregory S. Thomas, L. Samuel Wann, Adel H. Allam, Randall C. Thompson, David E. Michalik, M. Linda Sutherland, James D. Sutherland, Guido P. Lombardi, Lucia Watson, Samantha L. Cox, Clide M. Valladolid, Gomaa Abd el-Maksoud, Muhammad Al-Tohamy Soliman, Ibrahem Badr, Abd el-Halim Nur el-din, Emily M. Clarke, Ian G. Thomas, Michael I. Miyamoto, Hillard S. Kaplan, Bruno Frohlich, Jagat Narula, Alexandre F.R. Stewart, Albert Zink and Caleb E. Finch.

Global Heart, 9: 229-237 (2014)

Computed tomographic findings of atherosclerosis in the ancient cultures of Egypt, Peru, the American Southwest and the Aleutian Islands challenge our understanding of the fundamental causes of atherosclerosis. Could these findings be true? Is so, what traditional risk factors might be present in these cultures that could explain this apparent paradox? The recent computed tomographic findings are consistent with multiple autopsy studies dating as far back as 1852 that demonstrate calcific atherosclerosis in ancient Egyptians and Peruvians. A nontraditional cause of atherosclerosis that could explain this burden of atherosclerosis is the microbial and parasitic inflammatory burden likely to be present in ancient cultures inherently lacking modern hygiene and antimicrobials. Patients with chronic systemic inflammatory diseases of today, including systemic lupus erythematosus, rheumatoid arthritis, and human immunodeficiency virus infection, experience premature atherosclerosis and coronary events. Might the chronic inflammatory load of ancient times secondary to infection have resulted in atherosclerosis? Smoke inhalation from the use of open fires for daily cooking and illumination represents another potential cause. Undiscovered risk factors could also have been present, potential causes that technologically cannot currently be measured in our serum or other tissue. A synthesis of these findings suggests that a gene-environmental interplay is causal for atherosclerosis. That is, humans have an inherent genetic susceptibility to atherosclerosis, whereas the speed and severity of its development are secondary to known and potentially unknown environmental factors.

Keywords: Atherosclerosis; Mummies; Ct-Scan.

Dept. of Egyptian Archaeology

222. Asolar Hymn Ostracon from Deir El-Bahri

Khaled Hassan Abd el-Aziz

Bulletin De L'institut Français D'archéologie Orientale, Bifao, (2014)

The ostracon under discussion is currently stored in the basement of the Egyptian Museum in Cairo (no. 467).2 Unfortunately, there is no documented data concerning its provenance، except that it was found among a group of hieratic ostraca originating from Deir el-Bahari. It represents a Hymn to the first hour of the day. The other known parallels of such a text were usually written in hieroglyphs on the walls of tombs or temples, as well as in a very few cases on statues. Thus, it is the first attestation of this text copied on an ostracon. This paper will try to shed more light on the text itself and its function on this kind of material. A dating will also be proposed in comparison with the other known parallels.

Keywords: Solar Hymn- Deir Elbahri- Retrograde Writing.

Dept. of Islamic Archaeology

223. Models of Artifacts with Architectural Decorations Attributed to Khokand During 13-14Th /19-20 Th Centuries

Huda Salah El-Deen Omar Mohamed

The Islamic Quarterly, 58: 29-46 (2014)

Khokand was famous for many crafts during 13th/19th century, the most important of which was metalwork. artifiacers produced many objects of varied shape , size and use . they excelled informing these objects and decorating them in different artistic and technical ways.

Perhaps the most important thing that proves this is what travellers mentioned about the bazaar in khokand, which was full of artistic products made locally or in such central asian cities as bukhara and samarkand, as well as chinese imports the craftsmen paid great attention to decoration. these decoration varied, including floral motifs, the important and ubiquitous arabesque and other geometric devices.

The metal-workers in khokand were famed for architectural decoratins in that they excelled in representing one of the most important building in khokand, khudayar khan palace 1287/1871, espectially on brass trays.

Keywords: Khokand; Architectural decoratins; Khokand; Khudayar khan palace; Brass trays.

CAIRO UNIVERSITY

Publicatin in Book & Chapters

Puplication in Book/ Chapter

Faculty of Science

Dept. of Mathematics

224. Boundary Integral Formulation of the Plane Problems of Thermoelastostatics

A. F. Ghaleb and Moustafa Saber Abou-Dina

Encyclopedia of Thermal Stresses, Springer, (2014)

The theory of thermoelasticity has many applications in various problems of engineering, environment‹ and biology, for example, problems of aircraft, chemical and mechanical engineering‹ and geothermal effects, and in the different situations where the heat effects cannot be neglected. This is true, in particular, in conductors of electricity‹ where the contribution of Joule heat cannot‹ in general, be disregarded.

Keywords: Plane Problems; Thermoelastostatics; Boundary Integral Method.

Dept. of Zoology

225. Diagnosis of Toxoplasma by Sag Antigens in Human

Alyaa Ahmed Farid Ahmed El-Said

Book Published by Lambert Academic Publishing,(2014)

Toxoplasma gondii (T. gondii) is an obligate intracellular protozoan parasite with an extremely wide geographic and host range. It belongs to the family Sarcocystidae, phylum Apicomplexa. It was first described in 1908 by splendore in Brazil in rabbit, and also by Nicole and Manceaux in North Africa in northern African rodent called gondi. The name Toxoplasma is derived from its crescent shape (toxon= form, greek). Diagnosis of T. gondii infection relies mainly on serological tests enabling the detection of specific anti-Toxoplama antibodies immunoglobuline (Ig) G, IgM, IgA produced in the infected host. Detection of IgM and IgA could suggest an active T. gondii infection whereas IgG antibodies along with the absence of IgM and IgA leads to the diagnosis of chronic infection. These markers may present conflicting results since IgM antibodies to T. gondii can be detected for more than a year after initial infection.

Keywords: T. Gondii; Diagnosis; Elisa.

226. Hydatidosis Diagnosis

Alyaa Ahmed Farid Ahmed El-Said

Book Published by Scholar's Press, (2014)

Cystic echinococcosis (CE), a widely chronic endemic helminthic disease caused by infection with metacestodes (larval stage) of the tapeworm Echinococcus (E) granulosus, is one of the most widespread helminth zoonotic diseases in humans. Hydatidosis is a public health problem in many parts of the world, and improvement in diagnosis of the disease is still being pursued. Echinococcosis (hydatid disease) in humans occurs as a result of infection by the larval stages of taeniid cestodes of the genus Echinococcus. Although there are four species generally recognized: E. granulosus (which causes cystic echinococcosis), E. multilocularis (which causes alveolar echinococcosis), and E. vogeli and E. oligarthrus (which cause polycystic echinococcosis), two new species have recently been identified: E. shiquicus in small mammals from the Tibetan plateau and E. felidis in African lions, but their zoonotic transmission potential is unknown. Several studies have shown that these diseases are an increasing public health concern and that they can be regarded as emerging or reemerging diseases (Moro and Schantz, 2006). To date, molecular studies, mainly with mitochondrial DNA (mt DNA) sequences, have identified 9 distinct genetic types (genotype G1-9) within E. granulosus, sheep strain (G1), Tasmanian sheep strain (G2), camel strain (G6), pig strain (G1/G9), cervid strain (G8), and cattle strain (G5 E. granulosus requires two host types, a definitive host and an intermediate host. The definitive host of this parasite are dogs and the intermediate host are most commonly sheep, however, cattle, horses, pigs, goats, and camels are also potential intermediate hosts. Humans can also be an intermediate host for E. granulosus, however this is uncommon and therefore humans are considered an aberrant intermediate host. E. granulosus is ingested and attaches to the mucosa of the intestines in the definitive host and there the parasite will grow into the adult stages. Adult E. granulosus release eggs within the intestine which will be transported out of the body via feces. When contaminated waste is excreted into the environment, intermediate host has the potential to contract the parasite by grazing in contaminated pasture, perpetuating the cycle. E. granulosus is transmitted from the intermediate host (sheep) to the definitive host (dogs) by frequent feeding of offal, also referred to as “variety meat” or “organ meat”. Consuming offal containing E. granulosus can lead to infection; however, infection is dependent on many factors. The most common antigenic sources used for the immunodiagnosis of echinococcal disease are hydatid cyst fluid (HCF), somatic extracts and excretory-secretory (E/S) products from protoscoleces or adults of E. granulosus . HCF is a complex mixture of glycol lipoproteins, carbohydrates and salts. Echinococcus hydatid cyst wall, primarily in mammalian liver, was protected by the laminated layer (LL), an acellular mucin-based structure. Crude HCF has a high sensitivity, ranging typically from 75% to 95%. The source of the antigens for the serological tests was fertile crude cyst fluids collected from naturally infected sheep . New effective therapeutic approaches against echinococcosis have been developed in the last 10 years. Despite some progress in the control of echinococcosis, this zoonosis continues to be a major public health problem in several countries. Total surgical removal of a hydatid cyst is still considered the gold standard treatment for CE and AE. Percutaneous treatment, using either hypertonic saline or alcohol as a larvacidal agent, appears to be an additional effective form of treatment. Benzimidazoles, given either alone or combined with praziquantel (PZ) are currently used for the treatment of non-surgical cases and as a supplementary treatment prior and post-surgery. Combined chemotherapy was found to be more effective than either of the agents given alone. ABZ is easily absorbed and more effective than MBZ. ABZ (12–15 mg/kg/day) and MBZ (30–70 mg/kg/day (given for 14–20 days prior to surgery and continued for an additional 3–24 months in a cyclic monthly form were found effective against the disease. Either increased or decreased circulating antigen levels, which consequently cause changes in the humoral immune responses (IgG, IgG1, IgG4, IgE), have a prognostic value in successfully treated CE cases.

