International Publications Awards Cairo University

Issue III-B

October 2008

International Publication Awards
Cairo University

Dear colleagues,

This is the third issue of the international Publication of Cairo university staff members durian the year 2008.

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

As part of our future Plan, We aspire to build on our current success; as the weightier challenge is still to come . So in order to keep our rank in its high level we are compelled to continue on Publishing high quality research .

Issue III-B, October 2008

We would like to assure you that the administration will spare no effort to support and reinforce these goals. We congratulate all the colleagues who were granted the awards for their international publications of the year 2008 and wish them all the best for their future endeavors.

We are also pleased to inform you that this policy will continue to be in effect for the year 2009.

Prof . Hussein M. Khaled

Vice - President for graduate studies and research
Cairo university

Prof. Hossam Kamel

President
Cairo university

International Publication Awards
Cairo University

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Issue III-B, October 2008

Faculty of Medicine

Name : **Prof . Abdel-Magid Mahfouz Kassem**

Dep. : **Tropical Medicine**

Title : **The Effect of Sedation on the Quality of Upper Gastrointestinal Endoscopy: an Investigator−Blinded, Randomized Study Comparing Propofol with Midazolam**

A. Meining, V. Semmler, A. M. Kassem, R. Sander, U. Frankenberger, M. Burzin, J. Reichenberger, M. Bajbouj, C. Prinz and R. M. Schmid

Journal : **Endoscopy**

ISSN : 0013-726X **Impact Factor :** 3.605

Abstract :

Background and study aims: Sedation with propofol is associated with a high acceptance rate in upper gastrointestinal endoscopy. So far, how− ever, there are no valid data on whether the use of propofol can increase the general quality of the endoscopic examination.

Patients and methods: A total of 60 patients referred for upper gastrointestinal endoscopy were randomized to receive sedation with either midazolam (n = 30) or propofol (n = 30). The maximum dosages permitted were 5 mg of midazo lam and 500 mg of propofol. The examinations were recorded on videotapes, and the quality of upper endoscopy was assessed by videotape analysis by three experienced endoscopists who were all blinded to patient data and the medications used for sedation. A score sheet was used with 18 assessment items that each represented a step of upper gastrointestinal endoscopy and a global score for the entire examination. A scale ranging from 1 (excellent) to 6 (very poor) was used. Data were analyzed on an intention−to−in vestigate basis: inability to perform the proce− dure because of a patient's intolerance of the procedure, for example, was scored as 6 (i. e. very poor).

Results: Patients in the two groups were well matched with respect to demographic and clinical data. Four patients in the midazolam group could not be adequately examined. The median dosage used for sedation was 5 mg midazolam (range 2 ± 5 mg) and 160 mg propofol (range 70 ± 320 mg). When assessments by all three blinded examiners were added together, propofol sedation was found to result in significantly better scores for all parameters except for the assessments of "Z−line/cardia", "duodenal bulb", and "duodenal folds" (all $P < 0.05$, Mann−Whitney U test).

Conclusion: Sedation with propofol might increase the quality of upper endoscopy. This finding may have a significant impact on the selection of the type of sedation, not only in terms of increasing patients' acceptance of the procedure, but also for improving the diagnostic accuracy of upper gastrointestinal endoscopy.

Name : **Prof . Abdel-Rahman Mahmoud El-Nashaar**

Dep. : **Andrology**

Title : **Antibiotic Treatment Can Delay Ejaculation in Patients with Premature Ejaculation and Chronic Bacterial Prostatitis**

Abdel Rahman El-Nashar and Rany Shamloul

Journal : **Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.676

Abstract :

Introduction. Premature ejaculation (PE) is regarded as the most common male sexual disorder. Previous studies reported that prostatic in.ammation was highly prevalent in PE. However, the effect of antibiotic treatment of cases with PE and chronic prostatitis has not been extensively investigated.
Aim. To examine the effect of antibiotic treatment in delaying ejaculation in patients with PE and chronic prostatitis.
Methods. A total of 145 consecutive men attending of secondary premature ejaculation (SPE) were included in this study. Sequential microbiologic specimens were obtained from urine and prostatic . uid. Antibiotics were given for 1 month according to the results of their culture and sensitivity test. All patients were instructed to follow up with our clinic monthly for at least 4 months. At the end of the 4-month follow-up, another prostatic secretion analysis was performed.
Results. Based on expressed prostatic secretion culture and white blood cell (WBC) count, 94 (64.8%) were having chronic bacterial prostatitis. The remaining 51 (35.2%) patients had negative WBC count. Of the 94 patients with SPE and chronic bacterial prostatitis, 20 patients were left untreated and considered as a control group. All 74 patients with PE and chronic prostatitis continued the 1-month treatment duration. Following 1-month antibiotic treatment, all 74 patients with initially positive cultures had sterile .nal cultures (P □0.05). Sixty-two (83.9%) patients showed increases in their ejaculatory latency time and reported good control of their ejaculation and were considered treatment responsive. None of the control group patients experienced any improvement either in their prostatic infection condition or in their ejaculation time. The follow-up of treatment-responsive patients (N □62) revealed no recurrence of PE with negative prostatic culture.
Conclusions. Successful eradication of causative organisms in patients with PE and chronic prostatitis may lead to marked improvement in intravaginal ejaculatory latency time and ejaculatory control.

Keywords :

Premature ejaculation; Prostatitis; Antibiotics

Name : **Prof . Ahmed Ateya Awad**

Dep. : **Andrology**

Title : **Lymphatic Vessel Hydrodissection During Varicocelectomy**

Ahmad Atteya, Medhat Amer, Ahmad AbdelHady, Hatem Al-Azzizi, Esam Ismael, Mohamed Abdel-Gabbar and Rany Shamloul

Journal : **Urology**

ISSN : 0090-4295 **Impact Factor :** 2.13

Abstract :

Hydrocele formation is the most common compli- cation reported after nonmicroscopic varicoce- lectomy. The incidence of this complication varies from 3% to 33% (average about 7%).1 Analysis of the protein concentration of hydrocele fluid has indicated that postvaricocelectomy hydrocele is mainly attributable to lymphatic obstruction.1 At least one half of postvaricocelectomy hydroceles grow to a size large enough to warrant surgical excision secondary to the associated discomfort and size of the hydrocele. The development of a large hydrocele that surrounds the testis with an abnormal insulating layer can impair the efficiency of the countercurrent heat exchange mech- anism, thereby counteracting some of the benefits of varicocelectomy.2 The use of magnification to identify and preserve the lymphatics can eliminate the development of hydrocele after varicocelectomy. In addition, radiographic balloon or coil occlusion techniques also eliminate hydrocele formation. We describe a novel and simple technique to preserve the spermatic cord lymphatics during varicoce- lectomy.

Name : **Dr . Ahmed Mohamed Mukhtar**

Dep. : **Anesthesia**

Title : **The Impact of Maintaining Normal Serum Albumin Level Following Living Related Liver Transplantation: Does Serum Albumin Level Affect the Course? A Pilot Study**

A. Mukhtar, A. EL Masry, A.A. Moniem, M. Metini, A. Fayez and Y.H. Khater

Journal : **Transplantation Proceedings**

ISSN : 0041-1345 **Impact Factor :** 0.962

Abstract :

Hypoalbuminemia in patients with end-stage liver disease persists for weeks even after liver transplantation. Human albumin is widely used for volume replacement, to increase oncotic pressure, to improve organ function, and to promote wound healing. However, these practices are not evidence-based. We prospectively studied the clinical outcome of 40 patients following living related liver transplantation. Patients were randomized to an albumin group (n20), where 20% human albumin was administered to maintain serum albumin level3 g/dL, and a control group (n20), where there was no correction for serum albumin. Hemodynamics and laboratory investigations, fluid administration, blood transfusion, and fluid balance were recorded during the first 5 days in the intensive care unit. Serum albumin level was significantly higher in the albumin group. Heart rate, blood pressure, central venous pressure, and cardiac output did not vary significantly between the groups. There was no significant difference in serum creatinine, creatinine clearance, bilirubin, ALT, AST, prothrombin time, and international normalized ratio between both groups. No significant difference between Tacrolimus level and dose required to maintain therapeutic concentration was noted between both groups. Postoperative course and complications did not vary significantly between both groups. In conclusion, postoperative albumin administration to a target serum albumin3 g/dL does not have additional benefits for the postoperative course in patients scheduled for living related liver transplantation.

Name : Dr . Ahmed Yasser Abo-Madyan

Dep. : Nuclear Medicine

Title : **Evaluation of Calculation Algorithms Implemented in Different Commercial Planning Systems on an Anthropomorphic Breast Phantom Using Film Dosimetry**

Martin Polednik, Yasser Abo Madyan, Frank Schneider, Dirk Wolff, Burkhardt Bannach, Ulrike Lambrecht, André Wallin, Marian Cwiekala, Klaus Maurer, Florian Reif, Frank Lohr, Frederik Wenz, Breast Cancer Working Group (German Cancer Association)

Journal : Strahlentherapie Und Onkologie

ISSN : 0179-7158 **Impact Factor :** 3.68

Abstract :

Purpose: To evaluate the accuracy of dose calculation algorithms of different planning systems for postoperative tangential radiotherapy in breast cancer. Material and Methods: On a CT dataset of an anthropomorphic phantom, a structure set of the left lung, clinical target volume (CTV), planning target volume, heart, and external contour were delineated. The dataset was processed by six radiation oncology centers participating in this multicenter dosimetry project. Conventional plans with two tangential wedged fields were generated in MasterPlan®, Pinnacle®, Eclipse®, TMS®, and PrecisePLAN®. Plan calculations were done using the beam data of local linacs. The dose distributions were verified under local conditions with Gafchromic®-EBT films.
Results: In all planning systems, deviations between calculation and measurement were around ±3% in the CTV in the measured plane. Only small areas with deviations of ±5% were detected.
Pencil-beam (PB) calculations overestimated the dose inside the lung by up to 23%. Collapsed cone (CC) underestimated the lung dose by up to 6%Conclusion: CC calculates the dose distribution more accurately than PB. Inside regions with electron disequilibrium, however, the dose is slightly underestimated.

Keywords :

Dose calculation; Collapsed cone; CC; Pencil beam; PB; Film dosimetry

Name : **Prof . Azza Aboul Enein**

Dep. : **Pathology**

Title : **Factors Affecting Platelet Yield and Their Impact on the Platelet Increment of Patients Receiving Single Donor PL T Transfusion**

A. Aboul Enein, E. A. Hussein, S. EI Shafie and M. Hallouda

Journal : **Clinical Apheresis**

ISSN : 0733-2459 **Impact Factor :** 1.333

Abstract :

The aim of this study was to analyze the impact of various donor and machine parameters on PLT yield in 127 PL T apheresis procedures, to optimize PL T yield achieving clinical and economic advantages. One hundred and twenty-seven apheresis procedures were analyzed. Age, gender, volume processed, Hb, and PLT precounts were included as donor predicting variables. AC infusion rate, processing time, and plasma volume collected with PLTs were assessed as machine parameters. We evaluated the post-transfusion effectiveness in 23 patients with thrombocytopenia, studying the effect of PLT dose, ABO group, and PLT storage time. Females gave higher yields, compared to males, $P < 0.01$. PLT yield correlated positively with PLT precount ($r = 0.512$), and TBV ($r = 0.404$), and negatively with donor preapheresis Hb ($r = -0.306$). Processing time and AC infusion rate had a positive impact on PLT yield. Post-apheresis decrease in PLT count was 53.6 ± 26.3 X 1011. Donors with Hb 2: 12 g/dl, donated safely. Most of the complications were citrate related (13.4% of all procedures). PLT increments in transfused patients correlated positively with the number of units transfused ($r = 0.41$), and negatively with PLT storage days ($r = -0.342$). PLT increments in patients receiving ABO-compatible PLTs were 75% higher, compared to the increments in patients receiving incompatible PL Ts. PL T count and volume processed were the main predictors of PL T yield. Increasing the processing time, the AC infusion rate, or the volume of plasma obtained with PLTs can increase PLT yields. High PLT dose, short storage time, as well as ABO compatibility should be considered during PLT transfusion

Keywords :

PL T apheresis; donor CBC; blood group; PL T dose-storage days

Name : **Prof . Gamal El-Din Esmat**

Dep. : **Tropical Medicine**

Title : Serum α-foetoprotein Level Predicts Treatment Outcome in Chronic Hepatitis C

Sylvia Males, Rita Raafat Gacf, Gamal Esmaf, Hasan Abobakr, Mohamed An wart, Claire Rekacewicz, Mostafa El Hoseiny, Khaled Zalata, Mohamed Abde/-Hamid6, Pierre Bedossif, Stanislas PoP, Mostafa K Mohamecf and Arnaud Fontanet.

Journal : **Antiviral Therapy**

ISSN : 1359-6535 **Impact Factor :** 4.982

Abstract :

Objectives: To analyse the association between serum a-foetoprotein (AFP) levels and sustained virological response (SVR) in treated patients.
Methods: One-hundred patients with chronic hepatitis C were treated with pegylated interferon a-2a plus ribavirin for 48 weeks. The primary endpoint was SVR. Linear regression analysis was performed to identify clinical, biological. and histological factors affecting baseline AFP levels. The association between pretreat¬ment serum AFP and SVR was assessed by multivariate logistic regression analysis.
Results: Of 100 patients. 95 were infected with genotype 4, one with genotype 1, and four with undetermined genotype. The median serum AFP level was 4.5 ng/ml and AFP values ranged from 1.2 to 49.8 ng/ml. In multivariate analysis. higher fibrosis stage and higher steatosis score were independently associated with higher serum AFP
levels. SVR rate was 61.0% (61/100), and was lower for patients with AFP levels above rather than below the median value (40.8% versus 80.4%, respectively, P< 0.001). In multivariate analysis, including adjustment for age. gender, body mass index. steatosis score. fibrosis stage, ALT level, haemoglobin level, clotting time. HCV RNA viral load, and treatment dose received, a baseline serum AFP level above the median value was associated with a lower SVR rate (OR [95% CI]=0.10 [0.03-0.42], P< 0.001). None of the seven patients with increased (above 15 ng/ml) pretreatment AFP achieved SVR.
Conclusions: In this study. higher baseline serum AFP levels independently predicted a lower SVR rate among patients with chronic hepatitis C. If confirmed with genotypes other than 4, these findings would suggest adding serum AFP to the list of factors predictive of treatment response.

Name : **Prof . Gamal El-Din Esmat**

Dep. : **Tropical Medicine**

Title : Evaluation of Serum Biomarkers of fibrosis and Injury in Egyptian Patients with Chronic Hepatitis C

Gamal Esmat, Mohamed Metwally, Khalid R. Zalata, Shahinaz Gadalla, Mohamed Abdel-Hamid, Amr Abouzied, Abdel-Aziz Shaheen, Maissa El-Raziky, Hani Khatab, Sherif El-Kafrawy, Nabiel Mikhail, Laurence, Magder, Nezam H. Afdhal and G. Thomas Strickland

Journal : **Hepatology**

ISSN : 0168-8278 **Impact Factor :** 6.073

Abstract :

Background/Aims: We evaluated whether surrogate serum biomarkers for liver injury are comparable to liver biopsy in Egyptian patients with hepatitis C virus (HCV) infection. Subjects: Two hundred and twenty Egyptian patients, 91% infected with genotype-4 HCV, undergoing liver biopsy dur- ing evaluation for interferon/ribavirin therapy. Methods: Liver biopsy scored by the Ishak method was compared to biochemical tests, platelet count and two fibrosis biomarkers: hyaluronic acid (HA) and YKL-40. Univariate and logistic regression analyses determined independent pre- dictors of fibrotic, inflammatory, and fatty changes. Biomarkers were evaluated for ability to differentiate between severe fibrosis/cirrhosis and no/mild fibrosis. Results: Although increasing age, HA, YKL-40, AST, reduced platelet count, and AST and HA/ platelet count ratios were associated with fibrosis by univariate analysis, the other variables were not significant after controlling for HA ($p = 0.0001$) and age ($p = 0.004$). Although age and some biomarkers were associated with inflammation, none remained significant after controlling for fibrosis. YKL-40 ($p = 0.04$) and aspartate aminotransferase ($p = 0.05$) remained associated with steatosis after controlling for fibrosis. Conclusions: In Egyptians with chronic HCV, young patients with low levels of HA are at very low risk of fibrosis. This can limit the number of liver biopsies to those whose clinical findings conflict with the biomarker results.

Keywords :

Hepatitis C virus; HCV; Fibrosis; Cirrhosis; Morbidity assessment; Liver biopsy; Serum hepatic fibrosis markers; Hyaluronic acid; YKL-40

Name : Dr . Ghada Nasr El-Deen Radwan

Dep. : Community Medicine

Title : DRD2/ANKK1 TaqI Polymorphism and Smoking Behavior of Egyptian Male Cigarette Smokers

Ghada N. Radwan, Maged El- Setouhy, Mostafa K. Mohamed, Mohamed Abdel Hamid, Ebenezer Israel, Salwa Abdel Azem, Omima Kamel and Christopher A. Loffre

Journal : Nicotine & Tobacco Research

ISSN : 1462-2203 **Impact Factor :** 2.299

Abstract :

Little is known about the genetic contribution to cigarette smoking and nicotine addiction in Egypt. The dopamine D2 receptor gene contains a TaqI repeat fragment length polymorphism creating two alleles with functional significance, DRD2*A1 and DRD2*A2. We investigated the relationship between these alleles and tobacco use in a study of 389 Egyptian male current smokers (mean age 540 years; SD512). Participants were interviewed in 2004 on their smoking behaviors and quit attempts, and were given the Fagerstro¨ m Test for Nicotine Dependence (FTND). Blood samples were obtained and genotyped for DRD2 A1and A2 alleles. The frequencies of A1/A2, A1/ A2, and A2/A2 genotypes were 6%, 29%, and 65%, respectively. We found no statistically significant association between genotype and age at onset of smoking, years of smoking, FTND score, or average number of cigarettes smoked per day. DRD2 genotype was associated with the number of cigarettes smoked in the past 48 hr (42.2 in A1 carriers vs. 37.6 in A2,=.03), the previous quit duration (28% in A1 vs. 40% in A2 quit for more than 1 month, p=.05), and the depth of inhalation (82% in A1 vs. 72% in A2 inhaled the smoke deeply, p=.03). Logistic regression analysis including DRD2 genotype, FTND score, age at smoking initiation, marital status, and education as predictors showed that maximum duration of quit time was associated with FTND score (p=.003), DRD2 genotype (p=.01), marital status (p=.03), and age at smoking initiation (p=. 04). These findings suggest a modest association between DRD2 genotype and quitting behavior in male cigarette smokers in Egypt.

Name : **Dr . Hanaa Mostafa El-Karaksy**

Dep. : **Pediatrics**

Title : **Safety and Efficacy of Rifampicin with Cholestatic Pruritus**

Hanaa El-Karaksy, Samah Mansour, Rokaya El-Sayed, Mona El-Raziky, Nehal El-Koofy and Gamal Taha

Journal : **Indian J. of Pediatrics**

ISSN : 0019-5456 **Impact Factor :**

Abstract :

Objective. The present study was aimed at verifying the safety and efficacy of rifampicin in ameliorating pruritus in cholestatic children.

Methods. Twenty-three Egyptian children (14 boys and 9 girls), suffering from intractable pruritus of cholestasis, were included. Rifampicin was started at a dose of 10 mg/Kg/day in two divided doses and increased gradually to a maximum of 20 mg/Kg/ day if there was no response. Liver function tests were followed up weekly.