Keywords: Echinococcosis; Sand0wich Elisa; Crude Protoscolex Antigen.

227. Antigenic Epitopes Expressed During Fascioliasis in Cattle

Azza Mohamed El Amir

Book Published by Scholars' Press (Nov 4, 2014)

Fasioliasis is a parasitic infection caused by food contaminated with a Fasciola gigantica eggs.These are the most common liver flukes in cattle, sheep and goats.

Keywords: Fasciola Gigantica; Eggs; Cercaria; Matacercaria; Molecules.

228. Effect of Concurrent Administration of An Antibiotic and an Anti-Inflammatory Drug on the Immunotoxicity of Bacterial Endotoxins

Azza Mohamed El Amir

Book Published by Grin Verlag Gmbh (August 7, 2014)

P. aeruginosa is a gram-negative bacterium that causes a variety of diseases in compromised hosts. Bacterial endotoxins such as LPS are the major outer surface membrane components present in almost all gramnegative bacteria and act as extremely strong stimulators of innate immunity and inflammation of the airway. The present study was undertaken to determine the effect of combined administration of Gentamicin (GENT) as antibiotic and Dexamethasone (DEXA) as ant-inflammatory drug on some physiological, immunological and histological parameters. After determination of LD50 of P. aeruginosa, mice groups were injected with DEXA, GENT and LPS alone or in combination. LPS single injection caused a significant increase of total protein, globulin, total leukocyte count، lymphocytes, neutrophils and level of IgM and IgG. DEXA induced an increase of serum total lipid, ALT and AST levels, neutrophilia and lymphopenia. GENT administration increased serum total protein, globulin، total lipid, ALT and AST levels. Physiological and immunological examination demonstrated that combined treatment has a significant effect asdecreaseing serum total protein, globulin, lymphocytes and IgG level thansingle treatment. Histological examination demonstrated that the inflammation of thymus, spleen, lymph node and liver decreases in mice received combined treatment than those received individual treatment Concurrent administration of DEXA and GENT has greatest effect in protecting organs against damage in case of endotoximia.

Keywords: P. Aeruginosa; Lps; Dexamethasone; Gentamicin; Immunoglobulin; Total Protein; Albumin; Globulin; Total Lipid; Ast; Alt;Total Leukocyte Count.

229. Immunolocalization and Evaluation of Thioredoxin Glutathione Reductase Role in Diagnosis of Human Schistosomiasis

Azza Mohamed El Amir

Book Published by Grin Verlag Gmbh (November 19, 2014),

Schistosoma parasite continued to be focus of the solicitude investigators to control the prevalence of the parasite. The efforts are needed for sensitive and accurate diagnosis that can utilize to rapidly map the prevalence of the disease. Our study aimed to benefit from the necessity of the S. mansoni for enzyme TGR, in utilization of the enzyme as an antigen target and evaluate its efficacy in the diagnosis of S. mansoni infection patients. The results revealed that smTGR could be detected in various organs of infected mice and localized in all parasites life cycle stages except eggs using smTGR pAb. Sandwich ELISA reveled that this antigen can be relied as a diagnostic antigen target in serum and urine.

Keywords: S. Mansoni; Sandwich Elisa; Diagnosis; Tgr; Immunolocalization; Polyclonal Antibody.

Faculty of Veterinary Medicine

Dept. of Veterinary Hygeine and Manament

230. Climate Change and Impacts on the Ecology of Ecosystems

Hussein AbdElHay ElSayed Kaoud

Microbial Ecology And Habitat, Discovery Publishing House Pvt. Ltd., (2014)

The life's essential commodities such as fruits and vegetables, spices, fish and sea food, meat and milk in the raw and processed form are in one way very significantly important for human and animal consumption and health whereas in the other direction these are so perishable in the nature to be get contaminated by biological means, by metabolic or physiological activities of commodities and by certain environmental practices leading to the food spoilage. The contaminated food uptake may lead to the severe outbreaks. Outbreaks of human diseases associated with the consumption of contaminated food often occur in developing countries and have become more frequent in developed countries over the past decade. Factors thought to influence the occurrence and epidemiology of these diseases include irrigation and other agronomic practices, the general level of hygiene in handling, international travel, globalization of the supply and distribution of raw produce, the introduction of pathogens into new geographical areas, changes in the virulence and environmental resistance of pathogens, decrease in immunity among certain parts of the population (particularly the elderly), and changes in eating habits. Food technologies may play the important role in ensuring the food safety by different prevention measures and may make the people aware towards maintaining the food safety. Prevention can be achieved through application of the principles of food hygiene and the Hazard Analysis and Critical Control Point system (HACCP). In the present chapter, the nutritional aspects, ways of contamination and contaminating microbes and different prevention measures of fruits and vegetables, spices, fish and sea food, meat and milk has been described briefly in order to make general awareness about the importance of these commodities to our life.

Keywords: Fruits And Vegetables; Spices; Meat; Fish and Sea Food; Milk; Contamination; Prevention Measures.

National Institute of Laser Enhanced Sciences

(***Dept. of Engineering Applications of Lasers (EAL***

231. Advanced Optical Packet Switches Over Wdm Networks

Book Published by Lambert Academic Publishing, (2014)

Optical Packet Switching (OPS) is a promising technology to enable next-generation high-speed IP networks. One of the main components in an OPS network is the optical switch architecture that provides the basic functionality of switching packets from input ports to the desired output ports while maintaining data in the optical domain. In asynchronous OPS networks, contention may arise when two or more packets need to be directed to the same output source, leading to higher packet loss and thus lower switching performance. In the literature, three techniques were explored to deal with contention in asynchronous OPS networks, namely: optical buffering using Fiber Delay Lines (FDLs), wavelength conversion using optical Wavelength Converters (WCs), and space deflection using sophisticated routing algorithms. However, using these techniques in isolation may necessitate the use of large numbers of FDLs or WCs, or slow and complicated routing algorithms, which can be economically and/or technologically infeasible. Few research efforts have focused on the study of combining some of these solutions to achieve better performance with a reduced complexity.

Keywords: Optical packet switching; Wavelength division multiplexing; Contention resolution; Fiber delay lines; Wavelength converters.

Faculty of Engineering

Dept. of Irrigation & Hydraulics Engineering

232. Significance of Statistical Tests and Persistence in Hydrologic Processes

Khaled Hussein Hamed

Handbook of Engineering Hydrology , Crc Press, Taylor And Francis Group, (2014)

Several statistical tests have been performed in the literature on hydrologic and climatological data. The most commonly used tests are those of trend and cross-correlation between data. A basic assumption of many of these statistical tests is that the data in each involved variable are randomly ordered in time. However, while most natural data violate this assumption, many studies simply ignore the effect that persistence in natural data has on the results of statistical tests of significance.
Although such effect has been noted and warned against very early in the literature, many past and current studies simply fail to consider taking this effect into account. This chapter sheds some light on the effect of persistence on the distribution of some commonly used statistical tests of significance.
Methods to account for the effect of persistence on these statistical tests are also discussed.
Keywords: Trend Test, Kendall Tau, Spearman Rho, Persistence.

Dept. of Mechanical Power Engineering

233. Air Distribution in Buildings

Essam Eldein Khalil Hassan

Book Published by Talyor And Francis, Crc Press,Usa, (2014)

The present reference book gives comprehensive advice and guidance on the design, calculations and efficient operation of air distribution in buildings of different nature and applications. The focus of this book remains on buildings of specific nature starting by simple room, to more complex configurations in archaeological monuments, places of worship such as churches and mosques .A special concern is for hospitals operating theatres and sporting facilities , and are for use at various stages during the whole building lifecycle. Air conditioning systems providers have a duty of care to ensure that appropriate engineering governance arrangements are in place and are energy efficient. The author had spent the past 40 years in monumental facilities design of air conditioning and ventilations systems as well as other electromechanical services. It is not the intention within this work to unnecessarily repeat any basic text book material or industry related practice or governments' legislations.
Keywords: Air Conditioning, Cfd, Simulation, Buildings

Dept. of Mining, Petroleum and Metallurgy

234. Understanding the Role of Nanodispersions on the Properties of A390 Hypereutectic Alsi Alloys

Iman Salah Eldin El-Mahallawi

Light Metals 2014, Wiley Tms, (2014)

In this work a series of castings of hypereutectic aluminium silicon samples (A390) were cast from different pouring temperatures (liquid, liquid-solid, and solid-liquid temperatures) with and without adding Al2O3 nanoparticles in liquid and semisolid states, with mechanical stirring. The microstructure features and the tensile strength properties were evaluated and analyzed. The results obtained in this work show that the introduction of Al2O3 nanodispersions together with the stirring effect induces a refining role on the Si particles associated with an increase in the tensile strength and ductility of the alloy. This work also illustrates the significance of optimizing type and amount of nanoparticles, addition temperature and pouring temperature to maximize the effect obtained by these parameters
Keywords: Nanodispersion, Semisolid Processing, Hypereutectic Al-Si Cast Alloys, Microstructure And Strength.