Results. Seventeen patients (74%) showed improvement of pruritus with rifampicin. None of the patients showed any deterioration in liver functions.

Conclusions. Rifampicin in a dose of 10-20 mg/Kg/day is safe and effective in ameliorating uncontrollable pruritus in children with persistent cholestasis.

Keywords :

Cholestasis; Pruritus; Rifampicin safety; Rifampicin efficacy; Rifampicin hepatotoxicity.

Name : **Dr . Hanaa Mostafa El-Karaksy**

Dep. : **Pediatrics**

Title : **Assessment of Hepatic Fibrosis in Pediatric Cases with Hepatitis C Virus in Egypt**

Manal A. El-Hawary, Mona S. El-Raziky, Gamal Esmat, Hanan Soliman, Amr Abouzied, Maissa El-Raziky, Wafaa El-Akel, Rokaya El-Sayed, Fatma Shebl, Abdel Aziz Shaheen and Hanaa El-Karaksy

Journal : **World J. of Gastroenterology**

ISSN : 1007-9327 **Impact Factor :**

Abstract :

AIM: To assess hepatic fibrosis and factors associated with its progression in children with HCV infection.

METHODS: At the Hepatology Unit, Cairo University Children's Hospital, a single liver biopsy was performed to 43 children with HCV infection after an informed consent between 1998-2004. Their mean age at liver biopsy was 8.67 ± 4.3 years.

RESULTS: Among the 43 patients' biopsies, 12 (27.9%) were having no fibrosis, 20 (46.5%) mild fibrosis and 11 (25.6%) moderate to severe fibrosis. The median time for development of fibrosis was estimated to be 5.5 years. Developing fibrosis was significantly associated with shorter duration from first detected ALT elevation to biopsy (12 mo vs 1.2 mo, P = 0.015) and having higher levels of direct serum bilirubin (0.3 mg/dL vs 0.5 mg/dL, P = 0.048). No association was found between fibrosis stage and the presence of co-morbid conditions (P = 0.33).

CONCLUSION: Hepatic fibrosis was present in 72.1% of children with HCV infection. The development of fibrosis was associated with higher levels of direct serum bilirubin. There was no significant association between fibrosis and age, duration of infection, risk factors, co- morbid conditions and most biochemical parameters.

Keywords :

Children; Egypt; Fibrosis; Hepatitis C virus; liver.

Name : **Dr . Hanaa Mostafa El-Karaksy**

Dep. : **Pediatrics**

Title : **Prevalence and Risk Factors of Asymptomatic Hepatitis C Virus Infection in Egyptian Children**

MS El-Raziky, M El-Hawary, G. Esmat, A. M. Abouzied, N. El-Koofy, N. Mohsen, S. Mansour, A. Shaheen, M. Abdel Hamid and H El-Karaksy

Journal : **World J. of Gastroenterology**

ISSN : 1007-9327 **Impact Factor :**

Abstract :

AIM: To identify the prevalence, risk factors and manifestations of asymptomatic hepatitis C virus (HCV) infection in Egyptian children.

METHODS: Children at the age of 1-9 years were screened for HCV antibodies and alanine aminotransferase (ALT) levels. Every child with elevated ALT and/or detectable HCV antibodies was tested for HCV RNA by RT-PCR and compared with two negative controls for risk factors and signs and symptoms of liver disease.

RESULTS: We screened 1042 children, six of them had elevated ALT, negative HCV antibody and positive RNA, likely representing acute hepatitis C cases. Fifteen children were HCV seropositive, 5 of them were HCV RNA positive. Asymptomatic HCV infection was present in 2.02% (positive results for either HCV antibodies or HCV-RNA or both). Symptoms such as diarrhea, abdominal pain, history of fatigue and school absence because of illness and risk factors such as dental care were significantly more common among HCV positive cases than among controls. None of the HCV positive children was diagnosed as having signs of advanced liver disease upon clinical or ultrasonographic examination.

CONCLUSION: Asymptomatic HCV infection is detectable in 2.02% Egyptian children.

Keywords :

Hepatitis C virus; Child; Egypt; Prevalence.

Name: **Prof. Hazem Mahmoud Atta**

Dep.: **Andrology Sexology and sexually transmitted diseases**

Title: Therapeutic Potential of Bone Marrow-Derived Mesenchymal Stem Cells on Experimental Liver Fibrosis

M.T. Abdel Aziz, H.M. Atta, S. Mahfouz, H.H. Fouad, N.K. Roshdy, H.H. Ahmed, L.A. Rashed, D. Sabry, A.A. Hassounaand N.M. Hasan

Journal: Clinical Biochemistry

ISSN: 0009-9120 **Impact Factor:** 2.331

Abstract:

Objective: To study the effect of mesenchymal stem cells (MSC) on experimental liver fibrosis in rats.
Design and method: MSC were derived from bone marrow obtained from femoral and tibial bones of male albino rats. MSC were separated, grown, and propagated in culture for 4 weeks and were characterized morphologically and by detection of CD29 by RT-PCR. They were then infused into the tail vein of female rats that received CCl4 injection to induce liver fibrosis. Rats were divided into 4 groups: control, CCl4, CCl4 plus MSC, and MSC. Liver tissue was examined histopathologically and liver functions (ALT and serum albumin) were estimated for all groups. Y-chromosome gene (sry) was assessed by PCR in liver tissue of the female rats to confirm uptake of the male stem cells. Hydroxyproline content in liver tissue was assessed by chemical methods and expression of the collagen gene (type I) was detected as a marker for liver fibrosis. Results of the present study showed that MSC have a significant antifibrotic effect as evidenced by the significant decrease in liver collagen gene expression as well as the decrease in hydroxyproline content in the CCl4/MSC group ($p < 0.001$) compared to the CCl4 group. The Y-chromosome gene (sry) was detected by RT-PCR in the CCl4/MSC group, but was not detected in control group and other groups. The CD29 gene was expressed in MSC culture, and this confirmed the efficiency of isolation and propagation of MSC in culture. With regard to liver function, there was also a significant improvement and elevation of serum albumin in the CCl4/MSC group compared to the CCl4 group ($p < 0.05$). As regard to the liver enzyme ALT, there was a decrease of its level in the CCl4/MSC group compared to the CCl4 group. However, this was statistically nonsignificant ($p > 0.05$). In conclusion, MSC have a potential therapeutic effect against the fibrotic process through their effect in minimizing collagen deposition in addition to their capacity to differentiate into hepatocytes.

Keywords:

Liver fibrosis; CCL4; MSCs

Name : **Prof . Hesham Gaber Al-Inany**

Dep. : **Obstetrics & Gynecology**

Title : **A Prospective Randomized Study Comparing Coasting with GnRH Antagonist Administration in Patients at Risk for Severe OHSS**

Mohamed A Aboulghar, Ragaa T Mansour, Yahia M Amin, Hesham G Al-Inany, Mona M Aboulghar and Gamal I Serour

Journal : **Reproductive BioMedicine Online**

ISSN : 1472-6483 **Impact Factor :** 3.21

Abstract :

This work evaluated possible advantages of gonadotrophin-releasing hormone (GnRH) antagonist administration as an alternative to coasting in prevention of severe ovarian hyperstimulation syndrome (OHSS) in women undergoing IVF/ intracytoplasmic sperm injection. A prospective randomized study comparing coasting (group A) (n = 96) and GnRH antagonist administration (group B) (n = 94) in patients at risk of OHSS was performed. The primary outcome measure was high quality embryos. The secondary outcome measures were days of intervention, number of oocytes, pregnancy rate, number of cryopreserved embryos and incidence of severe OHSS. There were significantly more high quality embryos (2.87 ± 1.2 versus 2.21 ± 1.1; P < 0.0001), and more oocytes (16.5 ± 7.6 versus 14.06 ± 5.2; P = 0.02), in group B as compared with group A. There were more days of coasting as compared with days of antagonist administration (2.82 ± 0.97 versus 1.74 ± 0.91; P < 0.0001). In conclusion, GnRH antagonist was superior to coasting in producing significantly more high quality embryos and more oocytes as well as reducing the time until HCG administration. There was no significant difference in pregnancy rate between the two groups. No OHSS developed in either group.

Keywords :

Coastin; GnRH antagonis; High quality embryo; OHS; Randomized study

Name : **Prof . Hesham Gaber Al-Inany**

Dep. : **Obstetrics & Gynecology**

Title : **Paternal Age and Outcome of Intracytoplasmic Sperm Injection**

Mohamed A Aboulghar, Ragaa T Mansour, Hesham G Al-Inany, Ahmed M Abou-Setta, Mona M Aboulghar, Latouna Mourad and Gamal I Serour

Journal : **Reproductive BioMedicine Online**

ISSN : 1472-6483 **Impact Factor :** 3.21

Abstract :

In a retrospective study, the outcome of intracytoplasmic sperm injection (ICSI) in two age groups of men was studied. Couples with male partners aged 50 years and over (group A) (n = 227) with mean age of 53 ± 5 years were compared with couples with younger age-group male partners (group B) (n = 227) with a mean age of 38.4 ± 5.8 years. The control group of younger men was selected so that the women's age matched between the two groups. There was no significant difference in pregnancy rate between the two groups (37.9 versus 36.6%; OR = 1.06, 95% CI = 0.72−1.55). There was also no significant difference in the pregnancy rate between men aged 60 years and over as compared with men aged 50 to 59 years (OR = 1.00, 95% CI 0.74−1.37). However, the long-term outcome of these pregnancies needs further investigation. Semen analysis showed significantly lower motility in group A (37.4 ± 20.4) versus group B (46.4 ± 15.5; P < 0.0001). There was a significantly higher fertilization rate in younger men (P < 0.0001; OR = 1.36, 95% CI = 1.19−1.55), but this did not affect the pregnancy rate. In conclusion, it appears that paternal age has no effect on the pregnancy rate after ICSI.

Keywords :

IC; Maternal age; Paternal age; Pregnancy

Name: **Prof. Hesham Gaber Al-Inany**

Dep.: **Obstetrics and Gynecology**

Title: **Clinical Outcome Following Stimulation with HMG Versus Highly Purified HMG in Patients Undergoing ICSI**

Ismail Aboul Foutouh, Sherif Khattab, Iman Abdel Mohesn, Mohamed Moaz and Hesham Al-Inany

Journal: Reproductive BioMedicine Online

ISSN: 1472-6483 **Impact Factor:** 3.206

Abstract:

Current purification processes allow the production of highly purified human menopausal gonadotrophin (HP-HMG), with human chorionic gonadotrophin (HCG) constituting most of its LH-like activity. This retrospective study aimed to compare the effectiveness of HP-HMG to the widely used traditional human menopausal gonadotrophin (HMG) preparation. A total of 174 women undergoing intracytoplasmic sperm injection cycles were allocated to either HMG or HP-HMG for ovarian stimulation. The number of mature oocytes was significantly higher in the HP-HMG group (14.72 ± 7.81) than in the HMG group (12.15 ± 11.07) ($P < 0.05$). However, the number of good quality embryos was not significantly different between both groups (HMG: 1.65 ± 1.54; HP-HMG: 1.78 ± 1.41). Similarly, there was no statistically significant difference in number of embryos transferred per woman (HMG: 3.95 ± 1.87; HP-HMG: 4.27 ± 1.60). The pregnancy rate per woman was 38.39% versus 51.79% in the HMG- and HP-HMG-treated groups respectively. These findings suggest that HP-HMG produces more mature oocytes than ordinary HMG, but similar pregnancy rates.

Keywords:

HMG; HP-HMG; ICSI; Oocytes; Ovarian Stimulation; Pregnancy

Name: **Prof. Hesham Gaber Al-Inany**

Dep.: **Obstetrics and Gynecology**

Title: **Gonadotrophin-Releasing Hormone Antagonists for Assisted Conception: A Cochrane Review**

HG Al-Inany, AM Abou-Setta and M Aboulghar

Journal: Reproductive BioMedicine Online

ISSN: 1472-6483 **Impact Factor:** 3.21

Abstract:

Gonadotrophin-releasing hormone (GnRH) antagonists suppress gonadotrophin secretion resulting in dramatic reduction in treatment cycle duration. Assuming comparable clinical outcomes, these benefits may justify changing the standard long GnRH agonist protocol to GnRH antagonist regimens. To evaluate the evidence, databases (e.g. Cochrane Library, MEDLINE, EMBASE) were electronically searched, hand searches were performed, and manufacturers in the field were contacted. Twenty-seven randomized controlled trials (RCT) fulfilled inclusion criteria for comparison of GnRH antagonist with long GnRH agonist protocol. Clinical pregnancy rate and ongoing pregnancy/live-birth rate were significantly lower in the antagonist group ($P = 0.009$; OR = 0.83, 95% CI 0.72–0.95 and $P = 0.02$; OR = 0.82, 95% CI 0.68–0.97 respectively). Conversely, incidence of severe OHSS was significantly reduced with the antagonist protocol ($P = 0.01$; OR = 0.60, 95% CI 0.40–0.88), and interventions to prevent OHSS were administered more frequently in the agonist group ($P = 0.03$; OR = 0.43,95% CI 0.20–0.92). Concluding, GnRH antagonist protocols are short, simple, with good clinical outcomes and significant reduction in severe OHSS incidence and gonadotrophin amount; however, the lower pregnancy rate compared with the GnRH agonist long protocol necessitates counselling subfertile couples before recommending change from GnRH agonist to antagonist.

Keywords:

Agonist; Antagonist; GnRH; IVF; Meta-analysis

Name : **Prof . Hosni Khairy Salem**

Dep. : **Urology**

Title : **Management of High-grade Renal Injuries in Children after Blunt Abdominal Trauma: Experience of 40 Cases**

Hosni Khairy Salem Hani A.A. Morsi and Ahmad Zakaria

Journal : **Pediatric Urology .**

ISSN : 1477-5131 **Impact Factor :**

Abstract :

Objective: We present our experience of management of high-grade renal trauma in a pediatric population, including assessment of the long-term function and morphology of the ipsilateral kidney. Patients and methods: From 1997 to 2005, 40 children with high-grade renal injury (III, IV, V)after blunt abdominal trauma were managed. Initial evaluation included vital signs, color of urine, hemoglobin (Hb%), hematocrit, serum creatinine and computed tomography (CT). Follow up included vital signs, urine analysis, Hb%, CT, intravenous pyelogram and renogram . Results: One patient needed superselective embolization due to continuing hemorrhage in spite of conservative treatment. Internal stenting plus percutaneous tube drain was indicated in three cases due to progressive extravasation. Exploration was indicated in four cases, one at presentation due to hemodynamic instability which ended in nephrectomy; the other three were successfully repaired. Conservative treatment was successful in 32 cases (80%). Blood transfusion was indicated in 16 cases (40%). Length of hospital stay was 4e20 days (mean 12.1). At the last follow up (range 1e8 years, mean 3.5), scars were detected in 10 cases, while all showed normal levels of Hb% and creatinine. No patient developed hypertension. Apart from in the nephrectomy case, the ipsilateral kidney showed split function of 40e50%. Conclusion: After exclusion of hemodynamic instability and continuing hemorrhage, conservative treatment is successful in 80% of patients. Internal stenting with or without percutaneous drainage is indicated if there is progressive urinoma. Angioembolization is successful in selected cases.

Name : **Prof . Hosni Khairy Salem**

Dep. : **Urology**

Title : **Tubeless Percutaneous Nephrolithotomy in Children**

H. Khairy Salem, H.A. Morsi, A. Omran, M.A. Daw

Journal : **Pediatric Urology**

ISSN : 1477-5131 **Impact Factor :**

Abstract :

Objective: To assess the effectiveness of tubeless percutaneous nephrolithotomy (PCNL) as an alternative to extracorporeal shock-wave lithotripsy (ESWL) in the management of urolithiasis in children. Materials and methods: In 2003e2005 we operated on 20 cases that met the inclusion criteria. Extensive follow-up tests were performed in all patients; stone clearance was defined as the absence of residual fragments on plain abdominal X-ray and renal ultrasound. Pain-scale ruler (0e10) was used to evaluate pain postoperatively. Comparison was made with a group of 10 patients with very similar criteria operated upon with PCN tube. Results: Mean follow-up period was 9 months (3-18 months) and mean age 7.5 years (4-15 years). Mean operative time was 115 min (45-180) with no significant bleeding intra- or postoperatively. Conversion to open surgery was necessary in one case. There were no major perioperative complications. In the tubeless group the pain score was 3e6 (mean 4.6), there
was no need for IV analgesia, and median hospital stay was 1.7 days (1-4 days); urine leakage occurred in one patient. In the group with PCN tube the pain score was 5-8 (mean 5.5), IV analgesia was mandatory in four patients, and median hospital stay was 2.8 days (3-4 days); urine leakage occurred in five patients and a small residual stone was detected in one child.
Conclusion: Tubeless PCNL in children has the advantages of being less painful, less troublesome and shortening the hospital stay of the child. The decision to use this procedure is best made intraoperatively and depends on the experience of the surgeon.

Name : **Prof . Hosni Khairy Salem**

Dep. : **Urology**

Title : **Radical Cystectomy with Preservation of Sexual Function and Fertility in Patients with Transitional Cell Carcinoma of the Bladder: New Technique**

Hosni Khairy Salem

Journal : **Urology**

ISSN : 0919-8172 **Impact Factor :** 0.691

Abstract :

Objectives: Radical cystectomy is the standard treatment for patients with invasive bladder carcinoma. Preservation of sexual function and fertility are important for surgery acceptance in young patients with this disease, and part of the prostate is generally preserved for this reason; however, this may compromise the radical nature of the surgery. Herein a novel technique of radical cystectomy with preservation of the vas deferens only is described aimed at preservation of sexual function and better cancer control.

Methods: Between March 2002 and February 2004, four potent male patients with muscle invasive transitional cell carcinoma of the bladder underwent nerve-sparing radical cystectomy with urinary diversion. The bladder, prostate with prostatic urethra, regional lymph nodes and seminal vesicles were removed while the vas deferens was preserved until its terminal end and anastomosed (in the perineum) to the bulbar urethra (end to side). The diversion was ureterocolic in three patients and ileal conduit in one patient. The median age of the patients was 45.0 years (range 35–55). The mean follow-up was 35.5 months (range 23–46 months).

Results: There was no mortality. All patients were free of the disease (no local or distant recurrence) at the last follow-up. All patients reported adequate sexual function with normal erections and satisfactory intercourse similar to that reported before surgery. Two patients maintained antegrade ejaculation allowing procreation in one case.

Conclusion: This technique allows preservation of sexual function in nearly all cases with better oncological outcome than any other techniques of radical cystectomy aimed at preservation of sexual function.

Keywords :

Bladder; Cancer; Cystectomy; Fertility; Impotence

International Publications Awards
Cairo University

Name : **Prof . Hussein Mohamed Ghanem**

Dep. : **Andrology**

Title : **Experience with Tube {Promedon} Malleable Penile Implant**

Ahmad Fathy, Rany Shamloul, Amr AbdelRahim Ashraf Zeidan, Refaat El-Dakhly and Hussein Ghanem

Journal : **Urologia**

ISSN : 0042-1138 **Impact Factor :** 0.709

Abstract :

Introduction The main advantages of semirigid penile prosthesis are simple implantation, ease of use, very low risk of mechanical failure and more financial suitability for patients in developing countries. Aim: To evaluate reliability and safety of Tube Penile prosthesis in the surgical treatment of erectile dysfunction. Patients and methods: This retrospective case series was conducted on 83 patients who underwent Tube (Promedon) penile implants surgeries between 2001 and 2006. The choice of Promedon penile implant was determined by the patient himself. Strict Infection control measures were applied. Patients were followed up for stability of vital signs and discharged within 72 hours. Results: Successful sexual intercourse was possible for 75 (90.4%) of cases. Common post operative complaints were: prosthesis too short 27 cases (32.5%) not happy with the appearance of the penis in 8 cases (9.6%) non specific pain which subsided spontaneously in 20 cases (24%) in which no further intervention was done apart from reassurance.79 (95.2%) patients were on regular follow up for the first year and the rest dropped out. None of the patients experienced prosthetic infection postoperatively. Crural cross perforation (4%) was managed intraoperatively. Hematomas (1.6%) were managed conservatively. Retarded ejaculation (10%) and penile hypothesia (0.8%) resolved spontaneously within six months in all cases. Conclusion The Promedon malleable penile prosthesis is reliable and safe in the surgical treatment of erectile dysfunction.

Keywords :

Erectile dysfunction; Promedon malleable penile prosthesis; Semirigid penile prostheses

Name : **Prof . Hussein Mohamed Ghanem**

Dep. : **Andrology**

Title : **Structured Management and Counseling for Patients with a Complaint of a Small Penis**

Hussein Ghanem, Rany Shamloul, Fathy Khodeir, Hany ElShafie, Amr Kaddah and Ihab Ismail

Journal : **Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.676

Abstract :

Introduction. Penile augmentation surgery has become increasingly common though there is no consensus about the management strategy for men with a complaint of small penis.
Aim. To introduce and evaluate the outcome of a structured management and counseling protocol for patients with a complaint of a small-sized penis. Methods. A structured protocol for consultation and management of (physically normal) patients with a complaint of a small penis through a descriptive study comprised of a series of 250 patients.
Main Outcome Measures. Percentage of patients who elect to undergo penile augmentation surgery.
Results. Only nine patients (3.6%) chose to seek further surgical intervention. Two had a buried penis, two had true micropenis and five had normal penile size.

Keywords :

Small penis; Penile augmentation; Impotence

International Publications Awards
Cairo University

Name: Prof. Ilham Youssry Mohamed

Dep.: Pediatrics

Title: Skin Iron Concentration: A Simple, Highly Sensitive Method for Iron Stores Evaluation in Thalassemia Patients

Ilham Youssry, Nabil A. Mohsen, Olfat G. Shaker, Ahmed El-Hennawy, Rania Fawzy, Nagwa M. Abu-Zeid and Amal El-Beshlawy

Journal: Hemoglobin

ISSN: 0363-0269 **Impact Factor:** 0.516

Abstract:

Iron overload is a potentially fatal complication in thalassemia patients. Accurate assessment of body iron is of utmost importance for these patients. The available methods for iron stores evaluation have limitations. We assessed biochemically the skin iron concentration (SIC) and determined the relation between the hepatic and skin iron level in thalassemia major patients to develop a simple, sensitive, quantitative measure of the body iron stores. Thirty-one cases with thalassemia major were assessed for iron overload. Liver and skin biopsies were performed for the patients and skin biopsies were taken from the 31 controls. The biopsies were subjected to biochemical assay of iron and histologic sections were examined. The SIC of the studied cases was significantly higher than that of the control group with a mean of 2.705 ± 1.14 and 0.275 ± 0.13 mg/g dry skin weight, respectively, $p < 0.001$. There was significant correlation between the SIC and the liver iron concentration (LIC) ($r = 0.43$, $p = 0.01$). The amount of liver iron is equivalent to [(3.5 × SIC) + 12.9]. With the use of this equation, we could reliably estimate an LIC value as high as 21.2 mg/g dry liver weight with a standard error of 4.07. Biochemical assay of the skin iron concentration is a reliable quantitative indicator of the body iron stores in patients with thalassemia major

Keywords:

Liver iron; Skin iron; Transfusional iron overload; Thalassemia

Name : **Dr . Manal Mohamed Kamal**

Dep. : **Clinical and Chemical Pathology**

Title : **Subclinical Hyperthyroidism as a Potential Factor for Dysfunctional Uterine Bleeding**

Abdel Hamid Attia, Dalia Youssef, Neamat Hassan, Mohamed El-Meligui, Manal Kamal and Hesham Al-Inany

Journal : **Gynecological Endocrinology**

ISSN : 0951-3590 **Impact Factor :** 0.995

Abstract :

Objective: To evaluate the functional status of the thyroid gland in apparently euthyroid women with dysfunctional uterine bleeding.

Materials and methods: Forty apparently euthyroid women with menorrhagia and no pathologic lesion in the genital tract were compared with 20 women having normal menstrual cycles as controls. All women underwent hormonal evaluation: serum total and free triiodothyronine (T3), thyroxine (T4), thyroid-stimulating hormone (TSH) and serum prolactin.

Results: Statistically significant differences were observed in the values of TSH, total T3, free T3, free T4 and total T4 between the menorrhagia and the control group. Prolactin was increased significantly in the menorrhagia group.

Conclusion: Subclinical hyperthyroidism can be a potential risk factor for dysfunctional uterine bleeding. Other studies are needed to confirm our findings.

Keywords :

Menorrhagia; Thyroid hormones; Hyperthyroidism; Prolactin

Name : **Dr . Manal Mohamed Kamal**

Dep. : **Clinical and Chemical Pathology**

Title : **Clinical Significance of Serum Concentration of Anti-Müllerian Hormone in Obese Women with Polycystic Ovary Syndrome**

Samir El-Halawaty, Ahmed Rizk, Manal Kamal, Mona Aboul Hassan, Heba Al-Sawah, Olfat Noah and Hesham Al- Inany

Journal : **Reproductive BioMedicine**

ISSN : 1472-6483 **Impact Factor :** 3.21

Abstract :

In the human ovary, expression of anti-Müllerian hormone (AMH) is detected primarily in granulosa cells of preantral and small antral follicles. The aim of this study was to compare serum AMH measurements in obese women with polycystic ovary syndrome (PCOS) with those in obese normo-ovulatory women and to evaluate the role of AMH as a predictor of ovulation induction by clomiphene citrate compared to FSH. Sixty-eight obese women with PCOS were compared to 17 normo- ovulatory obese women. All women had a body mass index greater than 30 kg/m2. Women with PCOS received clomiphene citrate (150 mg/day) for 5 days starting from day 3 of cycle and were subdivided into responsive and non-responsive groups. There was a significant difference in AMH concentration between women with PCOS and the control group ($P < 0.05$) and also between women with PCOS who responded to clomiphene citrate and those who did not ($P < 0.01$). A value of 1.2 ng/ ml AMH could be used to predict response to clomiphene citrate in obese women with PCOS (sensitivity 71%, specificity 65.7%). AMH production increases in women with PCOS compared to controls. AMH measurement could also be useful in the prediction of ovarian response to clomiphene citrate.

Keywords :

Anti-Müllerian hormone;Clomiphene citrate; Obesity; Ovulation induction; Polycystic ovary syndrome

International Publications Awards
Cairo University

Name : **Prof . Mohamed Ahmed El-Daly**

Dep. : **Ophthalmology**

Title : **The Socioeconomic Impact Among Egyptian Glaucoma Patients**

Mohamed Eldaly, Mostafa Hunter and Mohamed Khafagy

Journal : **Ophthalmology**

ISSN : 0007-1161 **Impact Factor :** 2.524

Abstract :

Background/aim: To evaluate the economic burden of intraocular pressure (IOP)-lowering medications on Egyptian patients with glaucoma, in addition to studying the social grounds of glaucoma education.
Methods: In a cross-sectional observational study, the clinical and socioeconomic data were collected from 68 glaucomatous patients who were attending the outpatient clinics of Cairo University Hospital, through interviews, questionnaires, and clinical examinations.
Results: Patients had a mean IOP of 22.9 mm Hg (SD 11.5). Just under half the patients had an IOP of over 30 mmHg although 88% were on medical treatment; average of 2.1 medications (SD 0.8). Patients had been spending 79.5 LE (SD 95.3) on glaucoma medications a month, which equals 30.1% of their monthly income. Forty per cent of patients did not know that glaucoma causes blindness. The primary source of knowledge about glaucoma for 79.4% of patients was the ophthalmologist. Conclusion: The lack of control of IOP is probably related to the economic burden associated with glaucoma medications. 'Glaucoma education' is an important issue to both the treating ophthalmologist and the patient.

Keywords :

Glaucoma; Socioeconomic; Economic

International Publications Awards
Cairo University

Name : **Dr . Mohamed Mostafa Arafa**

Dep. : **Andrology**

Title : **Significance of Phentolamine Redosing During Prostaglandin E1 Penile Color Doppler Ultrasonography in Diagnosis of Vascular Erectile Dysfunction**

Mohamed Arafa, Hazem Eid and Rany Shamloul

Journal : **Urology**

ISSN : 0919-8172 **Impact Factor :** 0.691

Abstract :

Recently, it was reported that phentolamine redosing during penile duplex can abolish a false diagnosis of venous leakage in patients with impotence. The aim of this study is to identify any useful role of phentolamine redosing in diagnosis of venogenic impotence. Sixty-seven consecutive patients complaining of weak erection for at least 6 months were included in this study. Penile color Doppler ultrasound (CDU) was performed using a 7.5 MHz linear array transducer with a color flow mapping capability. Following intracavernous injection of 20 ug prostaglandin E1 (PGE1), all patients with persistent end diastolic velocity (EDV) >5 cm/sec with an erectile response of E3 or lower, 20 min after intracavernosal injection of PGE1, were asked to revisit our clinic for a second CDU, 2 weeks later. During initial CDU examination, all 67 patients experienced poor response to 20 ug PGE1 with their average peak systolic velocity (PSV) and EDV being 42.8 and 6.6 cm/sec, respectively. The second CDU examination had similar results to the first one. Addition of 2 mg phentolamine did not significantly change the PSV and EDV of cavernosal arteries in any of the 67 patients. In conclusion, addition of intracavernous phentolamine during PGE1 CDU examination carries no advantage over the use of PGE1 alone regarding cavernosal artery response in patients with suspected venogenic EDV.

Keywords :

Penile duplex; Phentolamine; Prostaglandin E1 (PGE1).

Name : **Dr . Mohamed Mostafa Arafa**

Dep. : **Andrology**

Title : **The Prevalence of Peyronie's Disease in Diabetic Patients with Erectile Dysfunction**

M Arafa, H Eid, A El-Badry, K Ezz-Eldine and R Shamloul

Journal : **Impotence Research**

ISSN : 0955-9930 **Impact Factor :** 2.353

Abstract :

We attempted in this study to investigate the prevalence of Peyronie's disease (PD) among diabetic patients with erectile dysfunction (ED). Two-hundred and six diabetic patients were further evaluated in this study. Forty-two (20.3%) patients had PD. There were significant associations between PD and risk factors of age, obesity and smoking. All patients with PD had also ED. Penile curvature was present in 82.1% of all patients with PD. Of the patients with PD, 25.4% had pain with or without erection. Significant associations between PD and ED and ED duration were detected. This study confirmed the high prevalence of PD among diabetic patients with ED. Further work is needed probing the mechanisms through which diabetes affects the pathogenesis of ED and PD.

Keywords :

Peyronie; Erectile dysfunction; Prevalence

Name : **Dr . Mohamed Mostafa Arafa**

Dep. : **Andrology**

Title : **Prostatic Massage: A Simple Method of Semen Retrieval in Men with Spinal Cord Injury**

Mohamed Mostafa Arafa, Wael Ahmed Zohdy and Rany Shamloul

Journal : **Andrology**

ISSN : 0105-6263 **Impact Factor :** 2.183

Abstract :

The aim of this study was to evaluate the efficacy of prostatic massage (PM) as a method for obtaining semen in men with spinal cord injury (SCI) and to evaluate the semen parameters in the semen samples obtained by this method. Sixty-nine patients with SCI underwent PM as a trial for semen retrieval. His- tory taking, examination and hormonal assay analysis (follicle-stimulating hormone, luteinizing hormone, prolactin and testosterone) were performed in all patients. Patients were grouped as follows: group 'A' where sperm could be successfully retrieved by PM and group 'B' where no sperm could be retrieved. PM resulted in the production of prostatic secretion in 51 patients (73.9%) and no secretion was obtained in 18 patients. Spermatozoa were successfully retrieved in only 22 patients (31.9%). The semen analysis of the sperm-positive samples showed asthenoteratozoospermia with decreased vitality and increased number of leucocytes. Semen collection by PM was significantly higher in patients with an SCI level above T10. PM is a safe and simple outpatient clinic procedure that can be easily used to retrieve semen in men with SCI.

Keywords :

Male infertility; Prostatic massage; Semen; Sperm; Spinal cord injury

Name : **Dr . Mohamed Mostafa Arafa**

Dep. : **Andrology**

Title : **Development and Evaluation of the Arabic Index of Premature Ejaculation (AIPE)**

Mohamed Araf and Rany Shamloul

Journal : **Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.676

Abstract :

Objectives. Our report describes the construction and evaluation of the Arabic Index Premature Ejaculation (AIPE) as a diagnostic tool for premature ejaculation (PE) and presents data supporting its validity.

Methods and Main Outcome Measures. Seventy-one men complaining of PE and 73 healthy subjects were asked to complete the seven-question AIPE. Diagnosis of PE was based on the criteria set by the second consultation on sexual dysfunctions. The seven items selected were based on assessment of erectile function, sexual desire, ejaculation latency, ejaculation control, patient satisfaction, partner satisfaction, and psychological distress. The AIPE was examined for sensitivity, specificity, and construct validity.

Results. A receiver operating characteristic curve indicated that the AIPE is an excellent diagnostic test. A cutoff score of 30 (range of scores 7–35) discriminated best (sensitivity = 0.98, specificity = 0.88). Severity of PE ranged from none (31–35) to severe (7–13). A high kappa value (0.85) indicated existence of significant agreement existed between the predicted and “true” PE classes.

Keywords :

Premature ejaculation; Severity; Questionnaire

Name : **Prof . Mohamed Sadek El-Refaee**

Dep. : **Otolaryngology**

Title : **Extended Supracricoid Laryngectomy With Excision of Both Arytenoids: the Modified Reconstructive Laryngectomy**

Mohamed Rifai

Journal : **ACTA Oto-Laeryngologica**

ISSN : 0001-6489 **Impact Factor :** 0.738

Abstract :

Conclusion: Modified reconstructive laryngectomy (MRL) with excision of both arytenoid cartilages will expand the range of indications for conservative surgery in the management of cancer of the larynx. Objective: The present work describes a modification of the standard reconstructive laryngectomy procedure, in order to address problems related to aspiration, and to improve functional results. Patients and methods: The study was conducted in Cairo University Hospital. MRL was performed on 14 patients who were scheduled for total laryngectomy. This technique allows for preservation of the superior laryngeal nerves, by fashioning folds of the pharyngeal mucosa to replace the arytenoids. This is followed by reconstruction of the airway through elevation and attachment of the remaining tracheal rings and/or cricoid to the hyoid bone and epiglottis. Results: MRL was successful in all of the 14 patients included in this preliminary study. All of the patients maintained comprehensible speech, and only one required a speaking type of tracheotomy tube.

Keywords :

Total laryngectomy (TL); Supracricoid aryngectomy (SCL); Reconstructive laryngectomy (RL); Modified reconstructive laryngectomy (MRL)

Name : **Prof . Mohamed Shaarawy Mohamed**

Dep. : **Obstetrics & Gynecology**

Title : **Circulating Levels of Osteoprotegerin and Receptor Activator of NF-kB ligand in Patients with Chronic Renal Failure**

Mohamed Shaarawy and Odette W. Hindy

Journal : **Clinical Chemistry and Laboratory Medicine**

ISSN : 1434-6621 **Impact Factor :** 1.725

Abstract :

Background: Osteoprotegerin (OPG) is a recently identified cytokine that acts as a decoy receptor for the receptor activator of NF-kB ligand (RANKL). OPG and RANKL have been shown to be important regulators of osteoclastogenesis. The aim of this study was to investigate the relationship between the OPG-RANKL system and bone mineral metabolism in patients with chronic renal failure.

Methods: Serum OG, RANKL, osteocalcin, cross linked c-telopeptide of type 1 collagen (ICTP) intact parathyroid hormone (PTH), bone alkaline phosphatase and cystatin C levels were measured in 40 chronic hemodialysis male patients as well as 32 healthy controls matched for age and sex. Their lumbar-spine bone mineral density (LS-BMD) was measured by dual energy x-ray absorptiometry (DEXA).

Results: Serum OPG, RANKL, parathyroid hormone (PTH), bone alkaline phosphatase and cystatin C levels were significantly increased in patients with chronic renal failure . Serum OPG was positively correlated to serum RANKL and cystatin C. Positive correlation existed between serum RANKL and each of cystatin C and ICTP. LS- BMD was significantly lower in patients with chronic renal failure (CRF) than in controls. In patients with CRF, LS-BMD was inversely correlated to levels of RANKL and cystatin C whereas it was positively correlated to serum OPG.

Conclusions: OPG/RANKL system is involved in the pathogenesis and regulation of bone turnover in chronic renal failure. Circulating levels of osteoprotegerin and receptor activator of nuclear factor–kB ligand may be useful markers to assess turnover renal osteopathies.

Keywords :

Bone mineral density; Markers of bone remodeling; Chronic renal failure; Osteoprotegerin; Receptor activator of nuclear factor-Kb ligand

Name : **Prof . Mohammad Mohammad Kenawi**

Dep. : **General Surgery**

Title : **Manual Redirection: The Best Safe Bet for Redirection in HTML**

Mohammad Mohammad Kenawi

Journal : **Internet Marketing NewsWatch**

ISSN : **Impact Factor :**

Abstract :

Redesigning website pages may pose some problems if these pages have high search engine rankings that one doesn't want to lose. In such cases you have to redirect your website traffic so that your original URL is retained. However, redirection can be hazardous, if care is not taken in choosing the correct method, if your website is in HTML

Keywords :

Internet; Internet marketing; Internet search engines; HTML; Redirect a web page; Redirection of website traffic; URL

International Publications Awards
Cairo University

Name: Prof. Mona Aziz Ibrahim

Dep.: Clinical Pathology

Title: Study of β-Thalassemia Mutations Using the Polymerase Chain Reaction-Amplification Refractory Mutation System and Direct Dna Sequencing Techniques in A Group of Egyptian Thalassemia Patients

Somaia EI-Gawhary, Shahira El-Shafie, Manal Nsazi, Mona Aziz, and Amal EI-Beshlawy

Journal: Hemoglobin

ISSN: 0363-0269 **Impact Factor:** 0.516

Abstract:

The aim of this study was the molecular characterization of &-thalassemia (thai) mutations in a group of 95 Egyptian thalassemic patients from Fayoum, in Upper Egypt, Cairo, Alexandria and Tanta in Lower Egypt and the Nile Delta. To identify these anomalies, the polymerase chain reaction-amplification refractory mutation system (PCR-ARMS) technique was used, complemented by direct DNA sequencing for uncharacterized cases.