Faculty of Computers and Information

Dept. of Operation Research and Decision Support

235. Prioritization of Public Expenditure for A Better Return on Social Development: A Data Mining Approach

Hisham Abdelsalam

Advanced Machine Learning Technologies And Applications, Springer Berlin Heidelberg, (2014)

Public expenditure affects people both directly, through subsidies and transfers, and indirectly through affecting consumption and production activities. The effects of public expenditure depend not only on its absolute values but also on both its composition and the efficiency of this spending. This paper uses data mining techniques to reach a model that maximizes social develoment through efficient allocation of public expenditure and assesses the current state of Egypt with respect to the model reached. Out of five tested models, decision tree was the one found more appropriate given this research focus and data available.
Keywords: Public Expenditur; Data Mining; Social Development

Faculty of Medicine

Dept. of Cardiology

236. Femoral Artery Pseudoaneurysms : Current Diagnosis and Treatment

Mahmoud Farouk Mohamed Mohamed El-Mahdy

Book Published by Lap Lambert Academic Publishing, (2014)

Femoral pseudoaneurysms complicating cardiac catheterization results in significant morbidity. The treatment options for symptomatic and complicated aneurysms are ultrasound compression, thrombin injection and surgical repair. The authors review the etiology, pathology, diagnosis and treatment modalities for post-cath femoral pseudoaneurysms. They also share their experience in the new treatment modality of para aneurysmal saline injection. This monograph should be useful for interventional cardiologists ،vascular medicine specialists and interventional neuroradiologists who would like a comprehensive review of femoral pseudoaneurysms.

Keywords: Femoral Artery Pseudoaneurysms ; Current Diagnosis and Treatment.

Dept. of Forensic & Toxicology

237. Forensic Pathology Related to Cardiovascular Toxicology

Sherien mohamed salah ghaleb

Heart And Toxins, 1St Edition , Elsevier, (2014)

Introduction: p0010 Toxicology is an area that combines various aspects of chemistry, biology، and medicine. It focuses on the adverse effects of chemicals, drugs, and other substances on the human body. Toxicology is further subdivided into several branches, and these include clinical toxicology, a branch mainly associated with diagnosis and therapeutic approaches toward patients. Another division of toxicology is associated with testing and laboratory work and is known as analytical toxicology.1 However, the branch that is be the main focus of this chapter is forensic toxicology, which involves the implementation and utilization of toxicology in the legal system for the provision of justice either in living cases such as drunk driving or illicit drug use ،or postmortem medicolegal cases. In the process of opining this diagnosis, forensic pathologists are required to assess and confirm that there were no other potential causes of death.2 The pathologists may make the diagnosis of intoxication based on autopsy findings in combination with findings by histopathological examination، sometimes including immunohistochemistry, nueropharmacological analysis, and toxicological analysis together with the circumstantial and background information from the police report and/or medical records.2 p0015 The exposure of humans to toxins is common and this can be confirmed by the 57 U.S. Poison Control Centers that disclosed approximately 2.3 mil- AU:4 lion incidences of previous exposures to various toxins and pharmaceuticals.

Many of the cases that are reviewed by forensic pathologists involve suspected toxicological death.3 p0020 The majority of the cases reviewed are often associated with a crime investigation. The diagnostic process involves several stages and a wide array of events associated with the patient. As mentioned before, these involve the history of the patient, clinical presentations, and information about the circumstances surrounding death and are all important for the pathologist to make the appropriate diagnosis.3

Keywords: Heart; Toxins.

Dept. of Obstetrics and Gynecology

238. Reconstructive Surgeries Enhancing Fertility

Amr Hassan Hussein El Said Wahba

Priniciples and Practice of Assisted Reproductive Technology Volume 1, Jaypee Brothers Medical Publishers (P) Ltd, (2014)

Conception is a complex and delicate process, the successful fulfillment of which requires normal anatomy and function of female reproductive tract. Any distortion in the normal anatomy of the female pelvis or the uterine cavity could lead to the impairment of the fertility potential. Over the past few decades the emergence and development of laparoscopy and hysteroscopy made it possible to reconstruct distorted pelvic anatomy and uterine cavity and thus restoring fertility. This book chapter highlight surgical procedures used to correct distorted anatomy to enhance fertility.

Keywords: Laparoscopy; Hysteroscopy; Infertility; Pelvic Adhesions; Endometriosis; Submucuous Myoma.

Dept. of Parasitology

239. A 25 Years Old Women from Egypt with Severe Chronic Diarrhoea and Malabsorption

Nadia Aly Essa Eldib

Clinical Cases In Tropical Medicine, Elssevier, (2014)

A 25-year-old female patient from BeniSuwaif, Upper Egypt presented with severe diarrhea, vomiting, loss of weight and amenorrhoea. She received different types of treatment for her condition without improvement. Laboratory investigations showed evidence of mal absorption of all nutrients, and microscopic stool examination revealed the characteristic eggs of Capillariaphilippinensis. The patient was treated with the specific antihelminthic therapy (Albendazole) besides fluids and electrolytes oral and parenteral and showed complete improvement and cure. This is a parasite of fish eating birds and man gets infected accidentally showing severe symptoms of malabsorption.

Faculty of Physical Therapy

Dept. of Physical Therapy for BioMechanics

240. Specialized Physical Therapy Techniques: Assessment and Treatment

Walaa Sayed Mohammad Mohammad

Book Published By Lap Lambert Academic Publishing, (2014)

This book has been written for all those who are interested in the use of exercise to promote physical rehabilitation. It is, however, primarily designed to provide students training in physiotherapy with simple theoretical background for the practical instruction they receive in the performance and use of movement and exercises for therapeutic purposes. This book provides the physical therapist with specialized techniques to compete the soft-tissue disorders, neurological, orthopedic and sports rehabilitation.

Keywords: Physical Therapy; Techniques; Assessment; Treatment.

Faculty of Nursing

Dept. of Medical-Surgical Nursing

241. Manual OSCE Checklists for Medical-Surgical Adult Nursing Students

Safaa Hassanein, Zeinab El-Sayed and Hoda Abdel Raouf

Book Published by Lambbert, 72 (2014)

Objective Structured Clinical Exam (OSCE) lately considers a method for evaluating the clinical skills for medical-Surgical Nursing Students. Dramatically the uses of a valid & a reliable OSCE checklists as a method for assessing students' clinical competencies in various setting will increase. Thus the Aim that OSCE examiners must have standard checklists for each OSCE station/scenario that nursing evaluators fill it out while observing the student of Adult Medical-Surgical Nursing doing a selected competency. These checklists are standardized to reduce examiners' bias.It is including specific points and general performance points to be assessed. Objectives of the designed scenarios are clear and must be performed within specific time which will save time and effort for both the evaluator and the student. Also adding score for each OSCE checklist strengthen the evaluation with restrict & clear objectivity and minimize evaluators' subjectivity toward the students. Many of Medical-Surgical Evaluators & Students after using/applying OSCE checklists with clear scenarios reported that it was fair and clear; specially after using the (Promo section) which clarify the Whole OSCE process.

Keywords: Manual OSCE Checklists For Medical-Surgical Adult Nursing Students.

Dept. of Mental Health Nursing

242. Reactivity to Daily Stressors Among Psychiatric Nurses

Mohamed Alshymaa, Abdel Wahab Enayate and Abdel Halim Zeinab

Book Published by Alshaima Mohamed Abdel Towab Mohamed, (2014)

Stressors encountered in daily life aspects, such as home, work, interpersonal، and network may increase physical and emotional reactivity to stress especially in persons working in the nursing field. Characteristics of the individual as age and his level of personal control may limit or increase his reactivity to daily stressors. The aim of this study is to examine the impact of age and personal control beliefs on reactivity to daily stressors among nurses working in Al-Abbassia Mental Health Hospital. A descriptive correlational design was utilized for the current study. A sample of convenience of 100 psychiatric nurses working in Al-Abbassia Mental Health Hospital were divided into two groups "middle age group" and "young age group". Five tools were utilized in the current study including socio-demographic Data Sheet, Daily Stressors Scale, Physical Symptoms of Stress Scale, Psychological Distress Scale, and Personal Control Beliefs Scale. The results showed that: middle adult group of nurses reported higher level of personal control and less reactivity to daily stress than younger adult group of nurses. Personal control was significant and negative predictor of emotional reactivity to daily stress in younger and middle adult groups. However, personal control was significant and negative predictor of physical reactivity in younger adult group, but not in the middle adult group. The study concludes that, age and control beliefs play an important role in controlling emotional and physical reactivity to stress among nurses working in Al-Abbassia Mental Health Hospital. Further investigation is needed to examine age groups' difference to stress، as well as, if there are other factors that need to be incorporated in future research studies.