In 80 of the 95 patients, the 0-thal mutation was detected by PCR-AHMS. The most common allele encountered in our study was IVS-1-6 (T→C) (36.3%); the second most common mutation was rVS-I-210 (G→A) (25,8%). In addition, we report three homozygous cases for the promoter region -57 (C→G) allele with a frequency of 3,2%. DNA sequencing of uncharacterized cases (14 cases, 15 alleles) revealed six cases (six alleles) of codon 27 (G→T), and three cases (three alleles) of the /VS-7/-S4S (C→A) mutation. Codon 37 (G→A) in the homozygous state was found in one patient with positive consanguinity. frame shift codon 5 (-CT) mutation was delected in two of our uncharacterized cases. The codon 15 (TGG→TGA) mutations mutations was detected in one patient (one allele, 0.5 %). All studied cases were fully characterized by this strategy.

Screening for 0thalassemic mutations using ARMS-PCR for the seven most frequent alleles in Egypt succeeded in determining the 0-globin genotype in 84.2% of our patients (91.6% of the expected alleles). To improve the efficiency of routine screwing the PCR-ARMS mutation panel.

Keywords:

P-Thalassemia (thai) mutations; DNA sequencing; p-Thalassemia in Egypt

International Publications Awards
Cairo University

Name : **Prof . Mosaad Mosaad Abdel-Aziz**

Dep. : **Otolaryngology**

Title : **Treatment of Submucous Cleft Palate by Pharyngeal Flap as a Primary Procedure**

Mosaad Abdel-Aziz

Journal : **Pediatric Otorhinolaryngology**

ISSN : 0165-5876 **Impact Factor :** 0.846

Abstract :

Objective: (a) Palatal repair is the standard surgical method for correction of velopharyngeal incompetence due to submucous cleft, but some patients may need further narrowing of velopharynx by pharyngeal flap. (b) The purpose of this study is to evaluate the efficacy of a pharyngeal flap as a single surgical procedure in the treatment of symptomatic cases.

Methods: Nine cases of symptomatic submucous cleft palate were subjected to treatment by pharyngeal flap only as a primary and single procedure after failure of speech therapy. Preoperative flexible nasopharyngoscopy was carried out for all children to determine the width of the velopharyngeal gap; the results were recorded on videotape and reviewed in the operating theatre for determination of the width of the pharyngeal flap. Postoperative follow-up by flexible nasopharyngoscopy and parent's questionnaire were used to assess the success rate.

Results: Follow-up flexible nasopharyngoscopy showed complete closure of the lateral ports in eight cases (89%) while one case (11%) showed incompetence. Hypernasality was improved in all cases witnessed by parent's questionnaire and this improvement was satisfactory in seven cases (78%) but not satisfactory in two cases
(22%). One of the last two cases reached to satisfactory level after speech therapy, while the other case showed no further improvement.

Conclusions: Speech therapy alone cannot correct hypernasality in presence of anatomical defect. Pharyngeal flap is a useful procedure monitored by flexible nasopharyngoscopy. When pharyngeal flap is used, the need for adjunctive procedure is absent.

Keywords :

Submucous cleft; Velopharyngeal incompetence; Hypernasality; Pharyngeal flap

International Publications Awards
Cairo University

Name : Dr . Nargis Albert Labib

Dep. : Community Medicine

Title : **Comparison of Cigarette and Water Pipe Smoking Among Female University Students in Egypt**

Nargis Labib, Ghada Radwan, Nabiel Mikhail, Mostafa K. Mohamed, Maged El Setouhy, Christopher Loffredo and Ebenezer Israel

Journal : Nicotine & Tobacco Research

ISSN : 1462-2203 **Impact Factor :** 2.299

Abstract :

This study investigated behavioral and sociodemographic factors associated with tobacco use among female university students patronizing water pipe cafes in Cairo, Egypt. We interviewed two groups of female university student smokers (100 and 96 students from a public and a private university, respectively). The interviews took place in nine water pipe cafes near the two universities. A logistic regression model was developed to analyze the relationship between tobacco-related knowledge and beliefs and the choice between smoking water pipe or cigarettes. Among these smokers, 27% smoked cigarettes only, 37.8% smoked water pipe only, and 35.2% smoked both types of tobacco. Most of the water pipe smokers (74.1%) preferred this method because they believe it to be less harmful than smoking cigarettes. More than half of the subjects were encouraged to start smoking by other females (56.6%). Curiosity was a significant factor for initiation (OR=2.8, 95% CI=1.3–6.2, p,.01). We found no significant differences between water pipe and cigarette smokers regarding current age, age at initiation, quit attempts, knowledge about the hazards of smoking, wanting to be fashionable, or smoking with friends. About one in four (23.7%) attempted to quit, with health cited as a major reason. An urgent need exists for correction of the misperception among this study population that water pipe smoking is safe and less harmful than cigarette smoking.

International Publications Awards
Cairo University

Name : **Prof . Olfat Gamil Shaker**

Dep. : **Biochemistry**

Title : **The Role of Heat Shock Protein 60, Vascular Endothelial Growth Factor and Antiphospholipid Antibodies in Behc¸et Disease**

O. Shaker, M. A. Ay El-Deen, H. El Hadidi, B. D. Grace, H. El Sherif and A. Abdel Halim

Journal : **British J. of Dermatology**

ISSN : 0007-0963 **Impact Factor :** 3.33

Abstract :

Background: Behc¸et disease is a systemic inflammatory disease of unknown aetiol- ogy. T cells in this disease proliferate vigorously in response to a specific peptide of heat shock protein (HSP) 60 in an antigen-specific fashion. Vascular endothel- ial cell growth factor (VEGF) is a cytokine participating in the inflammatory pro- cess. One of the prominent features of Behc¸et disease is vasculitis as a result of endothelial dysfunction. Antiphospholipid antibodies (APA) may play a role in the development of thrombosis by inhibiting production of prostacyclin by endothelial cells.

Objectives: To investigate the role of HSP60, VEGF and APA in Behc¸et disease and their relation to clinical manifestations and disease activity. Methods Thirty patients with Behc¸et disease were included; 17 were in the active stage and 13 were in the inactive. Fifteen age- and sex-matched healthy subjects served as controls. Complete clinical examination and Doppler examination were done. Serum levels of HSP60, VEGF and APA were performed. Results: Serum levels of HSP60, VEGF and APA were significantly higher in patients than in controls; however, their level did not correlate with disease activity. The serum level of VEGF correlated significantly with the presence of vascular mani- festations and ocular involvement. The serum level of APA was greater in patients with thrombosis. HSP60 has an important role in aetiopathogenesis of Behc¸et disease, which sheds new light on its autoimmune nature. Conclusions: An elevated serum level of VEGF may be a risk factor for the develop- ment of ocular disease contributing to poor visual outcome.

Keywords :

Antiphospholipid antibodie; Behcet diseas; Heat shock protein 60; Vascular endothelial cell growth factor.

Name : **Prof . Olfat Gamil Shaker**

Dep. : **Biochemistry**

Title : **Changing Patterns of Acute Viral Hepatitis at A Major Urban Referral Center in Egypt**

Soheir Zakaria, Rabab Fouad, Olfat Shaker, Sami Zak, Ahmed Hashem, Samer S. El-Kamary, Gamal Esmat and Serag Zakaria

Journal : **Clinical Infecious Diseases**

ISSN : 1058-4838 **Impact Factor :** 6.19

Abstract :

Background: Changes in the viral etiology of hospitalized patients can inform us of changes in the overall epidemiology of acute viral hepatitis infections. We hypothesized that improvements in health care and sanitation in the past 2 decades in Egypt have significantly impacted the viral causes of acute viral hepatitis in hospitalized patients. We compared the viral causes of acute viral hepatitis at a major urban referral center with results reported from the same center 20 years earlier.

Methods: Over a period of 10 months, 200 consecutive inpatients with clinical acute viral hepatitis were enrolled in the study, and serum samples were tested for hepatitis A through E, cytomegalovirus, and Epstein- Barr virus.

Results: The frequency of acute hepatitis B virus infection as a cause of symptomatic hepatitis decreased from 43.4% in 1983 to 28.5% in 2002 ($P < .01$), and acute hepatitis A virus infection increased from 2.1% in 1983 to 34% in 2002 ($P < .01$), and occurred at older ages. In 1983, non–A, non-B hepatitis virus infection caused acute viral hepatitis in 38.7% of cases, compared with 31% in the present study ($P = .12$). The mean alanine amino- transferase level was highest in patients with combined infections, and clinical presentation did not distinguish between different viral etiologies of hepatitis.

Conclusions: A significant decrease in hepatitis B virus infection and an increase in hepatitis A virus infection have occurred since the earlier study was performed in 1983. The decrease in hepatitis B virus infection is attributable to the steep decrease in hepatitis B virus infection among children that resulted from the universal hepatitis B virus immunization of infants that was initiated in 1991. The increase in clinical hepatitis A virus infection occurred in older patients and could be attributed to improved sanitation that delayed individuals' initial exposures to the virus.

Keywords :

Name : **Prof . Osama Kamal Shaeer**

Dep. : **Andrology**

Title : **Penoscopy: Optical Corporotomy and Resection for Prosthesis Implantation in Cases of Penile Fibrosis, Shaeer's Technique.**

O.K.Z. Shaeer and A.K.Z. Shaeer.

Journal : **Society for Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.676

Abstract :

Penile prosthesis is a device that is implanted in case of failure of erection to restore rigidity. The prosthesis is inserted one rod into each corpus cavernosum, where a corpus cavernosum is a long cylinder that spans the wholw length of the penis. A penis harbours two corpora cavernosa. The corpora cavernosa can be obliterated by fibrous tissue (firm inelastic tissue) that prevents erection and causes shortening. Implantation of a prosthesis becomes necessary but very difficult since the firm fibrous tissue prevents insertion of the prosthesis into the corpora without using significant force and agression that may cause serious injuries. The use of a sharp instrument is the solution, but is inapplicable since the instrument enters the cylindrical corpus cavernosum, a closed space, where it operated unseen, causing even more injuries.

International Publications Awards
Cairo University

Name : **Prof . Osama Kamal Shaeer**

Dep. : **Andrology**

Title : **Corporoscopic Excavation of the Fibrosed Corpora Cavernosa for Penile Prosethesis Implantation: Optical Corporotomy and Trans-Corporeal Resection, Shaeer's Technique**

Osama Shaeer and Ahmed Shaeer

Journal : **International Society for Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.676

Abstract :

Implantation of a penile prosthesis in cases of neglected or resistant ischemic priapism, or delayed re-implantation following prosthesis infection and extraction, is usually a difficult and risky procedure due to fibrosis of the corpora cavernosa. Among the common complications are perforation of the urethra, tunica albuginea, and infection. The complications are usually due to the use of blind force against resistance. Aim. We propose the techniques of Trans-Corporeal Resection and Optical Corporotomy as adjuvant measures for excavating the fibrosed corpora cavernosa under vision, without the use of force against resistance.
Methods. Six patients with diffuse fibrosis of the corpora cavernosa were operated on. The instruments and technique are the same as for optical urethrotomy and transurethral resection. Optical Corporotomy was started with, where the corpora are incised from within. After establishment of a satisfactory passage, Trans-Corporeal Resection followed to scrape the fibrous tissue. Implantation of penile prosthesis was completed as usual. The procedure was performed through 1.5 cm incision in the tunica albuginea. Main Outcome Measures. Length, girth, and straightness in the erect position, as well as the incidence of complications. Results. Operative time was an average of 90 minutes. No difficulty was encountered during the procedure. No complications were noted through 1 year of follow-up. Conclusion. Optical Corporotomy and Trans-Corporeal Resection allow for force-free, visually monitored excava- tion of the fibrosed corpora cavernosa, aiming at safer penile prosthesis implantation. Shaeer O, and Shaeer A. Corporoscopic excavation of the fibrosed corpora cavernosa for penile prosethesis implantation: Optical Corporotomy and Trans-Corporeal Resection, Shaeer's Technique.

Keywords :

Penile prosthesis; Priapism; Peyronie's disease of tunica albuginea.

International Publications Awards
Cairo University

Name: **Prof. Osama Kamal Shaeer**

Dep.: **Andrology Sexology and sexually transmitted diseases**

Title: **Penile Prosthesis Implantation in Cases of Fibrosis: Ultrasound-Guided Cavernotomy and Sheathed Trochar Excavation**

Osama Shaeer

Journal: Society for Sexual Medicine

ISSN: 1743-6095 **Impact Factor:** 4.676

Abstract:

Introduction. Implantation of a penile prosthesis into fibrosed corpora cavernosa is a difficult and risky procedure. Specialized instruments that assist safer and more efficient excavation include Otis Urethrotome and various cavernotomes, all of which operate underneath the tunica albuginea, out of sight. The blind use of such instruments can result in perforation of the tunica albuginea or injury to the urethra. ***Aim.*** This work describes the utility of ultrasonography for adding visual monitoring to any of the above-mentioned instruments, maintaining them in the mid-corpus cavernosum position to avoid perforation, and describes the application of alternative sheathed, sharp instruments that allow fast, efficient, and visually monitored drilling into fibrous tissue. ***Main Outcome Measures.*** Clinical outcome data were examined. ***Methods.*** Surgery was performed on five cases with extensive fibrosis of the penis. Initial blunt dilatation by Hegar dilators faced considerable resistance. An ultrasound probe was applied to the ventral aspect of the penis. A laparoscopy sheath was advanced under ultrasound guidance up to the fibrous tissue. A sharp laparoscopy trochar was inserted through the sheath. Its tip was oriented in the mid-corpus cavernosum by longitudinal and transverse sonography sections, as it drilled into the fibrous tissue. Laparoscopy scissors were used in the same fashion to cut fibrous tissue lumps. After full excavation, penile prosthesis was implanted. ***Results.*** All implants survived adequately. No complications occurred following implantation. Operative time ranged from 50 to 60 minutes. No difficulty was encountered at excavation. ***Conclusion.*** Ultrasound guidance can be a handy adjunct to any of the available techniques developed for excavating the fibrosed corpora cavernosa, with a possible decrease in difficulty and complication rate of the procedure. Utility of sheathed, sharp instruments guided by sonography is an alternative to the cavernotomes, allowing fast and efficient drilling into fibrous tissue

Keywords:

Penile Prosthesis; Ultrasound; Fibrosis; Re-Implantation; Peyronie's; Priapism Liver fibrosis; CCL4; MSCs

Name : **Prof . Sahar Nasr Saleem**

Dep. : **Diagnostic Radiology**

Title : **Lesions of the Hypothalamus: MR Imaging Diagnostic Features 1**

Sahar N. Saleem, Ahmed-Hesham M. Said and Donald H. Lee

Journal : **Radiographics**

ISSN : 0271-5333 **Impact Factor :** 2.344

Abstract :

The hypothalamus is susceptible to involvement by a variety of processes, including developmental abnormalities, primary tumors of the central nervous system (CNS), vascular tumors, systemic tumors affecting the CNS, and inflammatory and granulomatous diseases. The hypothalamus may also be involved by lesions arising from surrounding structures such as the pituitary gland. Magnetic resonance (MR) imaging is the modality of choice for evaluating the anatomy and pathologic conditions of the hypothalamus. The MR imaging differential diagnosis depends on accurate anatomic localization and tissue characterization of hypothalamic lesions through the recognition of their signal intensity and contrast material enhancement patterns. Diffusion-weighted imaging and proton MR spectroscopy can be helpful in differentiating among various types of hypothalamic lesions. Key MR imaging features, in addition to the patient's age and clinical findings at presentation, may be helpful in developing the differential diagnosis for lesions involving the hypothalamic region.

Keywords :

Hypothalamus; MRI; Tumor

International Publications Awards
Cairo University

Name: Prof. Salwa Ibrahim Farag

Dep.: Internal Medicine

Title: Influence of Plasma Volume Status on Blood Pressure in Patients on Maintenance Hemodialysis

Salwa Ibrahim and Ahmed Taweel

Journal: Dialysis & Transplantation

ISSN: 0090-2934 **Impact Factor**: 0.248

Abstract:

Background: Hypervolemia is considered a major pathogenic factor for hypertension in patients receiving hemodialysis (HD). We examined the effect of intradialytic changes in body weight and plasma volume on blood pressure (BP) in a cohort of chronic HD patients.

Patients and Methods: One hundred chronic, stable HD patients were the subjects of the present study. They were divided into 2 groups according to their pre-dialysis BP. Each group was examined for potential significant correlations of intradialytic changes in body weight and plasma volume with pre- and post-dialysis blood pressure values. The intradialytic decrease in plasma volume was calculated from pre-dialysis and post-dialysis total plasma protein concentrations and was expressed as a percentage of the plasma volume at the beginning of the hemodialysis session.

Results: In group A (hypertensive group, $n = 43$), post-dialysis systolic and diastolic blood pressure (SBP and DBP) were significantly lower than pre-dialysis values ($P<0.05$). The mean intradialytic reduction in body weight was 2.97±1.33 kg, and the mean intradialytic decrease in plasma volume was 13.6% ± 8.23%. There was no significant correlation between intradialytic change in either SBP or DBP and Intradialytic change in body weight or plasma volume. In group B (Normotensive group, $n = 57$), post-dialysis SBP and DBP were significantly lower than pre-dialysis levels ($p<0.05$). The mean intradialytic reduction in body weight was 2.64 ±1.07 kg, and the mean Intradialytic decrease in plasma volume was 13.4% ±7.73%. Apositive significant correlation was recorded between Intradialytic change in SBP and change in body weight in normotensive group. Multiple regression analysis revealed that for the study patients as a whole, pre-dialysis SBP, intradialytic change in SBP, pre-dialysis DBP, and post-dialysis SBP were not significantly correlated with intradialytic changes in plasma volume and body weight.

Conclusions: Our findings clearly indicate that intradialytic change in plasma volume does not influence either pre-dialysis or post-dialysis blood pressure. From our results, we conclude that assessment of intradialytic change in plasma volume is not useful for evaluating the hydration status of HD patients in clinical practice.

International Publications Awards
Cairo University

Name : **Dr . Salwa Ibrahim Farag**

Dep. : **Internal Medicine**

Title : **Estimation of Transforming Growth factor-Beta 1 as a Marker of Renal Injury in Type II Diabetes Mellitus**

Salwa Ibrahim and Laila Rashed

Journal : **Saudi Medical**

ISSN : 0379-5284 **Impact Factor :** 0.3

Abstract :

Objectives: To evaluate the serum transforming growth factor-beta 1 level in type II diabetic patients with diabetic nephropathy (DN) and to assess its use as a marker of renal injury in type II diabetes.
Methods: Sixty patients with type II diabetes mellitus (DM), who attended the outpatient internal medicine clinic in Cairo University Hospital, Egypt from January 2003 to March 2003, were the subjects of the present study and compared to 10 healthy age- and gender- matched control subjects They were divided into 6 major groups according to degree of metabolic control, as determined by glycosylated hemoglobin (HbA1c), the rate of urinary albumin excretion (UAE) and serum creatinine level. Serum transforming growth factor-beta 1 level was assessed by enzyme linked immunosorbent assay (ELISA).
Results: Serum transforming growth factor-beta 1 level was significantly increased in micro albuminuric (UAE 20-200 ug/minute), macro albuminuric (UAE >200 ug/minute) and overtly nephropathic diabetic patients with renal impairment compared to healthy controls ($p<0.05$). In addition, serum transforming growth factor-beta 1 level was significantly increased in type II diabetic patients with poor glycemic control (HbA1c >7.6%) compared to patients with good glycemic control (HbA1c 5.5-7.6%). Serum transforming growth factor-beta 1 level was significantly increased in hypertensive DM patients compared to normotensive DM patients ($p<0.05$). There was a strong correlation between serum transforming growth factor-beta 1 level and HbA1c, blood urea, serum creatinine and 24-hour urinary protein excretion ($p<0.01$).
Conclusions:Our data strongly support the hypothesis that hyperglycemia may trigger the activation of transforming growth factor-beta 1 which in turn mediates progressive renal damage in type II DM. Increased serum transforming growth factor-beta 1 may be useful as a marker of diabetic renal disease as it shows a close association with the parameters of renal injury in type II diabetes.

Name : Dr . Salwa Ibrahim Farag

Dep. : Internal Medicine

Title : **Estimation of Serum and Urinary Profibrotic Cytokines in Renal Allograft Recipients**

Salwa Ibrahim ,Gamal Saadi and Mervat Al-Ansary

Journal : **The Internet J. of Nephrology**

ISSN : 1540-2665 **Impact Factor :**

Abstract :

Background: Chronic allograft nephropathy (CAN) is an important cause for graft failure after the first year of renal transplantation. Recent data confirmed the involvement of the key fibrogenetic cytokines such as transforming growth factor-beta 1(TGF-ß1) and platelet derived growth factor (PDGF) in the pathogenesis of CAN. We evaluated the potential contribution of TGF-ß1 and PDGF in the development of renal allograft dysfunction as well as the impact of cyclosporine A (CsA) therapy on serum and urinary levels of these cytokines.
Methods: Serum and urinary TGF-ß1 and PDGF were determined by enzyme-linked immunosorbent assay (ELISA) in 10 renal allograft recipients for more than one year with normal renal function (group I), 10 renal allograft recipients for more than one year with impaired renal function (group II), 10 patients with chronic renal failure (CRF) under conservative therapy (group III) and the measurements were compared with the levels of 10 healthy controls (group IV).
Results:Serum and urinary TGF-ß1 and PDGF levels in the transplanted groups with normal or impaired renal function (group I&II) as well as in CRF patients (group III) were significantly increased compared to healthy controls ($P<0.01$). The impact of cyclosporine A and immune stimulation in the transplanted cases was manifested by higher levels of serum and urinary TGF-ß1 and PDGF in the transplanted group with normal kidney function (group I) when compared to healthy controls ($P<0.01$). Serum and urinary TGF-ß1 and PDGF levels were significantly elevated among transplanted cases with impaired renal function (group II) compared to transplanted cases with normal renal function (group I) ($P<0.01$). Serum and urinary TGF-ß1 and PDGF levels showed significant positive correlations with serum creatinine levels in the patients groups ($P<0.001$).
Conclusion: Our data confirm the crucial contribution of the profibrotic cytokines TGF-ß1 and PDGF in the development of chronic graft dysfunction that could be further augmented by cyclosporine A therapy. Future studies are needed to examine the effect of manipulation of immunosuppressive regimen on the extent of profibrotic gene expression as well as the long term graft survival.

Keywords :

TGF-1; PDGF; Cyclosporine A; Chronic allograft dysfunction

Name : **Dr . Salwa Ibrahim Farag**

Dep. : **Internal Medicine**

Title : **Increased Apoptosis and Proliferative Capacity are Early Events in Cyst Formation in Autosomal-Dominant, Polycystic Kidney Disease**

Salwa Ibrahim

Journal : **The Scientific World**

ISSN : 1537-744X **Impact Factor :** 2.59

Abstract :

Previous studies have highlighted epithelial proliferation and apoptosis in the cyst lining as common features in animal models of cystic disease. In this study, we sought to evaluate the timing and extent of these changes in renal tissue obtained from patients with autosomal-dominant, polycystic kidney disease (ADPKD) subjected for nephrectomy for a variety of clinical indications. Cell proliferation was assessed using an antibody to proliferating cell nuclear antigen (PCNA), and apoptosis was evaluated by the use of terminal deoxynucleotidyl transferase (TdT) digoxigenin-deoxyuridine (dUTP) nick end-labeling technique (ApopTag®). The origin of cystic structures was evaluated using antibodies to epithelial membrane antigen (EMA). The lineage of interstitial mononuclear cells was assessed by anti CD 45 and CD 68 monoclonal antibodies. We found an increased rate of proliferation within the epithelium, not only of cystic, but also of noncystic, tubules that was significantly higher than the corresponding values from normal kidney ($p \leq 0.0001$). Apoptotic index values were significantly increased within the epithelium lining noncystic and cystic structures ($p < 0.001$). In the interstitium, increased proliferation and apoptosis rates were also noted. Interstitial infiltrates were dense and consisted mainly of CD 68–positive macrophages and CD 45–positive lymphocytes. The present study demonstrated that changes in cell turnover are early events in cyst formation. The observation of mild proportionate elevation of both proliferation and apoptosis values of the epithelium lining cysts explains the lack of increase risk of renal cell carcinoma in ADPKD. The development of heavy interstitial inflammation could contribute to progressive tubulointerstitial scarring, leading to progressive renal failure.

Keywords :

Proliferation; Apoptosis; Interstitial inflammation; ADPKD

Name : **Dr . Sandra Morad Younan**

Dep. : **Physiology**

Title : **Impairment of the Insulinotropic Effect of Gastric Inhibitory Polypeptide (GIP) in Obese and Diabetic Rats is Related to the Down-Regulation of its Pancreatic Receptors**

S. M. Younan and L. A. Rashed

Journal : **General Physiology and Biophysics**

ISSN : 0231-5882 **Impact Factor :** 0.771

Abstract :

The association of obesity with type 2 diabetes mellitus has been recognized for years. In type 2 diabetes, there is a possibility that an important part of the impaired insulin secretion is due to the gastric inhibitory polypeptide (GIP) hormone. This study investigated changes that occur in the pancreatic GIP receptors' (GIP-Rs) expression and in GIP secretion in obese and type 2 diabetic rats and its relation to plasma glucose and insulin levels during oral glucose tolerance test (OGTT) compared to control rats. During the first 20 min of the OGTT, both the obese and the diabetic rats had a significant increase in the glucose excursion and a significant decrease in early-insulin secretion compared to the control group, with more prominent changes in the diabetic group. The obese rats had a significant increase in fasting GIP level and in the incremental change of GIP from 0 to 20 min (GIP Δ 0–20: 60.1 ± 6.66 pmol/l) compared to that of the control (33.96 ± 4.69 pmol/l) and the diabetic (29.34 ± 2.62 pmol/l) group, which were not significantly different from each other. However, there was a significant decrease in GIP-Rs expression in both the obese (88.07 ± 10.36 μ g/ml) and diabetic (87.51 ± 4.72 μg/ml) groups compared to the control group (120.35 ± 8.06 μ g/ml). During the second hour of the OGTT, plasma GIP was decreasing in all groups, however, the obese group had a significant hyperin- sulinemia compared to the other two groups. Moreover, the diabetic group had a significantly lower plasma insulin level until the 90 min interval and thereafter it showed a non-significant difference compared to the control group.
In conclusion, both obese and diabetic rats had an impaired early-phase insulinotropic effect of GIP due to impaired gene expression of GIP-Rs which could be a potential target to prevent transi- tion of obesity to diabetes and to improve insulin secretion in the latter.

Keywords :

Incretin; GIP receptors; Obese rats; Type 2 diabetes

Name : **Prof . Sayed Saif El-Din Hassan**

Dep. : **Ophthalmology**

Title : **Early Detection and Management of Glaucoma A new Scoring System (update)**

M Yasser S Saif and Ahmed T S Saif

Journal : **Highlights of Ophthalmology**

ISSN : **Impact Factor :**

Abstract :

For early diagnosis of glaucoma or glaucoma suspect in absence of stigmata of one or more of the triad (IOP, field changes and Cupping) is very difficult, sometimes impossible and in most of the cases is controversial

The risk factors for getting glaucoma include age, race, sex, heridity, family history , systemic (Diabetes, Obesity, Hypertension, Hypotension, arterioscerosis and smoking) and socioeconomic factors as well as local factors (myopia, corneal thickness and scleral regidity) all will channel into the resultant disc damage for the systemic and level of IOP for the local factors. So calculation of the combined probability of getting glaucoma for these 2 factors alone will include all the above mentioned variables. 3-11

For the calculation of the combined probability of getting glaucoma the study will analyze the probability of getting glaucoma in relation to IOP alone (X axis in table I) then the probability in relation to cup disc ratio (Y axis in table I). Also the combined probability for every X = IOP and every Y=C/D ratio

Name : **Dr . Taha Abdel-Naser Mohamed**

Dep. : **Andrology**

Title : **Semen Parameters in Men with Spinal Cord Injury: Changes and Aetioloy**

Mohamed N. Momen, Ibrahim Fahmy, Medhat Amer, Mohamad Arafa, Wael Zohdy and Taha A. Naser

Journal : **Asian Andrology**

ISSN : 1008-682X **Impact Factor :** 1.737

Abstract :

To assess the changes in semen parameters in men with spinal cord injury (SCI) and the possible causes of these changes. Methods: The study included 45 subjects with SCI. Semen retrieval was done by masturbation (2), vigorous prostatic massage (n = 13), penile vibratory stimulation (n = 13) or electroejaculation (n = 17). Results: The semen of men with SCI showed normal volume (2.3 ± 1.9 mL) and sperm count (85.0 × 106 ± 83.8 × 106/mL) with decreased motility (11.6% ± 10.1%), vitality (18.5% ± 15.2%) and normal forms (17.5 ± 13.4%), and pus cells has been increased (6.0 × 106 ± 8.2 × 106/mL). Total (13.4 ± 9.9 vs. 7.1 ± 6.8) and progressive (4.4 ± 3.9 vs. 2.2 ± 2.1) motility were significantly higher in subjects with lower scrotal temperatures. There was no statistical significant difference between electroejaculation and penile vibratory stimulation groups as regards any of the semen parameters. Subjects' age, infrequent ejaculation, injury duration and hormonal profile showed no significant effect on semen parameters.Conclusion: The defining characteristics of the seminogram in men with SCI are normal volume and count with decreased sperm motility, vitality and normal forms, and the increased number of pus cells. The most acceptable cause of the deterioration of semen is elevated scrotal temperatur
9: 684–689)

Keywords :

Electroejaculation; Infertility; Penile vibratorystimulation; Prostatic massage; Semen; Spinal cord injury

International Publications Awards
Cairo University

Name: Prof. Taimour Mostafa Ibrahim

Dep.: Andrology Sexology and sexually transmitted diseases

Title: A-1,4-Glucosidase Activity in Infertile Oligoasthenozoospermic Men with and Without Varicocele

M. M. F. Roaiah, T. Mostafa, D. Salem, A. R. El-Nashar, I. I. Kamel and M. S. El-Kashlan

Journal: Andrologia

ISSN: 0303-4569 **Impact Factor**: 1.025

Abstract:

This work aimed to assess seminal α-1,4-glucosidase activity in infertile oligoasthenozoospermic men associated with and without scrotal varicocele. Eighty men were investigated. They were divided into three groups: group 1 (n = 20), fertile normozoospermic men; group 2 (n = 30), ligoasthenozoospermia with varicocele; and group 3 (n = 30), oligoasthenozoospermia without varicocele. The patients underwent medical history, clinical examination, conventional semen analysis and estimation of seminal plasma α-1,4-glucosidase activity by double-beam spectrophotometer method and serum testosterone by radioimmunoassay method. There was a significant decrease in the mean seminal α-1,4-glucosidase activity levels in infertile men versus controls (mean ± SD; 7.66 ± 0.433, 2.088 ± 0.565, 5.384 ± 0.85 mU ml^{-1} respectively). Mean serum testosterone levels demonstrated nonsignificant differences between studied groups. Seminal α-1,4-glucosidase activity levels demonstrated significant correlation with sperm count, sperm motility percentage and serum testosterone in oligoasthenozoospermia with varicocele group and demonstrated nonsignificant correlation in other groups. It is concluded that varicocele-induced hypoxia is the adverse effect that causes both oligoasthenozoospermia and decreased seminal α-1,4-glucosidase levels.

Keywords:

α-1,4-Glucosidase; Epididymis ; Male infertility; Seminal plasma; Spermatozoa; Testosterone; Varicocele

Name: Prof. Taimour Mostafa Ibrahim

Dep.: Andrology Sexology and sexually transmitted diseases

Title: Serum Leptin Correlates in Infertile Oligozoospermic Males

S. Hanafy, F. A. Halawa, T. Mostafa, N. W. Mikhael and K. T. Khalil

Journal: Andrologia

ISSN: 0303-4569 **Impact Factor:** 1.025

Abstract:

Leptin is an adipocyte-secreted protein that participates in the regulation of energy homeostasis. Eighty men were investigated; fertile normozoospermia as a control (n = 30) and infertile oligozoospermia (n = 50). The patients underwent estimation of body weight (kg), height (cm), calculation of body mass index (BMI), semen analysis, serum leptin and testosterone hormones. Mean body weight was significantly higher in infertile oligozoospermia compared with controls. Mean height, BMI and serum testosterone levels showed nonsignificant differences between the two groups. Infertile oligozoospermia had significantly higher mean serum leptin level than controls (mean ± SD; 6.88 ± 8.65, 16.3 ± 13.98 ng ml^{-1} $P < 0.01$). Serum leptin demonstrated significant positive correlation with age, body weight, BMI and significant inverse correlation with serum testosterone. It had nonsignificant correlation with the height and sperm concentration. These results are suggestive of a link between the adipocyte derived hormone, leptin and male reproduction

Keywords:

Infertility; Leptin; Semen; Seminal Plasma; Testosterone

International Publications Awards
Cairo University

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Mast Cells in Testicular Biopsies of Azoospermic Men**

M. M. F. Roaiah, H. Khatab and T. Mostafa

Journal : **Andrologia**

ISSN : 0303-4569 **Impact Factor :** 1.025

Abstract :

This work aimed at identifying mast cells in testicular biopsies from 10 normal fertile controls, 20 patients with obstructive azoospermia and 70 patients with nonobstructive azoospermia. The biopsies were stained with haematoxylin and eosin stain for tubular-modified Johnson score and with toluidine blue stain for mast cells. Two populations of mast cells, peritubular and interstitial, were demonstrated in all sections with varied counts. Testicular sections with Sertoli cell only and spermatogenic arrest patterns demonstrated a significant increase in both peritubular and interstitial mast cells compared with other groups, whereas obstructive azoospermia demonstrated a nonsignificant increase com- pared with the controls. Mast cell count was significantly correlated negatively withJohnsonscoreforbothperitubular(P = 0.001)andintersti(P = 0.001) populations. Whether these results could be a cause or an effect, a special role might be assigned to mast cells in the pathogenesis of disturbed spermatogenesis.

Keywords :

Azoospermia; Male infertility; MastcCells; Testis;Testis biopsy

International Publications Awards
Cairo University

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Seminal Mast Cells in Infertile Asthenozoospermic Males**

A. El-Karaksy, T. Mostafa, O. K. Shaeer, D. R. Bahgat and N. Samir

Journal : **Andrologia**

ISSN : 0303-4569 **Impact Factor :** 1.025

Abstract :

This work aimed to assess the possible association between the presence of seminal mast cells and asthenozoospermia. One hundred and seventy-six male subjects were investigated: group (Gr)1 (n = 46) normozoospermic fertile controls, Gr2 (n = 62) idiopathic asthenozoospermia, Gr3 (n = 32) astheno- zoospermia with scrotal varicocele and Gr4 (n = 36) asthenozoospermia with leucocytospermia. Four smear slides were prepared for each semen sample to be stained with toluidine blue–pyronin to detect mast cells. A significant increase was shown in mast cell-positive samples among varicocele-associated and idiopathic asthenozoospermic patients in comparison with fertile controls. Seminal mast cells were also detected at higher frequency among smokers and in age group over 40 years. It is concluded that mast cells and their products may play a pivotal role in the pathogenesis of asthenozoospermia, possibly pro- posing a new goal for medical treatment of infertile males to pursue. In addi- tion, this concept may in a way detain smoking as a cause of male infertility considering the clear abundance of mast cells in semen samples of smokers.

Keywords :

Male infertility; Mast cells; Semen; Sperm motility; Spermatozoa

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Assessment of Heme Oxygenase-1 (HO-1) Activity in the Cavernous Tissues of Sildenafil Citrate-Treated Rats**

M. Talaat Abdel Aziz, M. Farid Al-Asmar, Taymour Mostafa, Hazem Atta, Laila Rashed, Dina Sabry, Shedeed Ashour and Ahmed T. Abdel Aziz

Journal : **Andrology**

ISSN : 1008-682X **Impact Factor :** 1.737

Abstract :

To assess heme oxygenase-1 (HO-1) activity in the cavernous tissue of sildenafil citrate-treated rats. Methods: One hundred and ninety-two Sprague-Dawley male rats, divided into four equal groups, were investigated. Group 1, the control group, received regular animal chow; group 2 received sildenafil citrate by intragastric tube; group 3 received sildenafil and HO inhibitor (zinc protoporphyrin, ZnPP); and group 4 received sildenafil and nitric oxide synthase (NOS) inhibitor L-nitroarginine methyl ester (L-NAME). Twelve rats from each group were killed after 0.5 h, 1 h, 2 h and 3 h of drug administration. Then HO-1 activity, cGMP levels and NOS enzymatic activity in the cavernous tissues were estimated. Results: In cavernous tissue, HO-1 activity, NOS enzymatic activity and cGMP concentration increased significantly in sildenafil-treated rats compared to other groups throughout the experiment. Rats receiving either HO or NOS inhibitors showed a significant decrease in these parameters. HO-1 cavernous tissue activity and NOS enzymatic activity demonstrated a positive significant correlation with cGMP levels ($r = 0.646$, $r = 0.612$ respectively; $P < 0.001$). Conclusion: The actions of PDE5 inhibitor sildenafil citrate in the cavernous tissue are partly mediated through the interdependent relationship between both HO-1 and NOS activities.