Keywords: Personal control; Age; Physical reactivity; Emotional reactivity; Daily.

Faculty of Economics and Political Science

Dept. of Economics

243. Euro-Mediterranean Trade: Shallow Versus Deep Integration

Ahmed Farouk Hamed Ghoneim

Economic And Social Development Of The Southern And Eastern Mediterranean Countries, Springer, (2014)

In this chapter, we attempt to assess the impact of shallow versus deep integration between the SEMC1 and the EU, and among the SEMC themselves. We used a dataset which included tariffs, as a proxy for shallow integration, and NTM,2 as a proxy for deep integration. We included data to account for transport and logistics costs. We used an original dataset of maritime freight cost (Maersk 2007) and theWB LPI.
Keywords: Section 2.4 Presents Conclusions.

244. The Political Economy Of Food Price Policy In Egypt

Ahmed Farouk Hamed Ghoneim

Food Price Policy In An Era Of Market Instability A Pollitical Economy Analysis, Oxford University Press, (2014)

Food price volatility is one of the major challenges facing the global agricultural system today. This was most vividly illustrated during the global food crisis of 2007–9 when price spikes occurred for key staple food commodities—such as wheat, rice, maize, and soybeans. Given the variety of reactions by governments of countries experiencing similar food price shocks, the 2007–9 crisis offered an excellent natural experiment for generating knowledge on responses to price volatility in particular and on the political economy of agricultural policy-making more generally. This book contains the wealth of collaborative research by a global team of experts on food price policy—the research was undertaken on a sizeable group of low- and middle-income countries that were highly affected by the 2007–9 food crisis. The central aim of the study is to uncover which political economy factors—ranging from the constellation of different interest groups to the nature of political institutions—explain variations in policy responses across countries. The research output proves valuable for at least three target audiences. First, it can inform international organizations and donors about which types of policy interventions can mitigate price volatility and whether they are feasible given a country's political economy context. Second, it can help national policy makers better understand the trade-offs of certain policy interventions. Third, it generates much-needed further knowledge about the agricultural policy-making process in developing countries, which remains incredibly scarce despite the importance of agriculture to these countries' economies.
Keywords: A Pollitical Economy Analysis.

Faculty of Commerce

Dept. of Accounting

245. Environmental Reporting Of British Food Industry: A Critical Analysis

Amr Mohamed Kotb

Book Published By Lap Lambert Academic Publishing, (2014)

This research based book gives special consideration to environmental reporting practices in a sample of six companies representing the largest companies in both food retailing and processing sectors (FRS & FPS respectively) in the UK. This has been achieved through reviewing the corporate social and environmental reporting and disclosing practices' literature and in-depth empirical analyses using two methods. The first is a trend analysis (TA) of the corporate environmental reporting practices over a five-year period. Second, a content analysis (CA), of the number of words and pages, was conducted on the current corporate environmental reporting practice as part of corporate social and/or responsibility reports.The results of the five years' TA show that the volume of environmental reporting of FRS is found to be statistically higher than that of FPS. The quality of environmental information is assessed by the extent that the report includes narrative and quantitative information, visual tools and environmental policy, environmental targets, environmental initiatives, etc. It was found that FRS publishes high quality environmental information compared with of the FPS.
Keywords: Environmental Accounting, Corporate Environmental Reporting, Food Industry.

246. Board Involvement In Risk Management Practices: Evidence From Saudi Arabia Banks

Tariq Mohamed Hassaneen Ismail

Globalization Of Financial Institutions, Springer, (2014)

This study bridges the gap between theory and practice of risk management in banks incorporated in Saudi Arabia. The main objective of this study is to investigate the risk management process to assess the level of involvement of boards in risk management practices (RMPs). This study surveys representatives from banks to elicit their opinion regarding the characteristics of an efficient risk management process, the four aspects of risk management practices; understanding risk management (URM), risk identification (RI), risk assessment and analysis (RAA) and risk monitoring and control (RMC), as well as the role played by boards in risk management (RM). The results suggest that banks in Saudi Arabia have an efficient risk management process and an adequate understanding of risk management and a system for risk identification. Additionally, there is a high level of board's involvement in assessing, analyzing, monitoring and controlling risk efficiently, where they are somewhat reasonably efficient in managing risk, hence, URM, RM and RMC are the most influencing factors in RMPs. This study may have practical implications for boards in banks incorporated in Saudi Arabia by explaining the adoption of certain risk management strategies, and helping them understand how risk management behavior can maximize operating performance. In addition, it would help regulators and policy makers to develop a coherent and acceptable set of risk management tools and techniques.
Keywords: Risk Management; Boards In Banks; Risk Assessment; Banks.

Dept. of Business Administration

247. Information Systems In Global Business Today

Niveen Ezzat

Management Information Systems, Global Edition, 13Th Edition | 978-0-273-78997-0, Pearson, (2014)

Mashaweer is the first personal service company in Egypt. It is purely dedicated to saving its clients 'time and effort acting as a personal assistant 24 hours a day. The personal assistant is a rider with a motorcycle who runs any errands for individual clients or corporations at any given time.

Keywords: Management Information Systems; Errands Service; Company In Egypt; Mashaweer.

Faculty of Law

Dept. of Puplic Law

248. La Multiplication Des Garanties Et Juges Dans La Protection De Droits Fondamentaux

Yousri Mohamad ELASSAR

Annuaire International De Justice Constitutionnelle, Www.Economica.Fr, (2014)

Cette recherche a pour but d'exposer les dispositions de la constitution relatives aux droits et libertés publics, et montrer l'existence de nombreuses garanties dans la protection de ces droits et libertés , et de plusieurs juridictions qui les protegent: Cour criminelle jnternationale, Cour europèene de droits de l'homme, Cour africaines de droits de l'homme, Cour constitutionnelle suprème, Conseil d'Etat (juridiction administrative), et juridiction ordinaire.

Keywords: Constitution; Droits Et Libertés Publics; Cours Internationales; Constitutionnelles Et Amdministratives.

249. La Ligue Des Etats Arabes Et Les Droits L'homme

Yousri Mohamad ELASSAR

Introduction Aux Droits De L'homme, Schulthess Editions Romandes, (2014)

Cette recherche a pour but de coparer les régimes juridiques des pays arabes en matière de la protection des droits de l'homme, en exposant les disposistions des constitutions arabes qui consacrent ces droits, puis le rôle des cours constitutionnelles dans la protection effective des ces droits, et le role de la Ligue des Etats arabes dans ce domaine.

Keywords: Constitututions Arabes; Droits De L'Homme; Cours Constitutionnelles.

Faculty of Arts

Dept. of English Language and its Literature

250. Rewriting Desire as Empowerment in the Women and Memory Forum's Storytelling Project

Mona Ibrahim Ali

Changing Narratives of Sexuality: Contestations, Compliance And Women's Empowerment, Zed Books, (2014)

This paper attempts to trace the politics of resistance and empowerment through representations of sexuality in two bodies of work: the new rewritten stories of the first generation of storytellers in the Women and Memory Forum's (Egyptian Feminist NGO's (storytelling project and the new rewritten stories of the new generation of Egyptian writers and bloggers who attended the rewrite workshops supervised by the Pathways to Women's Empowerment Programme. A comparison between representations of desire in both bodies of work is conducted with the aim of highlighting the development of attitudes towards sexuality as a gateway to the empowerment of women in the Egyptian society over the past ten years. The negative attitudes towards male sexuality as a tool for the oppression of women and the politics of resistance by women represented by methods of physical and psychological castration of men in the stories of the first generation are highlighted. On the other hand, focus on female sexuality and women's sexual rights and choices as a way to women's empowerment in the stories of the second generation of writers is made through a close textual analysis of those stories.
Keywords: Sexuality; Gender; Empowerment; Stories; Generation Gap.

251. On the Road to Democracy: Spoken Word Poetry Poeticizing the Revolution

Maha F. El Said

Shifting Borders: America and the Middle East/North Africa, American University of Beirut Press, (2014)

On the Road to Democracy Spoken Word Poetry Poeticizing the Revolution Concerns about the use of poetry and its importance have been addressed throughout the ages in numerous essays written in “defense” of poetry. Most critics argue that confining poetry to academia has taken away life from it, replacing it with more popular forms of entertainment such as novels, soap operas, and movies. I argue that spoken-word poetry takes away the elitist state of poetry and replaces it with popular opinion, bringing poetry down from the ivory tower of academia into the streets If revolutions are a call for equality and democracy, spoken-word poetry “is assumed to be the possession of the people… it is the wisdom of the people, it’s the peoples knowledge… [making it] a democratic art in the true sense of the word.” This paper aims to show how the revolutionary nature of spoken word has lent itself to revolutionary causes in both the American and Egyptian contexts. Starting with the Beat Generation up to Hip Hop ‘ Ahmed Fouad Nigm up to spontaneous lyrics spun in Tahrir Square, this paper demonstrates how spoken word - that is essentially a poetry of dissent- has transformed both Zuccotti Park and Tahrir Square into a heterotopia paving the way to democracy.
Keywords: Spoken Word ; American Studies ; Poetry ; English Literature.

Dept. of French Language and its Literature

252. L’Esprit Des Lieux Dans Passage De Milan De Michel Butor Et Dans Villa Amalia De Pascal Quignard : Entre Le Topos Et La Chôra

Aziza Ibrahim Awad

Langue Et Territoire Espaces Litteraires, Norman Cheadle, Universty Of Laurentienne, (2014)

Résumé : C’est à la lumière d’une convergence entre la littérature et la géographie que nous avons tenté d’étudier une nouvelle image de l’espace littéraire qui surgit d’oeuvres récentes. Il nous semble qu’il faut resserrer les liens entre les deux modes d’appréhension du réel que sont la géographie et la littérature. Les oeuvres de Michel Butor ou de Pascal Quignard explorent par excellence la relation homme/nature, espace littéraire/ espace réel, ce qui peut nous aider à saisir les connexions qui lient le monde de la représentation du réel et le réel lui-même. Y étudier la transformation des lieux réels en représentations, c’est tenter de comprendre comment ces grands romanciers traduisent ce qu’on appelle “le génie du lieu » ou « l’esprit du lie”u.
Keywords: Géographie Littéraire; Spatialité; Représentation; Espace De La Solitude; Brouillard; Opacité; Esprit Du Lieu; Territoire; Topos; Chôra.

253. Ich Liebe Die Muslime, Weil Sie Gott Lieben

Hoda Issa

Book Published By Verlag Herder, (2014)

Der ägyptische Dominikaner Georges Anawati (1905-1994) gehört zu den Wegbereitern des christlich-islamischen Dialogs. Das hier dokumentierte letzte Interview mit Pater Anawati zeugt von der Ernsthaftigkeit und Leidenschaft, mit der er die Begegnung mit dem Islam sowie den interreligiösen Dialog auch in spannungsreichen Zeiten suchte. In einem weiteren Text legt er dar, wie die großen islamischen Mystiker all jene miteinander ins Gespräch bringen, die sich nach dem Absoluten sehnen.
Keywords: äGyptische dominikaner; Christlich-islamischen.

Dept. of Japanese Language and its Literature

C Res_Wcode: 2838

254. العربية لطلاب الجامعة: هيا نتعلم الأصوات العربية

Hanan Rafik Mohamed and Y. Shohei

Tokyo University of Foreign Studies Press, (2014)

This textbook specializes in teaching the learner how to be familiar with the Arabic sounds. Arabic is said to be one of the most difficult language for foreigners to learn in terms of grammar and pronunciation. In particular, the production and perception of a set of Arabic sounds that are not found in other languages are difficult for non-native learners. Although the acquisition of the Arabic sounds is one of the obstacles non-native learners encounter, there has been no material so far that helps them learn the Arabic sounds systematically. As an attempt to meet such demand, we have written this textbook so as to allow the learners to be aware of their difficulties in pronunciation and

overcome them before their mispronunciation becomes fossilized We have written this textbook with both the learners and the teacher in mind . The learners cannot acquire the correct pronunciation just by imitating the teacher's pronunciation if they are not informed of accurate information of the sounds and of how they can produce them. This textbook has been made to provide such information and enable the learners to improve their production and perception skills with the sound materials in the DVD Variants of Arabic adopted in this textbook are Standard Arabic or fus'ha and the Cairo dialect spoken in Egypt. The Arabic speaking land is often cited as a typical example of diglossia, which refers to a situation where two very different dialects of a language are used. The Arabic speaking people speak in their own dialects but read and write in the common Standard Arabic, the language of the Holy Qur'an, which has remained virtually unchanged since the seventh century. Although Standard Arabic is common to all the Arabic speaking states, there are some minor differences in pronunciation from region to region. However, the Holy Qur'an must be pronounced as defined in the traditional art of the Qur'anic recitation, disallowing the regional variety. The pronunciation of Arabic as described in this textbook is fundamentally that of the Qur'an and is well understood in the twenty-two Arab countries. The Cairo dialect is the most widely spread due to a great number of Egyptian workers working in other Arabic speaking countries, and also, due to Egyptian dramas and films being widely viewed in them Language is the most important tool to know other cultures. We hope that this book will help the learner improve her pronunciation and listening skill of Arabic and contribute to a better dialogue and understanding between the Arabic speaking land and the rest of the world.

Keywords: Arabic Sounds; Fus'Ha and The Cairo Dialect; Production and Perception; Holy Qur'An.

Authours' Index

APPENDIX

Appendix 1

Statistical Data

List of top 10 authors according to the number of publications
(Year 2014)

Rank	Name	Faculty	No. of Pub.
	Ali Yehia Ellithi Kamel	Faculty of Science	32
	Gamal Esmat	Faculty of Medicine	26
	Olfat Gamil Shaker	Faculty of Medicine	25
	Gehad Genidy Mohamed Genidy	Faculty of Science	18
	Hussein AbdElHay ElSayed Kaoud	Faculty of Veterinary Medicine	17
	Ahmed Gomaa Ahmed Radwan	Faculty of Engineering	14
	mohammed abdelkawy mohammed ibrahim	Faculty of Pharmacy	14
	Mohamed Ali Ahmed	Faculty of Science	14
	Aboul Ella Otify Hassanien	Faculty of Computers and Information	13
	Laila Ahmed Rashed Ismaiel	Faculty of Medicine	13
	Hayam Mahmoud Lotfy Ibrahim	Faculty of Pharmacy	13
	Sobhy Mohamed Gomaa	Faculty of Science	13
	Abd El-Aty Mostafa Abd El-Aty	Faculty of Veterinary Medicine	13

Appendix 1

Statistical Data

List of top 10 authors according to the number of publications
(Year 2014)

Rank	Name	Faculty	No. of Pub.
1	Ali Yehia Ellithi Kamel	Faculty of Science	**44**
2	Gehad Genidy Mohamed Genidy	Faculty of Science	**17**
3	Eid Hassan Abd Elrahman Doha	Faculty of Science	**16**
4	A. M. Abd El-Aty	Faculty of Veterinary Medicine	**15**
5	Azza Mohamed El Amir	Faculty of Science	**14**
6	Ahmed Gomaa Ahmed Radwan	Faculty of Engineering	**12**
6	Gamal Esmat	Faculty of Medicine	**12**
8	Laila Ahmed Rashed Esmail	Faculty of Medicine	**11**
9	Mohammed Abdelkawy Mohammed Ibrahim	Faculty of Pharmacy	**10**
9	Reem Khidr Mohamed Arafa	Faculty of Pharmacy	**10**
11	Aboul Ella Hassanien Aly	Faculty of Computers and Information	**9**
11	Hany Wagih Darwish	Faculty of Pharmacy	**9**
11	Nasser Hassan Sweilam	Faculty of Science	**9**
14	Mohamed Mahmoud Mahdy Marzouk	Faculty of Engineering	**8**
14	Taymour Mostafa	Faculty of Medicine	**8**
14	Rafaat Hassan Hilal	Faculty of Science	**8**
14	Alyaa Ahmed Farid Ahmed El-Said	Faculty of Science	**8**
14	Kamelia Mahmoud Osman	Faculty of Veterinary Medicine	**8**
19	Ali Ahmed Mohamed Ismail	Faculty of Economics and Political Science	**7**
19	Mostafa Ahmed Moawad Abdeen	Faculty of Engineering	**7**

List of top 10 authors according to the sum of their impact factor
(Year 2014)

Rank	Name	Faculty	Sum IF
1	Ali Yehia Ellithi Kamel	Faculty of Science	253.45
2	Foad Abd-Allah	Faculty of Medicine	85.54
3	Hussein Mostafa Mosa Khaled	The National Cancer Institute	47.81
4	Ahmed Abdelfattah Othman	Faculty of Pharmacy	46.9
5	laila abdel moteleb mohamed selim	Faculty of Medicine	46.67
6	Hassan Fathy Ibrahim	Faculty of Science	37.67
7	Lobna abd elgawad mansour	Faculty of Medicine	36.63
8	A. M. Abd El-Aty	Faculty of Veterinary Medicine	35.61
9	Gehad Genidy Mohamed Genidy	Faculty of Science	30.51
10	Ramy Karam Aziz Henein	Faculty of Pharmacy	30.27
11	Amal Mohamed Ibrahim El Beshlawy	Faculty of Medicine	29.72
12	Hossam Mohamed Seifeldin Ashour	Faculty of Pharmacy	29.19
13	Laila Ahmed Rashed Esmail	Faculty of Medicine	27.25
14	Gamal Esmat	Faculty of Medicine	26.47
15	Nermeen Mouftah Galal	Faculty of Medicine	25.5
16	Ahmed Abdelshafy Mahmoud Gomaa	Faculty of Engineering	24.96
17	Maher Fathy Mohamed El-kady	Faculty of Science	24.07
18	Samy Abbas Madbouly Faragg	Faculty of Science	21.68
19	Reem Khidr Mohamed Arafa	Faculty of Pharmacy	21.54
20	Rehab Ali Abdel Salam Hegazy	Faculty of Medicine	21.28