Keywords :

Erectile dysfunction; Heme oxygenase; Sildenafil citrate; Nitric oxidesynthase; Carbon monoxide

International Publications Awards
Cairo University

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Seminal Plasma Anti-Müllerian Hormone Level Correlates with Semen Parameters but does not Predict Success of Testicular Sperm Extraction (TESE)**

Taymour Mostafa, Medhat K. Amer, Guirgis Abdel-Malak, Taha Abdel Nsser, Wael Zohdy, Shedeed Ashour, Dina El-Gayar and Hosam H. Awad

Journal : **Asian J Andrology**

ISSN : 1008-682X **Impact Factor :** 1.737

Abstract :

Aim: To assess seminal plasma anti-Müllerian hormone (AMH) level relationships in fertile and infertile males. Methods: Eighty-four male cases were studied and divided into four groups: fertile normozoospermia (n = 16), oligoastheno- teratozoospermia (n = 15), obstructive azoospermia (OA) (n = 13) and non-obstructive azoospermia (NOA) (n = 40). Conventional semen analysis was done for all cases. Testicular biopsy was done with histopathology and fresh tissue examination for testicular sperm extraction (TESE) in NOA cases. NOA group was subdivided according to TESE results into unsuccessful TESE (n = 19) and successful TESE (n = 21). Seminal plasma AMH was estimated by enzyme linked immunosorbent assay (ELISA) and serum follicular stimulating hormone (FSH) was estimated in NOA cases only by radioimmunoassay (RIA). Results: Mean seminal AMH was significantly higher in fertile group than in oligoasthenoteratozoospermia with significance (41.5 ± 10.9 pmol/L vs. 30.5 ± 10.3 pmol/L, $P < 0.05$). Seminal AMH was not detected in any OA patients. Seminal AMH was correlated positively with testicular volume ($r = 0.329$, $P = 0.005$), sperm count ($r = 0.483$, $P = 0.007$), sperm motility percent ($r = 0.419$, $P = 0.021$) and negatively with sperm abnormal forms percent ($r = –0.413$, $P = 0.023$). Nonsignificant correlation was evident with age ($r = –0.155$, $P = 0.414$) and plasma FSH ($r = –0.014$, $P = 0.943$). In NOA cases, seminal AMH was detectable in 23/40 cases, 14 of them were successful TESE (57.5%) and was undetectable in 17/40 cases, 10 of them were unsuccessful TESE (58.2%). Conclusion: Seminal plasma AMH is an absolute testicular marker being absent in all OA cases. However, seminal AMH has a poor predictability for successful testicular sperm retrieval in NOA cases.
265–270)

Keywords :

Seminal plasma; Anti-MüllerianHormone; Spermatogenesis; Azoospermia; Testicular sperm extraction

International Publications Awards
Cairo University

Name: Prof. Taimour Mostafa Ibrahim

Dep.: Andrology Sexology and sexually transmitted diseases

Title: Tadalafil as an in Vitro Sperm Motility Stimulant
T. Mostafa

Journal: Andrologia

ISSN: 0303-4569 **Impact Factor:** 1.025

Abstract:

Tadalafil (Cialis®) is a known oral selective phosphodiesterase-5 inhibitor used widely in the management of erectile dysfunction. To assess its ability on human sperm motility in vitro, 70 asthenozoospermic semen specimens delivered by masturbation were investigated. Semen samples were divided equally into four tubes, one as a control and to the others tadalafil dissolved solution was added in vitro in three different concentrations (4.0, 1.0, 0.5 mg ml)$^{-1}$ respectively). The tubes were incubated and were followed up for sperm motility er cent changes for 0.5, 1, 2, 3 h. It was found that the concentration used played an important role in the degree of sperm enhancement. Specimens treated with 4 mg ml)$^{-1}$ tadalafil solution demonstrated a significant decrease in sperm motility compared with the controls. Specimens treated with 1.0 mg ml)$^{-1}$ solution demonstrated significant increase in sperm progressive forward motility. Specimens treated with 0.5 mg ml)$^{-1}$ solution demonstrated significant increases in sperm motility but lower than that of 1 mg ml)$^{-1}$ concentration. It is concluded that in vitro use of tadalafil solution in special concentration has a significant stimulatory effect on asthenozoospermic sperm motility

Keywords:

Asthenozoospermia; Semen; Sperm motility; Spermatozoa; Tadalafil

Name: Prof. Taimour Mostafa Ibrahim

Dep.: Andrology Sexology and Sexually Transmitted Diseases

Title: Oral Phosphodiesterase-5 Inhibitors Effect of Heme Oxygenase Inhibition on cGMP Signalling in Rat Cavernous Tissue

M. T. Abdel Aziz, T. Mostafa, H. Atta, L. Rashed1, S. A. Marzouk, E. M. Obaia, D. Sabry, A. A. Hassouna, A. M. El-Shehaby and A.T. Abdel Aziz

Journal: Andrologia

ISSN: 0303-4569 **Impact Factor:** 1.025

Abstract:

This work postulated that heme oxygenase (HO) is partly responsible for controlling hosphodiesterase-5 inhibitor actions by modulating cyclic guanosine monophosphate (cGMP) cavernous tissue levels. Five hundred and four male Sprague–Dawley rats, divided into five groups, were investigated. Group 1 (n = 72) included controls, group 2 (n = 72) received sildenafil citrate (Viagra^{R}) orally, group 3 (n = 72) received vardenafil hydrochloride (Levitra^{R}), group 4 (n = 72) received tadalafil (Cialis^{R}). Group 5 (n = 216), subdivided into three subgroups (A, B and C, 72 each), received the same dose of each drug with the HO inhibitor, Zn protoporphyrin. Eight rats from each group/ subgroup were killed at 0.5, 1, 2, 3, 4, 6, 18, 24 and 36 h when cGMP levels in the cavernous tissues were estimated. Cavernous tissue cGMP levels increased significantly in sildenafil, vardenafil and tadalafil-treated rats compared to the controls with significant decreases after HO inhibition. It is concluded that the effects of these PDE-5 inhibitors in rat cavernous tissue are partly mediated through HO activity via the cGMP signalling pathway.

Keywords:

Cgmp; Erectile Dysfunction; Heme Oxygenase; PDE Inhibitors; Sildenafil; Tadalafil; Vardenafil.

International Publications Awards
Cairo University

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Assessment of Seminal Plasma laminin in Fertile and Infertile Men**

Mohamed R. El-Dakhly, Gamil A. Tawadrous, Taymour Mostafa, Mohamed M. F. Roaia, Abdel R. M. El-Nashar, Shedeed A. Shedeed, Ihab I. Kamel, Amal A. Aziz and Yasser El-Mohtaseb

Journal : **Andrologia**

ISSN : 0303-4569 **Impact Factor :** 1.025

Abstract :

Aim: To assess laminin levels in the seminal plasma of infertile and fertile men, and to analyze the correlation of laminin levels with sperm count, age, sperm motility and semen volume. Methods: One hundred and twenty-five recruited men were equally divided into five groups according to their sperm concentration and clinical examination: fertile normozoospermia, oligoasthenozoospermia, non-obstructive azoospermia (NOA), obstructive azoospermia (OA) and congenital bilateral absent vas deferens (CBAVD). The patients' medical history was investigated and patients underwent clinical examination, conventional semen analysis and estimation of seminal plasma laminin by radioimmunoassay. Results: Seminal plasma laminin levels of successive groups were: 2.82 ± 0.62, 2.49 ± 0.44, 1.77 ± 0.56, 1.72 ± 0.76, 1.35 ± 0.63 U/mL, respectively. The fertile normozoospermic group showed the highest concentration compared to all infertile groups with significant differences compared to azoospermic groups ($P < 0.05$). Testicular contribution was estimated to be approximately one-third of the seminal laminin. Seminal plasma laminin demonstrated significant correlation with sperm concentration ($r = 0.460$, $P < 0.001$) and nonsignificant correlation with age ($r = 0.021$, $P = 0.940$), sperm motility percentage ($r = 0.142$, $P = 0.615$) and semen volume ($r = 0.035$, $P = 0.087$). Conclusion: Seminal plasma laminin is derived mostly from prostatic and testicular portions and minimally from the seminal vesicle and vas deferens. Estimating seminal laminin alone is not conclusive in diagnosing different cases of male infertility.

Keywords :

MaleInfertility; Semen; Seminal plasma; Testis; Basement membrane; Laminin; Azoospermia; Congenital bilateral absent vas deferens

International Publications Awards
Cairo University

Name: **Prof. Taimour Mostafa Ibrahim**

Dep.: **Andrology Sexology and sexually transmitted diseases**

Title: **Repeated Intracorporeal Self-Injection: Effect on Peak Systolic Velocity and Cavernosal Artery Diameter**

H Awad, A El-Karaksy, T Mostafa, M Abbas, II Kamel, M Arafa and A Zeidan

Journal: Impotence Research

ISSN: 0955-9930 **Impact Factor:** 2.353

Abstract:

This work is aimed at evaluating the effect of repeated intracavernosal injection (ICI) self-injection on the peak systolic velocity (PSV) and the diameter of cavernosal arteries. Sixty erectile dysfunction (ED) patients who were positive responders for ICI therapy were studied. Pharmacopenile duplex ultrasonography (PPDU) was carried out before starting ICI and after 10 doses of home therapy in an open-label uncontrolled study. There was significant increase in the cavernosal artery diameter and their PSV before and after injection. Cavernosal arteries diameter before injection in both right and left sides was 0.64 ± 0.13 and 0.63 ± 0.12mm at the start and became 0.81± 0.22 and 0.79 ± 0.22mm respectively at the end with significant differences (P<0.001). Cavernosal arteries diameter after injection in both right and left sides was 1.10 ± 0.18 and 1.09 ± 0.19mm at the start and became 1.34± 0.39 and 1.27± 0.33mm respectively at the end with significant differences (P<0.001). PSV at the start was 33.77± 13.26 and 32.33± 8.09 cm/s on both right and left sides and became 44.4± 1.19 and 46.1± 5.86 cm/s respectively at the end with significant differences (P<0.001). It is concluded that repeated ICI improves arterial erectile response with associated increase in PSV and cavernosal artery diameters.

Keywords:

Erectile dysfunction; ICI; PSV; Cavernosal artery; Duplex ultrasound

International Publications Awards
Cairo University

Name: **Prof. Taimour Mostafa Ibrahim**

Dep.: **Andrology Sexology and sexually transmitted diseases**

Title: Involvement of α-Receptors and Potassium Channels in the Mechanism of Action of Sildenafil Citrate

M. A. El-Metwally, F. M. Sharabi, T. T. Daabees, A. M. Senbel and T. Mostafa

Journal: Impotence Research

ISSN: 0955-9930 **Impact Factor:** 2.35

Abstract:

Modulation of the adrenergic activity and interfering with channels such as potassium channels may affect relaxation and contraction of the corpus cavernosum. Sildenafil is a selective phosphodiesterase-5 inhibitor, proven effective in treating erectile dysfunction.In this study, the effect of sildenafil citrate on α-receptors modulation and potassium channels was tested. The direct relaxant effect of sildenafil citrate was studied by measuring changes in isometric tension in isolated strips of rabbit corpus cavernosum and rat aortic ring precontracted with phenylephrine or KCl compared to that of diazoxide in the presence and absence of tetraethylammonium. The inhibitory effect of sildenafil on electrical field stimulation-induced contraction of rabbit corpus cavernosum and rat anococcygeus muscle was also studied compared to that of phentolamine. Muscle relaxant effect of sildenafil ($1x10^{-9}$–1×10^{-6} M on phenylephrine-precontracted rabbit corpus cavernosum strips was not attenuated by N^G-nitro-L-arginine (3×10^{-5} M). Cumulative addition of sildenafil ($1x\ 10^{-9}$–1×10^{-6} M) and phentolamine (1×10^{-9}–1×10^{-6} M) to the organ bath dose-dependently inhibited electrical field stimulation-induced contraction of rabbit corpus cavernosum and rat anococcygeus muscle, with almost similar EC_{50} values. Sildenafil (1×10^{-7} M) also inhibited phenylephrine-induced contraction of rat aortic rings by 39.83±3.01%. In addition, tetraethylammonium (1×10^{-3} M) significantly attenuated the muscle relaxant effect of sildenafil (1×10^{-9}–1×10^{-6} M) on phenylephrine-precontracted strips of rabbit corpus cavernosum. Sildenafil citrate is capable of producing cavernosal smooth muscle relaxation by an additional mechanism that may involve a-receptors and potassium channel opening.

Keywords:

Erectile dysfunction; Phosphodiesterase-5 inhibitors; Sildenafil citrate; Corpus cavernosum; A-Receptors; Potassium channels

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Heme Oxygenase vs. Nitric Oxide Synthase in Signaling Mediating Sildenafil Citrate Action**

M. Talaat Abdel Aziz, Mohamed Farid El-Asmer, Taymour Mostafa ,Samia Mostafa, Hazem Atta. Abdel Aziz Wassef, Hanan Fouad, Laila Rashed, Dina Sabry and Soheir Mahfouz

Journal : **Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.68

Abstract :

The tombs of the Pharonic kings in "valley of the kings", Thebes, Egypt are famous for their unique wall paintings and structure. KV62, King Tutankhamen tomb, is the most famous because of the treasures it held intact for over three thousand years. The burial chamber is decorated with scenes from the Opening of the Mouth ritual, Book of the Dead, and representations of the king with various deities. The current status of the tomb is very critical as pink stain and black fungus spots have spread over decorated walls due to excessive moisture content in the air. Visitors' activities led to extra moisture production inside the tomb, this would naturally lead to more pink spots and fungus activities. For this purpose and in pursue of restoration operation it was suggested to design and install a special ventilation system that would reduce the relative humidity inside the tomb to normally acceptable environment for artifacts. Commercial CFD codes are also used in order to simulate the indoor air conditions, air flow velocities, temperatures and relative humidity patterns. A parametric investigation to select the most suitable airside system design that doesn't affect the archaeological theme of the tomb and that provides lower air velocities around the wall paintings as well as lower air humidity all over the tomb is reported.

Keywords :

Erectile dysfunction; Heme oxygenase; Sildenafil citrate; Corpus cavernosum; Nitric oxide; Carbon monoxide

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **Chronic Lead Exposure may be Associated with Erectile Dysfunction**

Tarek H. Anis, Ahmed ElKaraksy, Taymour Mostafa, Amr Gadalla, Hager Imam, Lamya Hamdy and Omayma Abu el-Alla

Journal : **Sexual Medicine**

ISSN : 1743-6095 **Impact Factor :** 4.68

Abstract :

Introduction: Heavy metals constitute significant potential threats to human health in both occupational and environmental settings. Research examining the etiology of lead toxicity-induced hypertension reveals that the free radical production and lowering of inherent antioxidant reserves resulting from lead toxicity are directly related to vasoconstriction underlying lead-induced hypertension. A similar mechanism would affect smooth muscle relaxation in the cavernous tissue leading to erectile dysfunction (ED). Aim: Is to study the possible hazardous effect of chronic lead exposure on the erectile function, and to document the deposition of lead in the cavernous tissue. Methods: The study group consisted of 34 men with ED, consecutively scheduled for penile implant insertion at Cairo University Hospital, as well as 15 controls. We determined the blood lead level for the two groups by the use of atomic absorption spectrophotometry. Sixteen of the 34 patients, and none of the 15 controls, had elevated lead serum levels (above 25 [g/dL]). Main Outcome Measures: We estimated the levels of two reactive oxygen species (ROS) and four antioxidants in peripheral blood for the two groups. At the time of penile implant insertion, we prepared cavernous tissue paraffin sections stained with Mallory-Parker stain to study lead deposition. We also prepared ultrathin sections for electron microscopy. We estimated cavernous tissue lead level. Results: The ED group had significantly higher blood lead level when compared with the control group. A significant positive correlation was found between the blood lead level and cavernous tissue lead level of the ED group. Individuals with high blood lead had significantly higher levels of serum ROS and significantly lower levels of serum antioxidants, compared with those having low blood lead. Histological sections from patients with high blood lead showed deposition of grayish lead granules in the cavernous tissue.

Keywords :

Erectile dysfunction; Leadexposure; Cavernous tissue; Reactive Oxygen species; Antioxidants

Name : **Prof . Taimour Mostafa Ibrahim**

Dep. : **Andrology**

Title : **In Vitro Sildenafil Citrate use as A Sperm Motility Stimulant**

T .Mostafa

Journal : **Fertility and Sterility**

ISSN : 0015-0282 **Impact Factor :** 3.28

Abstract :

The effect of different concentrations of sildenafil citrate (Viagra) solution in vitro on human sperm motility was assessed in 85 asthenozoospermic semen specimens. Semen samples were divided equally into six tubes, one as a control and to the others, sildenafil dissolved solution was added (v/v) in vitro with five different concentrations (4.0, 2.0, 1.0, 0.5, 0.1 mg/mL). The tubes were incubated and were followed up for sperm motility changes at 0.5, 1, 2, and 3 hours. It is demonstrated that the in vitro use of sildenafil citrate solution has a concentration-related stimulatory effect on ejaculated sperm motility.

International Publications Awards
Cairo University

Name : **Prof . Tamer Ahmed Macky**

Dep. : **Ophthalmology**

Title : **Retinal Toxicity of Triamcinolone's Vehicle (benzyl alcohol): an Electrophy Siologic and Electron Microscopic Study**

Tamer A. Macky, Dina Helmy and Nihal El Shazly

Journal : **Graefe's Arch Clin Exp Ophthalmol**

ISSN : 0721-832X **Impact Factor :** 1.609

Abstract :

Purpose: To assess rabbit retinal toxicity to triamcinolone acetonide vehicle, benzyl alcohol, when injected intravitreally.
Material and Methods: This prospective comparative experimental study included 24 pigmented rabbits assigned into 2 groups; group 1 (experiment, n=12) received intravitreal 0.1ml of benzyl alcohol (BA), and group 2 (control, n=12) received intravitreal 0.1ml of balanced salt solution (BSS); all injections were done in the right eyes. Electroretinograms (ERGs) were recorded on both eyes of all available rabbits of both groups at 3, 7, 14, 28 and 42 days following injections. Three rabbits from each group were killed at 7, 14, 28 and 42 days and both eyes were sent for either light or electron microscopic examination.
Results: ERG recordings showed absent b wave with severely depressed a wave at day 3 and 7 in 11 BA-injected eyes of group 1. These ERG responses continued to be recorded in the unkilled rabbits up to 6 weeks with no recovery. In group 2: only 2 BSS-injected eyes showed abnormal b wave at 3 and 7 days with complete recovery by 6 weeks. Light microscopy showed severely reduced ganglion cell layer GCL, mild to moderate reduction of inner (INL) and outer (ONL) nuclear layers, and mild architectural changes of photoreceptors layers (PRL) in group 1. In group 2: no structural changes seen except for mild reduction of GCL in the 2 rabbit with ERG changes. Electromicroscopy showed intracellular irreversible changes in the GCL, INL, ONL, and PRL at 6 weeks in group 1, with no significant changes in group 2.Conclusion: Triamcinolone Acetonide's Vehicle, benzyl alcohol, produced severe irreversible ERG and structural damage to rabbit neurosensory retinal following intravitreal injection.

Keywords :

Triamcinolone acetonide; Retinal toxicity ; Electroretinogram; Histopathology

Faculty of Pharmacy

International Publications Awards
Cairo University

Name : **Prof . Ahmed Abdel-Bary Abdel-Rahman**

Dep. : **Pharmaceutics**

Title : **Promising Ternary Dry Powder Inhaler Formulations of Cromolyn Sodium: Formulation and In Vitro-In Vivo Evaluation**

Ahmed Abd Elbary, Hanan. M. El-laithy and Mina I. Tadros

Journal : **Archives of Pharmacal Research**

ISSN : 0253-6269 **Impact Factor :** 0.929

Abstract :

Glucose monohydrate and sorbitol were evaluated as alternative carriers to á-lactose monohy- drate in dry powder inhalations. Cromolyn sodium (CS) - carrier binary formulae were pre- pared and tested in vitro by aerosolization via a twin stage impinger using three types of inhaler devices; Spinhaler®, Aerolizer®and Handihaler®. Glucose monohydrate and sorbitol- containing formulae that were inhaled via a Handihaler ® showed significantly higher drug fine particle fractions ($P<0.001$) than that of the same formulae aerosolized via other devices. Upon storage of the prepared formulae under uncontrolled humidity, that may be encountered dur- ing storage and use, marked reductions in these fractions were observed. Incorporation of an optimum Aerosil® 200 concentration, as a ternary component, minimized this effect. A urinary excretion pharmacokinetic method was used to evaluate the bioavailability of the selected ter- nary formulae, inhaled via a Handihaler ®, relative to the marketed Intal® Spincaps® , inhaled via a Spinhaler®. It was found that the relative bioavailability percentages of the developed formu- lae were more than twice that of the marketed one suggesting possible future utilization of these more effective ternrry formulae using the more efficient Handihaler ® inhaler device.

Keywords :

Dry Powder inhaler; Alternative carriers; Glucose monohydrate; Sorbitol; Aerosil ® 200.

Name : **Prof . Ahmed Abdel-Bary Abdel-Rahman**

Dep. : **Pharmaceutics**

Title : **Nanosuspension as an Ophthalmic Delivery System for Certain Glucocorticoid Drugs**

M. A. Kassem, A. A.Abdel Rahman, M. M. Ghorab, M. B. Ahmed and R. M. Khalil

Journal : **Pharmaceutics**

ISSN : 0378-5173 **Impact Factor :** 2.212

Abstract :

Poorly – water soluble compounds are difficult to develop as drug products using comventional formulation techniques. The use of nanotechnology to formulate poorly-water-soluble drugs as nanosuspensions offers the opportunity to address many of the deficiencies associated with this class of molecules. In the present study, the high pressure homogenization method used to prepare nanosuspensions of three practically insoluble glucocorticoid drugs; hydrocortisone, prednisolone and dexamethasone. The effect of particle size in the micro and nano-size ranges as well as the effect of viscosity of the nanosuspension on the ocular bioavailability was studied by measuring the intraocular pressure of normotensive Albinorabbits using shi□etz tonometer The results show that compared to solution and micro-crystalline suspensions it is a common feature of the three drugs that the nanosuspensions always enhance the rate and extent of ophthalmic drug absorption as well as the rate and extent of oplthalmic drug absorption as well as the intensity of drug action. In the majority of cases nanosuspensions extend the duration of drug effect to a significant extent. The data presented confirms that nanosuspensions differ from micro-crystalline suspensions and solution as opthalmic drug delivery and that the differences are statistically, highly to very highly significant. The results confirm also the importance of viscosity of nanosuspension especially in increasing the duration of drug action.

Keywords :

Nanosuspension; Particle size; Ophthalmology; Glucocorticoids

International Publications Awards
Cairo University

Name : Dr . Amal El-Sayed Khaleel

Dep. : Pharmacognosy

Title : Chemical and Biological Study of the Residual Aerial Parts of Sesamum Indicum L.

Amal El-Sayed Khaleel, Mariam Hussain Gonaid, Ramzia Ismail El-Bagry, Amany Ameen Sleem and Marwan Shabana

Journal : Food and Drug Analysis

ISSN : 1021-9498 **Impact Factor :** 0.313

Abstract :

The chemical composition of the residual aerial parts of the Egyptian crop of Sesamum indicum L. after collection of the seeds, was studied. Sesamin, sesamolin, stigmasterol, β-sitosterol and stigmasterol-3-O-β-D-glucoside were isolated from the petroleum ether fraction of the alcoholic extract. Ferulic acid, rhamnetin, verbascoside, kaempferol-3-O-β-D-glucuronide and mequelianin (quercetin-3-O-β-D-glucuronide) were isolated from the butanol fraction. The content of the major constituents, namely sesamin and sesamolin, were determined by HPLC method. The alcoholic extract as well as its petroleum ether and butanol fractions were tested in vivo for the antioxidant, antihyperglycaemic and anticoagulant activities. The alcoholic extract exhibited a higher activity than its petroleum ether and butanol fractions in all the tested biological activities.

Keywords :

Sesamum indicum; Residual aerial parts; Lignans; F lavonoids; Sterols; Antioxidant; Anticoagulant; Antihyperglycaemic activity

Name : **Dr . Aymen Samir Yassin**

Dep. : **Microbiology & Immunology**

Title : **Potential New Antibiotic Sites in the Ribosome Revealed by Deleterious Mutations in RNA of the Large Ribosomal Subunit**

Aymen Yassin and Alexander S. Mankin

Journal : **Biological Chemistry**

ISSN : 0021-9258 **Impact Factor :** 5.81

Abstract :

The ribosome is the main target for antibiotics that inhibit protein biosynthesis. Despite the chemical diversity of the known antibiotics that affect functions of the large ribosomal subunit, these drugs act on only a few sites corresponding to some of the known functional centers. We have used a genetic approach for identifying structurally and functionally critical sites in the ribosome that can be used as new antibiotic targets. By using randomly mutagenized rRNA genes, we mapped rRNA sites where nucleotide alterations impair the ribosome function or assembly and lead to a deleterious phenotype. A total of 77 single-point deleterious mutations were mapped in 23 S rRNA and ranked according to the severity of their deleterious phenotypes. Many of the mutations mapped to familiar functional sites that are targeted by known antibiotics. However, a number of mutations were located in previously unexplored regions. The distribution of the mutations in the spatial structure of the ribosome showed a strong bias, with the strongly deleterious mutations being mainly localized at the interface of the large subunit and the mild ones on the solvent side. Five sites where deleterious mutations tend to cluster within discrete rRNA elements were identified as potential new antibiotic targets. One of the sites, the conserved segment of helix 38, was studied in more detail. Although the ability of the mutant 50 S subunits to associate with 30 S subunits was impaired, the lethal effect of mutations in this rRNA element was unrelated to its function as an intersubunit bridge. Instead, mutations in this region had a profound deleterious effect on the ribosome assembly.

Name : **Dr . Ehab Rasmy Bendas**

Dep. : **Pharmaceutics**

Title : **Enhanced Transdermal Delivery of Salbutamol Sulfate via Ethosomes**

Ehab R. Bendas and Mina I. Tadros

Journal : **AAPS Pharmscitech**

ISSN : 1530-9932 **Impact Factor :** 0.86

Abstract :

The main objective of the present work was to compare the transdermal delivery of salbutamol sulfate (SS), a hydrophilic drug used as a bronchodilator, from ethosomes versus classic liposomes, containing different cholesterol and dicetylphosphate concentrations. All the systems were characterized for shape, particle size, entrapment efficiency percentage, by image analysis optical microscopy or transmission electron microscopy, laser diffraction and ultracentrifugation, respectively. In-vitro drug permeation via a synthetic semi-permeable membrane or a newly born mice skin were carried out in Franz diffusion cells. The selected systems were incorporated into pluronic F-127 gels and evaluated for both drug permeation and mice skin deposition. In all systems, the presence of spherical-shaped vesicles was predominant. The vesicle size was significantly decreased ($P<0.05$) by decreasing cholesterol concentration and increasing dicetylphosphate and ethanol concentrations. The entrapment efficiency percentage was significantly increased ($P<0.05$) by increasing cholesterol, dicetylphosphate and ethanol concentrations. In-vitro permeation studies of the prepared gels containing the selected vesicles showed that ethosomal systems were much more efficient at delivering (SS) into mice skin (in terms of quantity and depth), than either liposomes, aqueous or hydroalcoholic solutions.

Keywords :

Transdermal; Salbutamol sulfate; Liposomes; Ethosomes.

International Publications Awards
Cairo University

Name: **Prof. Elsayed A. Aboutabl**

Dep.: **Pharmacognosy**

Title: **Anticancer and Antioxidant Tannins from Pimenta Dioica Leaves**

Mohamed S. A. Marzouk, Fatma A. Moharram, Mona A. Mohamed, Amira M. Gamal-Eldeen and Elsayed A. Aboutabl

Journal: **Zeitschrift Fur Naturforschung C-A J. of Biosciences**

ISSN: 0939-5075 **Impact Factor:** 0.72

Abstract:

Two galloylglucosides, 6-hydroxy-eugenol 4-O-(6′-O-galloyl)-β-d-$^4C_1$-glucopyranoside (4) and3-(4-hydroxy-3-methoxyphenyl)-propane-1,2-diol-2-O-(2′,6′-di-O-galloyl)-β-d-$^4C_1$-glu- copyranoside (7), and two C-glycosidic tannins, vascalaginone (10) and grandininol (14), to- gether with fourteen known metabolites, gallic acid (1), methyl gallate (2), nilocitin (3), 1- O-galloyl-4,6-(S)-hexahydroxydiphenoyl-(α/β)-d-glucopyranose (5), 4,6-(S)-hexahydroxydi- phenoyl-(α/β)-d-glucopyranose (6), 3,4,6-valoneoyl-(α/β)-d-glucopyranose (8), pedunculagin (9), casuariin (11), castalagin (12), vascalagin (13), casuarinin (15), grandinin (16), methyl- flavogallonate (17) and ellagic acid (18), were identified from the leaves of Pimenta dioica (Merr.) L. (Myrtaceae) on the basis of their chemical and physicochemical analysis (UV, HRESI-MS, 1D and 2D NMR). It was found that 9 is the most cytotoxic compound against solid tumour cancer cells, the most potent scavenger against the artificial radical DPPH and physiological radicals including ROO$^{\cdot}$, OH$^{\cdot}$, and $O2^{-\cdot}$,and strongly inhibited the NO generation and induced the proliferation of T-lymphocytes and macrophages. On the other hand, 3 was the strongest NO inhibitor and 16 the highest stimulator for the proliferation of T-lymphocytes, while10 was the most active inducer of macrophage proliferation.

Keywords:

Pimenta dioica; Galloylglucosides; Antioxidant; Anticancer.

Name: **Prof. Fadi Mohsen Awadallah**

Dep.: **Pharmaceutical Chemistry**

Title: **Synthesis of Novel Lactam Derivatives and their Evaluation as Ligands for the Dopamine Receptors, Leading to a D4-Selective Ligand**

Fadi M. Awadallah, Franziska Muller, Jochen Lehmannb and Ashraf H. Abadia

Journal: **Bioorganic & Medicinal Chemistry**

ISSN: 0968-0896 **Impact Factor:** 2.62

Abstract:

The preparation of some lactam (cyclic amide) derivatives bearing various phenylpiperazinylbutyl side chains attached to the amide nitrogen together with their dopamine receptor affnity study is described. The synthesis of the target compounds involved the preparation of the intermediate bromobutyl derivatives of the appropriate lactam followed by N-alkylation of the appropriate phenylpiperazines with these intermediates. Radioligand binding studies at D_2–D_5 receptor subtypes and a functional calcium assay of the target compounds at D_2 and D_5 receptor subtypes were performed. All compounds, except **12a** and **12b**, showed selectivity towards the D_2-like receptor subtypes. Selectivity of the indolinone derivatives **11a–d** at the D_4 receptors was observed. Compound **11b** exhibited a remarkable affnity to hD_4 receptors with K_i value of 0.04 ± 0.02 nm and was >43,000-fold selective over the hD_2 receptor. In the functional assay, all the active compounds were of antagonistic activity.

Keywords:

Dopamine ligands; Arylpiperazines; Cyclic amides; Lac- tams; Receptor selectivity

Name : **Prof . Fatma Abd-El-Fattah Ragab**

Dep. : **Pharmaceutical Chemistry**

Title : **Synthesis of some Novel Quinolines and Pyrimido [4,5-b] Quinolines Bearing a Sulfonamide Moiety as Potential Anticancer and Radioprotective Agents**

Mostafa M. Ghorab, Fatma A. Ragab, Eman Noaman, Helmy I. Heiba, Ebaa M. El-Hossary

Journal : **Arzneimittel-Forscnung (Drug Research)**

ISSN : 0004-4172 **Impact Factor :** 0.596

Abstract :

Some novel 4-(quinolin-1-yl) benzenesulfonamide and 4-(pyrimido [4,5-b] quinolin-10-yl) benzenesulfonamide derivatives have been synthesized. All the newly synthesized target compounds were subjected to in vitro cytotoxic screening to be evaluated for their anticancer activity against Ehrlich ascites carcinoma cells. Among these new compounds, compounds 9a, 11, 12b, 18 and in particular, 19 showed promising in vitro cytotoxic activity compared with doxorubicin (CAS 23214-92-8) as a referance drug. Moreover, compound 8 exhibited in vivo radioprotective activity, against γ-iradation, in mice.

Keywords :

Anticancer agents; Pyrimidoquinolines; Anti¬cancer and radioprotective activity; Sulfonamide moiety; Quinolines; Anticancer and Radioprotective activity; Sulfonamide moiety; Radioprotective agents

Name : **Prof . Fatma Abd-El-Fattah Ragab**

Dep. : **Pharmaceutical Chemistry**

Title : **Utility of 4-(5,5-Dimethyl-3- oxo- cyclohex-1- enyl- amino) benzenesulfonamide in the Synthesis of Novel Quinolines as Possible Anticancer and Radioprotective Agents**

Mostafa M. Ghorab, Fatma A. Ragab, Eman Noaman, Helmy I. Heiba and Ebaa M. El-Hossary

Journal : **Arzneimittel-Forschung (Drug Research)**

ISSN : 0004-4172 **Impact Factor :** 0.596

Abstract :

The present work reports the possible utility of 4-(5,5-dimethyl-3-oxo-cyclohex-1-enylamino) benzenesulfonamide in the synthesis of some novel 4-(quinolin-1-yl) benzenesulfonamide derivatives (6a-0). Structures of newly synthesized compounds were confirmed by elemental analyses and spectral data. All the newly synthesized compounds were evaluated for their in vitro anticancer activity. Compounds 6k, 6j and 6m showed interesting cytotoxic activity compared with doxorubicin (CAS 23214-92-8) as a referance drug. Additionally, compound 6c exhibited in vivo radioprotective activity, against γ-iradation, in mice.

Keywords :

Anticancer drugs; Quinolines; Anticancer activity; Radioprotective activity; Sulfo¬namide moiety; Radioprotective drugs; Sulfonamides

Name: **Prof. Fatma A. Ragab**

Dep.: **Pharmaceutical Chemistry Department**

Title: **Synthesis of 6- and 9-Alkylaminomethyl Furoflavones as Gastroprotective Agents Synthesis of 6- and 9-Alkylaminomethyl Furoflavones as Gastroprotective Agents**

Fatma A. Ragab, Ghaneya S. Hassan, Hanan A. Yossef, and Hanna A. Hashem

Journal: **Medicinal Chemistry**

ISSN: 0223-5234 **Impact Factor:** 2.187

Abstract:

The synthesis of 9- and 6-alkylaminomethyl furoflavones **5a, b, 9a–c, 13a, b, 15a–g** and **18** from the naturally occurring chromones visnagin and khellin. Gastroprotective potency of these compounds in the ethanol damage model was determined. The results indicate that, through appropriate substitution, furoflavones can be obtained that are gastroprotective.

Keywords:

Mannich bases; Furoflavones; Furobenzopyran-5-ones; Gastroprotective potency; Claisen reaction

Name: **Prof. Hanan Mohamed El-laithy**

Dep.: **Pharmaceutics and Industrial Pharmacy**

Title: **mplantable Biodegradable Sponges: Effect of Interpolymer Complex Formation of Chitosan with Gelatin on the Release Behavior of Tramadol Hydrochloride**

Nagwa H. Foda, Hanan M. El-laithy, and Mina I. Tadros

Journal: **Drug Development and Industrial Pharmacy**

ISSN: 0363-9045 **Impact Factor:** 0.821

Abstract:

The effect of interpolymer complex formation between positively charged chitosan and negatively charged gelatin (Type B) on the release behavior of tramadol hydrochloride from biodegradable chitosan-gelatin sponges was studied. Mixed sponges were prepared by freeze-drying the cross-linked homogenous stable foams produced from chitosan and gelatin solutions where gelatin acts as a foam builder. Generation of stable foams was optimized where concentration, pH of gelatin solution, temperature, speed and duration of whipping process, and, chitosan-gelatin ratio drastically affect the properties and the stability of the produced foams. The prepared sponges were evaluated for their morphology, drug content, and microstructure using scanning electron microscopy, mechanical properties, uptake capacity, drug release profile, and their pharmacodynamic activity in terms of the analgesic effect after implantation in Wistar rats.

It was revealed that whipping 7% (w/w) gelatin solution, of pH 5.5, for 15 min at 25°C with a stirring speed of 1000 rpm was the optimum conditions for stable gelatin foam generation. Moreover, homogenous, uniform chitosangelatin foam with small air bubbles were produced by mixing 2.5% w/w chitosan solution with 7% w/w gelatinsolution in 1:5 ratio. Indeed, polyionic complexation between chitosan and gelatin overcame the drawbacks of chitosan sponge mechanical properties where, pliable, soft, and compressible sponge with high fluid uptake capacity was produced at 25°Cand 65% relative humidity without any added plasticizer. Drugreleasestudies showed a successful retardation of the incorporated drug where the $t_{50\%}$ values of the dissolution profiles were 0.55, 3.03, and 4.73 hr for cross-linked gelatin, un-cross-linked chitosan-gelatin, and cross-linked chitosan-gelatin sponges, respectively. All the release experiments followed Higuchi's diffusion mechanism over 12 hr. The achieved drug prolongation was a result of a combined effect of both cross-linking and polyelectrolyte complexation between chitosan and gelatin. The analgesic activity of the implanted tramadol hydrochloride mixed chitosangelatin sponge showed reasonable analgesic effect that was maintained for more than 8 hr. Therefore, the use of chitosan and gelatin together appears to allow the formulator to manipulate both the drug release profiles and the mechanical properties of the sponge that could be effectively implanted.

Keywords:

Sponges; Cross-linking; Stable foams; Controlled release; Tramadol hydrochloride

Name: **Prof. Hanan Mohamed Refaat**

Dep.: **Organic Chemistry**

Title: **Synthesis and Antimicrobial Activity of Novel Quinoxaline Derivatives**

Journal: **The Chinese Chemical Society**
Mohga M. Badran, Ashraf A. Moneer, Hanan M. Refaat and Afaf A. El-Malah Organic Chemistry

ISSN: 0009-4536 **Impact Factor:** 0.577

Abstract:

In this study, certain 3-substituted styrylquinoxalin-2(1H)-ones (**2a-d**) and their 2-chloro (**3a-d**) and 2piperazinyl derivatives (**4a-g**) were synthesized from 3-methylquinoxalin-2(1H)-one (1). In addition, a series of 1-alkyl-3-substituted styrylquinoxalin-2(1H)-ones (**5a-d**) was also prepared. Moreover, 3-(N^2- arylidenehydrazinocarbonyl) quinoxalin-2(1H)-ones (**8a-c**) as well as their cyclized oxadiazolinyl deriva- tives (**9a-c**) were prepared from 3-hydrazinocarbonylquinoxalin-2(1H)-one (**7**). Furthermore, 3-(5-substi- tuted thio-1,3,4-oxadiazol-2-yl)quinoxalin-2(1H)-ones (**11a-c**) and (**12a-c**) were obtained from the inter- mediate compound (**10**) - previously obtained via cyclization of (**7**) with CS_2. Likewise, 3-(5-oxo-4,5-di- hydro-(1,3,4-oxadiazol-2-yl)quinoxalin-2(1H)-one (**13**), 3-[5-(4-nitrophenyl)-1,3,4-oxadiazol-2-yl]- quinoxalin-2(1H)-one (**14**) and its 2-chloro derivative (**15**) were prepared from 3-hydrazinocarbonyl- quinoxalin-2(1H)-one (**7**). Some of these derivatives were evaluated for antimicrobial activity in vitro and some of the tested compounds showed antibacterial or antifungal activity.