List of top 10 authors according to highest single impact factor
(Year 2014)

Rank	Name	Faculty	Max. IF
1	Foad Abd-Allah	Faculty of Medicine	39.207
1	Hussein Mostafa Mosa Khaled	The National Cancer Institute	39.207
3	Lobna abd elgawad mansour	Faculty of Medicine	31.476
3	Laila Abdel Moteleb Mohamed Selim	Faculty of Medicine	31.476
5	Ahmed Abdelfattah Othman	Faculty of Pharmacy	21.822
6	Rashad Sami Barsoum	Faculty of Medicine	16.378
7	Sahar Mohamed Shaker Abd El-fattah Sheta	Faculty of Medicine	14.722
8	Ahmed Abdelshafy Mahmoud Gomaa	Faculty of Engineering	14.463
9	Abdalla Amin Selim Elagha	Faculty of Medicine	14.413
10	Mohamed SalahEldin Abdel-Hakeem	Faculty of Pharmacy	13.925
11	Mohamed Salah El-Din Mohamed El-Soda	Faculty of Agriculture	13.479
12	Ramy Karam Aziz Henein	Faculty of Pharmacy	12.194
13	Maher Fathy Mohamed El-kady	Faculty of Science	12.032

Statistical Data

List of faculties with highest score of impact factor
(Year 2014)

Faculty_En	count_Res	%	Tot_IF	1%	Avg_IF	Max_IF	Min_IF
Faculty of Science	435	28.19	985.647	30.49	2.265855	12.033	0.048
Faculty of Medicine	324	21	819.321	25.35	2.528769	39.207	0.234
Faculty of Pharmacy	240	15.55	650.199	20.12	2.709163	21.823	0.187
Faculty of Engineering	167	10.82	253.073	7.83	1.515407	14.464	0.268
Faculty of Veterinary Medicine	71	4.6	134.493	4.16	1.894268	7.327	0.123
Faculty of Agriculture	52	3.37	102.433	3.17	1.969865	13.479	0.408
The National Cancer Institute	37	2.4	110.318	3.41	2.981568	39.207	0.296
Faculty of Nursing	30	1.94	3	0.09	0.1	3	3
National Institute of Laser Enhanced Sciences	29	1.88	68.151	2.11	2.350035	11.444	0.958
Faculty of Economics and Political Science	29	1.88	13.275	0.41	0.457759	1.638	0.229
Faculty of Arts	23	1.49	11.375	0.35	0.494565	9.977	0.398
Faculty of Computers and Information	20	1.3	12.156	0.38	0.6078	2.679	1.093
Faculty of Physical Therapy	18	1.17	30.125	0.93	1.673611	2.622	0.316
Faculty of Oral Dental Medicine	17	1.1	18.924	0.59	1.113176	2.788	0.676
Faculty of Archaeology	16	1.04	9.93	0.31	0.620625	2.566	0.1
Faculty of Commerce	11	0.71	4.095	0.13	0.372273	2	0.4
Institute of African Research and Studies	8	0.52	0.976	0.03	0.122	0.885	0.091
Institute of Statistical Studies and Research	5	0.32	1.424	0.04	0.2848	1.058	0.366
Faculty of Law	5	0.32			0		0
The Institute of Educational Studies and Research	5	0.32	0.791	0.02	0.1582	0.791	0.791
Faculty of Kindergarten	1	0.06	2.563	0.08	2.563	2.563	

Statistical Data

List of number of publications

(2006-2014)

Faculty	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Science	142	162	241	242	290	425	447	509	435	**2893**
Medicine	49	64	124	154	226	350	338	388	324	**2017**
Engineering	56	79	109	140	131	198	228	240	167	**1348**
Pharmacy	27	40	77	104	126	224	261	297	240	**1396**
Agriculture	8	14	35	83	75	136	148	128	52	**679**
Veterinary Medicine	11	20	47	53	86	136	95	118	71	**637**
Institute National Cancer	9	16	16	27	37	52	46	57	37	**297**
Laser National Institute of Enhanced Sciences	13	11	9	21	27	33	26	32	29	**201**
Political Economics and Science	13	14	13	8	10	6	10	42	29	**145**
Arts	7	7	17	15	15	22	20	24	23	**150**
and Statistical Studies Research Institute	8	6	11	7	4	17	43	43	5	**144**
Archaeology	1	2	5	16	19	26	32	0	16	**117**
Information Computers and	2	3	4	11	6	32	35	0	19	**112**
Medicine Oral and Dental			1	15	19	23	21	20	17	**116**
Physical Therapy					1	3	30	10	18	**62**
Nursing			1	4	2	6	5	20	30	**68**
Commerce	4	2	1	4	6	17	24	15	11	**84**
Mass Communication			1		3	1		0	0	**5**
Educational Studies and Research					2	2	4	0	5	**13**
African Research and Studies Institute		1	2			3	8	11	8	**33**
Dar Al-Oloum	1						1	0	0	**2**
Law						1	1	0	5	**7**
Regional and Urban Planning							1	0	0	**1**
Kindergarten Faculty of								1	1	**2**
Total	**351**	**441**	**814**	**926**	**1089**	**1712**	**1824**	**2012**	**1542**	**10711**

Appendix 2

Top 50 authors of Cairo University

(According to no. of publications)

Rank	Author Name	Affiliation	No. of Pub
1	**Ahmed A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	439
2	**Ahmed M. Soliman**	Faculty of Engineering, Dept. of Electronics and Communication Engineering	385
3	**Aboul Ella I Baset Hassanien**	Cairo University, Scientific Research Group in Egypt (SRGE)	311
4	**Essam Eldin Khalil**	Faculty of Engineering	265
5	**Yousry Moustafa Issa**	Faculty of Science, Dept. of Chemistry	219
6	**Ali A. Shafik**	Faculty of Medicine	176
7	**Mohamed A. A. Aboulghar**	Faculty of Medicine	174
8	**A. M. Abd El-Aty**	Dept. of Pharmacology	166
9	**Gehad Genidy Mohamed**	Dept. of Chemistry	163
10	**Said R. Grace**	Faculty of Engineering, Dept. of Engineering Mathematics	157
11	**Hesham Gaber Al-Inany**	Kasr El-Aini School of Medicine, Dept. of Obstetrics and Gynecology	157
12	**Ahmad S. Shawali**	Faculty of Science, Dept. of Chemistry	151
13	**Waheed A. Badawy**	Faculty of Science, Dept. of Chemistry	148
14	**Olfat Gamil Shaker**	Dept. of Biochemistry	146
15	**Gamal Esmat**	Faculty of Medicine	135
16	**Amir F. Atiya**	Faculty of Engineering, Dept. of Computer Engineering	118
17	**Taymour Mostafa**	Kasr El-Aini School of Medicine,	112
18	**Fathy A. Abdel-Ghaffar**	Cairo University, Department of Zoology	108
19	**Hussein M. Khaled**	National Cancer Institute	107
20	**H. H. Khalifa**	Faculty of Science, Dept. of Chemistry	106
21	**Ismail A. Ismail A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	103
22	**Kamal Mohammed Dawood**	Dept. of Chemistry	102

Rank	Author Name	Affiliation	No. of Pub
23	**Amr Amin Adly**	Faculty of Engineering, DEp. Electrical Power and Machines	100
24	**Yehia Ahmadi Kh Badr**	National Institute of Laser Enhanced Sciences	99
25	**Abdou Osman Abdelhamid**	Faculty of Science, Dept. of Chemistry	99
26	**Ahmed Mohamed Galal**	Faculty of Science, Dept. of Chemistry	98
27	**Mohamed Abdel Harith**	Natl. Inst. of Laser Enhanced Sci.	98
28	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	98
29	**Abdel Rahman Zekri**	National Cancer Institute	97
30	**Ahmad M. Farag**	Dept. of Chemistry	95
31	**Laila Ahmed Hmed Rashed**	Kasr El-Aini School of Medicine, Dep. of Biochemistry	95
32	**Mohamed A. Zayed**	Dept. of Chemistry	94
33	**Magdy Wadid Sabaa**	Dept. of Chemistry	93
34	**Maher Zaki Elsabee**	Dept. of Chemistry	92
35	**Rashika R. El Ridi**	Faculty of Science, Dept. of Zoology	90
36	**Rafat Milad Mohareb**	Dept. of Chemistry	88
37	**Mohamed El-Nadi**	Dept. of Physics	87
38	**Eid Hassan Doha**	Faculty of Science	82
39	**Samy A. Madbouly**	Dept. of Chemistry	80
40	**Abdel Latif Elshafei**	Cairo University Faculty of Engineering, Electrical Power and Machines Department	72
41	**Mohamed Saada El- Deab**	Faculty of Science, Dep. of Chemistry	72
42	**Nada F. Atta**	Faculty of Science, Dept. of Chemistry	70
43	**Hamdi M. Hassaneen**	Faculty of Science, Dept. of Chemistry	70
44	**Samir I. Shaheen**	Faculty of Engineering, Dept. of Computer Engineering	67
45	**Amal El-Beshlawy**	Faculty of Medicine Dept. of Biochemistry, Genetics and Molecular Biology	67
46	**Nour Tawfik Abdel Ghani**	Faculty of Science, Dept. of Chemistry	66
47	**Mohamed Ali Farag**	Faculty of Pharmacy, Dep. Pharmacognosy	64
48	**Tamer A. Elbatt**	Faculty of Engineering, Dep. Electronics and Communications	63
49	**Mona Bakr Mohamed**	National Institute of Laser Enhanced Sciences	62

Rank	Author Name	Affiliation	No. of Pub
50	**Nadia Ahmed Mohamed**	Dept. of Chemistry	62
51	**Gamal R. Saad**	Faculty of Science, Dept. of Chemistry	62
52	**Mohamed Shaarawy**	Faculty of Oral and Dental Medicine	61
53	**Youssef F. Rashed**	Dept. of Structural Engineering	61

Top 50 authors of Cairo University
(According to total no. of citations)

Rank	Author Name	Affiliation	Tot. Citation
1	**Mohamed A. A. Aboulghar**	Kasr El-Aini School of Medicine, Department of Obstetrics and Gynecology	4548
2	**Ahmed M. Soliman**	Faculty of Engineering, Dept. of Electronics and Communication Engineering	4382
3	**Ahmed A. Shafik**	Kasr El-Aini School of Medicine, Dept. of Surgery and Experimental Research	3431
4	**Mona Bakr Mohamed**	National Institute of Laser Enhanced Sciences	3314
5	**Ramy K. Aziz**	Cairo University Faculty of Phamacy	2930
6	**Gehad Genidy Mohamed**	Faculty of Science, Dept. of Chemistry	2352
7	**Amir F. Atiya**	Faculty of Engineering, Dept. of Computer Engineering	2158
8	**Waheed A. Badawy**	Dept. of Chemistry	2147
9	**Hesham Gaber Al-Inany**	Dept. of Obstetrics and Gynecology	2132
9	**Mohamed Ali Farag**	Faculty of Pharmacy, Dep. Pharmacognosy	2126
10	**Hussien M. Khaled**	Department of Medical Oncology	2042
11	**Mohamed Saada El- Deab**	Faculty of Science, Dep. of Chemistry	1960
12	**Gamal Esmat**	Faculty of Medicine	1901
13	**Mohamed Hilmy Elnagdi**	Dept. of Chemistry	1839
14	**Yousry Mostafa Issa**	Faculty of Science, Department of Chemistry	1681
15	**Ahmad S. A. S. Shawali**	Dept. of Chemistry	1606
16	**A. M. Abd El-Aty**	Dept. of Pharmacology	1498
17	**Mohamed I. Ismail**	Faculty of Science, Department of Physics	1476
18	**Kamal Mohammed Dawood**	Dept. of Chemistry	1415
19	**Rabab Mohamed Gaafar**	National Cancer Institute	1373
20	**Mohamed Mohamed Shoukry**	Faculty of Science, Dept. of Chemistry	1289
21	**Ahmad M. Farag**	Faculty of Science, Dept. of Chemistry	1251
22	**Said R. Grace**	Faculty of Engineering, Dept. of Engineering Mathematics	1213
23	**Taymour Mostafa**	Kasr El-Aini School of Medicine, Faculty of Medicine	1210
24	**Eid Hassan Doha**	Faculty of Science	1160

Rank	Author Name	Affiliation	Tot. Citation
25	**Amal El Beshlawy**	Faculty of Medicine Dept. of Biochemistry, Genetics and Molecular Biology	1105
26	**Samy A. Madbouly**	Faculty of Science, Department of Chemistry	1097
27	**Abdel Rahman Zekri**	National Cancer Institute	1058
28	**Nada F. Atta**	Faculty of Science, Dept. of Chemistry	1047
29	**Khaled Mahfouz Ismail**	Dept. of Chemistry	1024
30	**Rashika R. El Ridi**	Faculty of Science, Dept. of Zoology	997
31	**Radwan S. Farag**	Dept. of Biochemistry	980
32	**Magdy Wadid Sabaa**	Department of Chemistry	949
33	**Gamal S. A. El-Baroty**	Faculty of Agriculture	920
34	**Fathy A. Abdel-Ghaffar**	Cairo University, Department of Zoology	919
35	**Nour Tawfik Abdel Ghani**	Faculty of Science, Dept. of Chemistry	917
36	**Ali A. Shafik**	Faculty of Medicine	913
37	**Mohamed Abdel Harith**	Natl. Inst. of Laser Enhanced Sci.	894
38	**Olfat Gamil Shaker**	Dept. of Biochemistry	875
39	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	849
40	**Maher Zaki Elsabee**	Dept. of Chemistry	847
41	**Tamer A. ElBatt**	Faculty of Engineering,	841
42	**Yahia A kh Badr**	National Institute of Laser Enhanced Sciences	809
43	**Mohamed Shaarawy**	Kasr El-Aini School of Medicine, Dept. of Obstetrics and Gynecology	788
44	**Mohamed A. Zayed**	Dept. of Chemistry	765
45	**Laila Ahmed Hmed Rashed**	Kasr El-Aini School of Medicine, Dep. of Biochemistry	756
46	**Nadia Ahmed Mohamed**	Faculty of Science, Dept. of Chemistry	729
47	**Amany Mohammed Fekry**	Faculty of Science, Department of Chemistry	720
48	**Rafat Milad Mohareb**	Faculty of Science, Dept. of Chemistry	671
49	**Fathy Mohamed Abdelrazek**	Faculty of Science, Dept. of Chemistry	667
50	**Mahmoud Mohamed Ghorab**	Faculty of Pharmacy, Dep. of Pharmaceutics	624
51	**Hamdi M. Hassaneen**	Faculty of Science	655
52	**Abeer Ahmed Bahnassy**	The National Cancer Institute	602
53	**Fawzy Ali Attaby**	Faculty of Science	596
54	**Hany Abdelaziz El Shemy**	Faculty of Agriculture, Department of Biochemistry	554

Top 50 authors of Cairo University
(According to h-index)

Rank	Author Name	Affiliation	h-index
1	**Mohamed A. A. Aboulghar**	Kasr El-Aini School of Medicine	38
2	**Ahmed M. Soliman**	Faculty of Engineering	34
3	**Hesham Gaber Al-Inany**	Faculty of Medicine	27
4	**Waheed A. Badawy**	Faculty of Science	27
5	**Gehad Genidy Mohamed**	Faculty of Science	26
6	**Amal El Beshlawy**	Faculty of Medicine	25
7	**Amir F. Atiya**	Faculty of Engineering	25
8	**Gamal Esmat**	Faculty of Medicine	24
9	**Mona Bakr Mohamed**	National Institute of Laser Enhanced Sciences	23
10	**Mohamed S. El-Deab**	Faculty of Science	23
11	**Hussein Khaled**	The National Cancer Institute	22
12	**Ahmad S. Shawali**	Faculty of Science	21
13	**Mohamed Ali Farag**	Faculty of Pharmacy Dep. of Pharmacognosy	21
14	**Eid Hassan Abd Elrahman Doha**	Faculty of Science	21
15	**Ahmad Mahmoud Farag**	Faculty of Science	20
16	**A. M. Abd El-Aty**	Faculty of Veterinary Medicine	20
17	**Mohamed I. Ismail**	Faculty of Science, Dep. of Physics	20
18	**Kamal M. Dawood**	Faculty of Science	19
19	**Abdel Rahman Abu Zekri**	The National Cancer Institute	19
20	**Mohamed Mohamed Shoukry**	Faculty of Science	19
21	**Yousry Moustafa Issa**	Faculty of Science	19
22	**Taymour Mostafa**	Faculty of Medicine	19
23	**Nour Tawfik Abdel Ghani**	Faculty of Science	19
24	**Magdy Wadid Sabaa**	Faculty of Science	18
25	**Samy A. Madbouly**	Faculty of Science	18
26	**Khaled Mahfouz Ismail**	Faculty of Science	18
27	**Said Rezk Grace**	Faculty of Engineering	18

Rank	Author Name	Affiliation	h-index
28	**Rashika El Ridi**	Faculty of Science	18
29	**Nada F. Atta**	Faculty of Science	18
30	**Shaarawy, Mohamed A.**	Faculty of Oral and Dental Medicine	18
31	**Mohamad Abdel Harith Mohamad**	National Institute of Laser Enhanced Sciences	18
32	**Ramy Karam Aziz**	Faculty of Pharmacy	17
33	**Fawzy Ali Attaby**	Faculty of Science	16
34	**Olfat Gamil Shaker**	Faculty of Medicine	16
35	**Fathy A. Abdel-Ghaffar**	Faculty of Science	16
36	**Yehia Ahmadi Kh Badr**	National Institute of Laser Enhanced Sciences	16
37	**Rabab Mohamed Gaafar**	The National Cancer Institute	15
38	**Mohamed T. Khayyal**	Faculty of Pharmacy, Dept. of Pharmacology	15
39	**Mohamed A. Zayed**	Faculty of Science	15
40	**Amany Mohamed Fekry**	Faculty of Science	15
41	**Hossam El-Din Saad El-Beltagi**	Faculty of Agriculture	15
42	**Hany Abdelaziz El Shemy**	Faculty of Agriculture, Department of Biochemistry	15
43	**Rafat Milad Mohareb**	Faculty of Science	15
44	**Mahmoud Mohamed Ghorab**	Faculty of Pharmacy	14
45	**Gamal R. Saad**	Faculty of Science	14
46	**Abeer Ahmed Bahnassy**	The National Cancer Institute	14
47	**Ali A. Shafik**	Faculty of Medicine	14
48	**Laila Ahmed Rashed**	Faculty of Medicine	14
49	**Hamdi M. Hassaneen**	Faculty of Science	14
50	**Nadia Ahmed Mohamed**	Faculty of Science	13
51	**Tamer Ahmed Macky**	Faculty of Medicine	13
52	**Fathy Mohamed Abdelrazek**	Faculty of Science	13
53	**Hala Gamil El-Shobaky**	Faculty of Science	13
54	**Mohamad H. Warda**	Faculty of Veterinary Medicine	13
55	**Ahmed Abdo El-Sherif**	Faculty of Science	13
56	**Magdy A. El-Tawil**	Faculty of Engineering	13

Appendix 3

Top 5 authors of Cairo University Faculties
(According to no. of publications from Top 50)

1- Faculty of Engineering,

Rank	Author Name	No. of Pub
1	Ahmed M Soliman	385
2	Essam E.Khalil	265
3	Said Rezk Grace	157
4	Amir F. Atiya	118
5	Amr Amin Adly	100

2- Faculty of Science,

Rank	Author Name	No. of Pub
1	Yousry Moustafa Issa	219
2	Gehad Genidy Mohamed	163
3	Ahmad Sami Shawali	151
4	M. Waheed A. Badawy	148
5	Fathy A. Abdel-Ghaffar	108

3- Kasr El-Aini School of Medicine,

Rank	Author Name	No. of Pub
1	Ahmed A. Shafik	439
2	Aly A. Shafik	176
3	Hesham Al-Inany	157
4	Olfat Gamil Shaker	146
5	Gamal Esmat	135

4- Faculty of Pharmacy,

Rank	Author Name	No. of Pub
1	Mohamed T. Khayyal	98
2	Mohamed Ali Farag	64
3	Ramy Karam Aziz	49
4	Sanaa Abdel Baky Kenawy	38

5- National Cancer Institute,

Rank	Author Name	No. of Pub
1	Hussein Mostafa Khaled	107
2	Abdel Rahman Abu Zekri	97
3	Mohamed Saad Zaghloul	63
4	Abeer Bahnsy	59
5	Rabab Mohamed Gaafar	45

6- Natl. Inst. of Laser Enhanced Sci.

Rank	Author Name	No. of Pub
1	Yehia Ahmadi Kh Badr	99
2	Mohamed Abdel Harith Mohamed	98
3	Mona Bakr Mohamed	62

7- Faculty of Veterinary Medicine,

Rank	Author Name	No. of Pub
1	A. M. Abd El-Aty	166
2	Ayman M. Goudah	53
3	Mohamad H. Warda	34

8- Faculty of Agriculture

Rank	Author Name	No. of Pub
1	Hany Abdelaziz El-Shemy	56
2	Radwan S. Farag	48
3	Hossam Saad El-Beltagi	48
4	Gamal S. El baroty	39
5	Nabil Abrahim Hegazi	26

9- Faculty of Oral Dental Medicine

Rank	Author Name	No. of Pub
1	Mohamed A.Shaarawy	61
2	Yehya A. Mostafa	43

Top 5 authors of Cairo University Faculties (According to total no. of citations from Top 50)

1- Kasr El-Aini School of Medicine,

Rank	Author Name	No. of Pub
1	Mohamed A. A. Aboulghar	4548
2	Aly A. Shafik	3431
3	Hesham Al-Inany	2132
4	Gamal Esmat	1901
5	Taymour Mostafa	121

2- Faculty of Science,

Rank	Author Name	No. of Pub
1	Gehad Genidy Mohamed	2352
2	Waheed A. Badawy	2147
3	Mohamad Saada El-Deab	1960
4	Mohamed Himly El-nagdi	1839
5	Yousry Moustafa Issa	1681

3- Faculty of Engineering,

Rank	Author Name	No. of Pub
1	Ahmed M Soliman	4382
2	Amir F. Atiya	2158
3	Said Rezk Grace	1213
4	Amr Amin Adly	706

4- National Cancer Institute,

Rank	Author Name	No. of Pub
1	Hussein Mostafa Khaled	2042
2	Rabab Mohamed Gaafar	1373
3	Abdel Rahman Abu Zekri	1058
4	Abeer Ahmed Bahnsy	602
5	Mohamed Saad Zaghloul	587

5- Faculty of Pharmacy,

Rank	Author Name	No. of Pub
1	Ramy Karam Aziz	2930
2	Mohamed Ali Farag	2126
3	Mohamed T. Khayyal	849
4	Mahmoud Mohamed Ghorab	624
5	Hanan Salah El-Abhar	547

6- Natl. Inst. of Laser Enhanced Sci.,

Rank	Author Name	No. of Pub
1	Mona Bakr Mohamed	3314
2	Yehia Ahmadi Kh Badr	814
3	Mohamed Abdel Harith Mohamed	894

7- Faculty of Veterinary Medicine,

Rank	Author Name	No. of Pub
1	A. M. Abd El-Aty	1498
2	Mohamad H. warda	533
3	Ayman M. Goudah	434

8- Faculty of Agriculture,

Rank	Author Name	No. of Pub
1	Radwan S. Farag	980
2	Gamal S. El baroty	920
3	Hany Abdelaziz El-Shemy	554
4	Hossam Saad El-Beltagi	506

9- Faculty of Oral Dental Medicine

Rank	Author Name	No. of Pub
1	Mohamed A. Shaarawy	786
2	Yehya A. Mostafa	423

Top 5 authors of Cairo University Faculties
(According to h-index from Top 50)

1-Faculty of Engineering,

Rank	Author Name	No. of Pub
1	Ahmed M. Soliman	34
2	Amir F. Atiya	25
3	Said Rezk Grace	18
4	Amr Amin Adly	13

2- Faculty of Science,

Rank	Author Name	No. of Pub
1	Waheed A. Badawy	27
2	Gehad Genidy Mohamed	26
3	Mohamad Saada El-Deab	23
4	Ahmad S. Shawali	21
5	Eid Abd El-rahman Doha	21

3- Kasr El-Aini School of Medicine,

Rank	Author Name	No. of Pub
1	Mohamed A. A. Aboulghar	38
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4- National Cancer Institute,

Rank	Author Name	No. of Pub
1	Hussein Mostafa Khaled	22
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3	Rabab Mohamed Gaafar	15
4	Abeer Ahmed Bahnsy	14
5	Mohamed Saad Zaghloul	14

5- Faculty of Pharmacy,

Rank	Author Name	No. of Pub
1	Mohamed Ali Farag	21
2	Ramy Karam Aziz	17
3	Mohamed T. Khayyal	15
4	Mahmoud Mohamed Ghorab	14

6- Natl. Inst. of Laser Enhanced Sci.

Rank	Author Name	No. of Pub
1	Mona Bakr Mohamed	23
2	Mohamed Abdel Harith Mohamed	18
3	Yehia Ahmadi Kh Badr	16

7- Faculty of Veterinary Medicine,

Rank	Author Name	No. of Pub
1	A. M. Abd El-Aty	20
2	Mohamad H. Warda	13
3	Ayman M. Goudah	12

8- Faculty of Agriculture

Rank	Author Name	No. of Pub
1	Hany Abdelaziz El-Shemy	15
2	Hossam Saad El-Beltagi	15
3	Radwan S. Farag	13
4	Gamal S. El baroty	12

9- Faculty of Oral Dental Medicine

Rank	Author Name	No. of Pub
1	Mohamed A. Shaarawy	18
2	Yehya A. Mostafa	14

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