Keywords:

2-Piperazinyl-3-Styrylquinoxalines; 3-Oxadiazolylquinoxalin-2(1H)-one; Antimicrobial activity

International Publications Awards
Cairo University

Name : Dr . Hanan Mohamed Refaat

Dep. : Organic Chemistry

Title : **Synthesis and Anti-inflammatory Activity of Certain Piperazinylthienylpyridazine Derivatives**

Hanan M. Refaat, Omneya M. Khalil and Hanan H. Kadry

Journal : Archives Pharmacal Research

ISSN : 0253-6269 **Impact Factor :** 0.929

Abstract :

In this study, a novel series of 2-(4-substituted piperazin-l-ylmethyl)-6-(thien-2-yl)-2 H-pyridazi 3-ones (3a-f), 2-(4-substituted piperazin-l-yl carbonylmethyl)-6-(thien-2-yl)-2 H-pyridazin-3-ones (4a-c) and 2-[2-(4-substituted piperazin-l-ylcarbonylethyl)]-6-(thien-2-yl)-2 H-pyridazin-3-ones (5a,b) were prepared from 6-(thien-2-yl)-2H- pyridazin-3-one (1). In addition, 3-(4-substituted piperazin-l-ylcarbonyl methyl thio)-6-(thien-2-yl) pyridazines (6a-c) and 3-[2-(4-substitutedpip- erazin-l-ylcarbonyl ethylthio]-6-(thien-2-yl) pyridazines (7a,b) were synthesized. Furthermore,5-(4-substituted piperazin-l-ylmethyl)-6-(thien-2-yl)-2 H-pyridazin-3-ones (12a,b) were pre- pared. The structures of the new compounds were confirmed by elemental analysis as well as by 1H-NMR, IR and MS data. Some of the newly prepared compounds were subjected to eval- uation for their anti-inflammatory activity against carrageenan-induced paw edema at a dose of 10 mg/kg using indomethacin as the reference standard.

Keywords :

Piperazinylthienylpyridazinones; S-Piperazinylpyridazines; Anti-inflammatory activity

International Publications Awards
Cairo University

Name : Dr . Hosam Mohamed Ashour

Dep. : Microbiology & Immunology

Title : The Role of B Cells in the Induction of Peripheral T Cell Tolerance

Hossam M. Ashour, and Tarek M. Seif

Journal : Leukocyte Biology

ISSN : 0741-5400 **Impact Factor :** 4.572

Abstract :

The immune system has unique mechanisms for maintaining peripheral tolerance to autoreactive T cells that escaped thymic deletion. Critical roles for B cells have been implicated in the induction and/or maintenance of peripheral T cell tolerance. Tolerogenic B cells can directly present antigen to CD8+T cells and/or to CD4+ T cells causing the induction of T cell tolerance of the respective T cell compartment via deletion, anergy, or active suppression. Other mechanisms used by B cells to induce T cell tolerance include inhibition of proliferation and differentiation of CD4+ T cells, persistence of antigen presentation by B cells, regulation of dendritic cell- activity via B cellderived IL-10 or antibodies, and the secretion of suppressive factors that directly inhibit T helper (Th) cells or cytotoxic T lymphocytes (CTL). Taking lessons from the Bcells, antigen-specific T cell tolerance can be induced in cases such as autoimmune diseases, allergic diseases, asthma, and transplant tolerance. Conversely, antigen-specific tolerance to tumor antigens can be abolished in the case of tumor vaccines. By being able to control the B cell function, T cell tolerance can be regulated. This is an important consideration when designing strategies for prevention and therapy of diseases tolerance can be regulated. This is an important consideration when designing strategies for prevention and therapy of diseases.

Keywords :

Antigen presentation; Deletion; Suppression; Anergy.

International Publications Awards
Cairo University

Name : Dr . Hosam Mohamed Ashour

Dep. : Microbiology & Immunology

Title : Characterization of Pseudomonas Aeruginosa Isolated from Clinical and Environmental Samples in Minia, Egypt: Prevalence, Antibiogram and Resistance Mechanisms

Gamal F. Gad, Ramadan A. El-Domany, Sahar Zaki and Hossam M. Ashour

Journal : Antimicrobial Chemotherapy

ISSN : 0305-7453 **Impact Factor :** 3.891

Abstract :

To assess the prevalence, levels of antimicrobial susceptibility and resistance mechanisms of Pseudomonas.Methods: A total of 445 clinical isolates and 200 environmental isolates were collected from three hospitals in Minia, Egypt. The MICs of different antibiotics were determined using the agar dilution method. The isolates were tested for b-lactamase production and for the presence of efflux pumps. Results: Out of the 445 clinical specimens, 107 Pseudomonas strains (24%) and 81 Pseudomonas aeruginosa strains were isolated (18.2%). Out of the 200 environmental specimens, 57 Pseudomonas strains (28.5%) and 39 P. aeruginosa strains were isolated (19.5%). Amikacin was the most active drug against P. aeruginosa followed by meropenem, cefepime and fluoroquinolones. P. aeruginosa was highly resistant to all other antibiotics tested. The environmental isolates of P. aeruginosa exhibited higher antibiotic resistance than clinical isolates. Mechanisms of resistance used by P. aeruginosa included b-lactamase production and multiple drug resistance efflux pumps. Our results showed that 29 (36%) of the clinical P. aeruginosa isolates and 37 (95%) of the environmental P. aeruginosa isolates were b-lactamase producers. In addition, P. aeruginosa isolates effectively used an efflux-mediated mechanism of resistance against ciprofloxacin and meropenem, but not gentamicin or cefotaxime.Conclusions: This study examined the prevalence of P. aeruginosa, and its susceptibility patterns to different antibiotics. The presence of antibiotic-resistant P. aeruginosa isolates could be attributed to b-lactamase production and the use of multiple drug resistance efflux pumps.

Keywords :

Nosocomial infections; Antibiotics; B-lactamases; Efflux pumps

Name: **Prof. Hossam M. Ashour**

Dep.: **Microbiology and Immunology**

Title: **Microbial Spectrum and Antibiotic Susceptibility Profile of Gram-Positive Aerobic Bacteria Isolated from Cancer Patients**

Hossam M. Ashour and Amany El-Sharif

Journal: **Clinical Oncology**

ISSN: 0732-183X **Impact Factor:** 13.598

Abstract:

Purpose: Cancer patients are particularly susceptible to nosocomial infections because of their compromised immune system, and because of the nature of treatment practices they experience. Recently, a shift of the microbial spectrum of cancer patients from Gram-negative to Gram-positive has been demonstrated. This study analyzed the distribution and the antimicrobial resistance of Gram-positive bacteria isolated from cancer patients in Egypt.

Patients and Methods: We examined the microbial spectrum of Gram-positive bacteria in patients with hematologic malignancies and solid tumors. In addition, we also studied the antimicrobial resistance of pathogens accounting for the majority of Gram-positive infections in these cancer patients.

Results: Most of Gram-positive isolates from urinary tract (100%), respiratory tract (89.7%), and bloodstream infections (BSIs; 65.5%) were obtained from leukemic patients. All Gram-positive isolates from skin infections were isolated from solid-tumor patients. In both leukemic and solid-tumor patients, Gram-positive bacteria causing nosocomial BSI were mainly Coagulase-negative staphylococcus (CNS) and S aureus, whereas Gram-positive bacteria causing nosocomial RTI were mainly α-hemolytic streptococci and CNS. Gram-positive bacteria were not isolated from GI tract infections. S aureus, CNS, and _-hemolytic streptococci demonstrated methicillin resistance (81.5%, 92.3%, and 90% resistance, respectively). S aureus and CNS were susceptible to linezolid (15.4% and 0% resistance, respectively), and vancomycin (15.5% and 11% resistance, respectively).

Conclusion: This is the first study to report the emergence of vancomycin- and linezolid-resistant S aureus in Egypt. Newer generation quinolones (moxifloxacin and gatifloxacin) were more active than older quinolones (ciprofloxacin and ofloxacin) against S aureus and CNS, suggesting the use of newer generation quinolones in the prophylaxis of cancer patients.

Name: **Prof. Iman Saad Ahmed**

Dep.: **Pharmaceutics and Industrial Pharmacy**

Title: **Pilot Study of Relative Bioavailability of Two Oral Formulations of Ketoprofen 25 mg in Healthy Subjects. A Fast-Dissolving Lyophilized Tablets as Compared to Immediate Release Tablet**

I.S. Ahmed and F.A. Fatahalla

Journal: **Drug Development and Industrial Pharmacy**

ISSN: 0363-9045 **Impact Factor:** 0.821

Abstract:

The pharmacokinetics of ketoprofen from a fast-dissolving lyophilized tablet (LT), which need not be swallowed, as compared to an immediate release (IR) tablet as reference after single oral dose (25 mg) administration was determined in six healthy subjects aged between 25-40 years using a randomized crossover design. In this study, the rate and extent of absorption of ketoprofen were found to be very different after administration of the LT and the IR tablet. The rate of absorption of ketoprofen from LT was significantly faster than that of IR tablet and had significantly higher C_{max} (by about 50%) and earlier t_{max} (by 15 min), whereas the extent of absorption expressed by AUC was about 68% higher as compared to the IR tablet. The relative bioavailability (*frel)* of the LT compared with the IR tablet was 168%. The difference between the two formulations for half-life and MRT were statistically significant ($p < 0.05$). The tolerance of the two tested formulations was excellent. Ketoprofen LT remained physically and chemically stable for 12 months at 25°C and 60% relative humidity.

Keywords:

Fast-Dissolving tablet; Ketoprofen; Lyophilized tablet; Bioavailability

Name: **Prof. Iman Saad Ahmed**

Dep.: **Pharmaceutics and Industrial Pharmacy**

Title: **In Vitro and in Vivo Evaluation of A Fast-Disintegrating Lyophilized Dry Emulsion Tablet Containing Griseofulvin**

Iman Saad Ahmed and Mona Hassan Aboul-Einien

Journal: **European Pharmaceutical Sciences**

ISSN: 0928-0987 **Impact Factor:** 2.482

Abstract:

Development of a fast-disintegrating lyophilized dry emulsion (LDE) tablet which enhanced the in vitro dissolution and in vivo absorption of griseofulvin (GF) is presented. The LDE tablets were prepared by freeze-drying o/w emulsions of GF, a drug for which bioavailability is known to be enhanced by fat co-administration. Oil-in-water emulsions were prepared using a gelatin solution (2% w/v) as the water phase and medium chain triglycerides (miglyol) or sesame oil as the oil phase. In addition different emulsifiers were evaluated. The influence of formulation parameters on the disintegration and in vitro dissolution of GF from LDE tablets along with other tablet characteristics were investigated. A significant influence of the emulsifier type on the tablet disintegration time was seen. Results obtained from dissolution studies showed that LDE tablets of GF significantly improved the dissolution rate of the drug compared to the plain drug. The bioavailability of GF from a selected LDE tablet formulation as compared to a control capsule containing plain drug powder after single oral dose (125 mg) administration was determined in four healthy subjects using a randomized crossover design. In this study, the rate of absorption of GF from the LDE tablet was significantly faster than that from the control capsule and had significantly higher peak plasma concentration (4 times higher) and shortened time to C_{max} (by 4hr). The extent of absorption expressed by AUC was 80% larger as compared to the control capsule. The stability of LDE tablets was satisfactory.

Keywords:

Griseofulvin; Dry emulsion; Freeze-drying; Lyophilized tablets; In vivo absorption; Bioavailability; Dissolution rate

International Publications Awards
Cairo University

Name: **Prof. Marwan Mohmed Shabana**

Dep.: **Pharmacognosy**

Title: **Investigation of Phenolic Constituents of Carduncellus Eriocephalus Boiss. Var. Albiflora Gauba and their Biological Activities**

Marwan M. Shabana, Moshera M. El-Sherei, Mohamed Y. Moussa, Amani A. Sleem and Hosam M. Abdallah

Journal: **Natural Product Communications**

ISSN: 1934- **Impact Factor:** 578X

Abstract:

The total ethanolic extract (TEE) of Carduncellus eriocephalus Boiss. var. albiflora Gauba showed antioxidant, antihyperglycaemic, and antihyperlipidaemic activities, which were attributed to the n-butanol fraction (BF). Chemical investigation of the BF led to the isolation of a new flavonoid, kaempferol-3-O-β-D-galactopyranoside-6´´-sulfate (16), and a phenyl propenyl glycoside, 1-β-D-glucopyranoside-3-phenyl-2-propenol (rosin) (6), which is reported for the first time in the family Asteraceae. Chrysoeriol (1), 3´-O-methylorobol (2), luteolin (3), quercetin (4), myricetin (5), kaempferol 3-O-α-L- arabinopyranoside (7), kaempferol 3-O-β-D-glucopyranoside (8), quercetin 3-O-β-D-glucopyranoside (12), luteolin 7-O-β-D- rutinoside (13), quercetin 3-O-β-D-rutinoside (14), apigenin 7-O-β-D-rutinoside (15), and 3,5-dicaffeoylquinic acid (17) were isolated for the first time from the genus Carduncellus, in addition to apigenin 7-O-β-D-glucopyranoside (9), chryseriol 7-O-β-D-glucopyranoside (10) and luteolin 7-O-β-D-glucopyranoside (11), which have been previously reported for C. eriocephalus.

Keywords:

Carduncellus eriocephalus boiss; Flavonoids; Phenolic constituents; Antihyperglycaemic; Antihyperlipidaemic

Name: **Prof. Marwan Mohmed Shabana**

Dep.: **Pharmacognosy**

Title: **A Comparative Study of the Flavonoids and some Biological Activities of Two Chenopodium Species"**

F. Ibrahim; S. A. Kawashty, Ayman R. Baiuomy, M. M. Shabana, W. I. EI-Eraky, and S.I. EI-Negoumy

Journal: **Chemistry of Natural Compounds.**
ISSN: 0009-3130 **Impact Factor:** 0.39

Abstract:

A new kaempferol3 -0- (2 -β- D-glucopyrano~yl)-a- L-rhamnopyranoside-7-O-α-L-rhamnopyranoside and eight knownjlavonoid compounds were isolated and identified. A biological study includes determination ofLD50, anti-if!flammatory effect. analgesic effect. ulcerogenic effect, diuretic effect. and toxicity effect.

Keywords:

Chenopodiaceae; Chenopodium; Flavonoids; Biological activity.

Name : **Prof . Mohamed Ali Farag**

Dep. : **Pharmacognosy**

Title : **Metabolic Profiling and Systematic Identification of Flavonoids and Isoflavonoids in Roots and Cell Suspension Cultures of Medicago Truncatula Using HPLC–UV–ESI–MS and GC–MS**

Mohamed A. Farag, David V. Huhman, Zhentian Lei and Lloyd W. Sumner

Journal : **Phytochemistry**

ISSN : 0031-9422 **Impact Factor :** 2.78

Abstract :

An integrated approach utilizing HPLC–UV–ESI–MS and GC–MS was used for the large-scale and systematic identification of polyphenols in Medicago truncatula root and cell culture. Under optimized conditions, we were able to simultaneously quantify and identify35 polyphenols including 26 isoflavones, 3 flavones, 2 flavanones, 2 aurones and a chalcone. All identifications were based upon UV spectra, mass spectral characteristics of protonated molecules, tandem mass spectral data, mass measurements obtained using a quad- rupole time-of-flight mass spectrometer (QtofMS), and confirmed through the co-characterization of authentic compounds. In specific instances where the stereochemistry of sugar conjugates was uncertain, subsequent enzymatic hydrolysis of the conjugate followed by GC–MS was used to assign the sugar stereochemical configuration. Comparative metabolic profiling of Medicago truncatula root and cell cultures was then performed and revealed significant differences in the isoflavonoid composition of these two tissues.

Keywords :

Medicago truncatula; Barrel medic; Leguminosae; Metabolic profiling; Isoflavonoids; High performance liquid chromatography (HPLC); Electrospray ionization (ESI); Gas chromatography (GC); Ion trap mass spectrometry (ITMS); Time-of-flight mass spectrometry (TOFMS)

Name : **Prof . Mohamed Ali Farag**

Dep. : **Pharmacognosy**

Title : **Different Mechanisms for Phytoalexin Induction by Pathogen and Wound Signals in Medicago Truncatula**

Marina Naoumkina, Mohamed A. Farag, Lloyd W. Sumner, Yuhong Tang, Chang-Jun Liu and Richard A. Dixon

Journal : **National Academy of Sciences of the USA**

ISSN : 0027-8424 **Impact Factor :** 9.6

Abstract :

Cell suspensions of the model legume Medicago truncatula accumulated the isoflavonoid phytoalexin medicarpin in response to yeast elicitor or methyl jasmonate (MJ), accompanied by decreased levels of isoflavone glycosides in MJ-treated cells. DNA microarray analysis revealed rapid, massive induction of early (iso) flavonoid pathway gene transcripts in response to yeast elicitor, but not MJ, and differential induction by the two elicitors of sets of genes en- coding transcription factors, ABC transporters, and -glucosidases. In contrast, both elicitors induced genes encoding enzymes for conversion of the isoflavone formononetin to medicarpin. Four MJ-induced-glucosidases were expressed as recombinant en- zymes in yeast, and three were active with isoflavone glucosides. The most highly induced -glucosidase was nuclear localized and preferred flavones to isoflavones. The results indicate that the genetic and biochemical mechanisms underlying accumulation of medicarpin differ depending on the nature of the stimulus and suggest a role for MJ as a signal for rapid hydrolysis of preformed, conjugated intermediates for antimicrobial biosynthesis during wound responses.

Keywords :

Glucosidase; Methyl jasmonate; Phytoanticipin; Cell culture; Elicitation

International Publications Awards
Cairo University

Name : **Prof . Mohamed Ali Farag**

Dep. : **Pharmacognosy**

Title : **Metabolomics Reveals Novel Pathways and Differential Mechanistic and Elicitor-Specific Responses in Phenylpropanoid and Isoflavonoid Biosynthesis in Medicago truncatula Cell Cultures1[C][W][OA]**

Mohamed A. Farag, David V. Huhman, Richard A. Dixon and Lloyd W. Sumner

Journal : **Plant Physiology**

ISSN : 1532-0889 **Impact Factor :** 6.114

Abstract :

High-performance liquid chromatography coupled to ultraviolet photodiode array detection and ion-trap mass spectrometry was used to analyze the intra- and extracellular secondary product metabolome of Medicago truncatula cell suspension cultures responding to yeast elicitor (YE) or methyl jasmonate (MeJA). Data analysis revealed three phases of intracellular response to YE: a transient response in mainly (iso)flavonoid metabolites such as formononetin and biochanin-A that peaked at 12 to 18 h following elicitation and then declined; a sustained response through 48 h for compounds such as medicarpin and daidzin; and a lesser delayed and protracted response starting at 24 h postelicitation, e.g. genistein diglucoside. In contrast, most compounds excreted to the culture medium reached maximum levels at 6 to 12 h postelicitation and returned to basal levels by 24 h. The response to MeJA differed significantly from that to YE. Although both resulted in accumulation of the phytoalexin medicarpin, coordinated increases in isoflavonoid precursors were only observed for YE and not MeJA-treated cells. However, MeJA treatment resulted in a correlated decline in isoflavone glucosides, and did not induce the secretion of metabolites into the culture medium. Three novel methylated isoflavones, 7-hyd roxy-6,4#-dimethoxyisoflavone (afrormosin), 6-hydroxy-7,4#- dimethoxyisoflavone (alfalone), and 5,7-dihydroxy-4#,6-dimethoxy isoflavone (irisolidone), were induced by YE, and labeling studies indicated that the first two were derived from formononetin. Our results highlight the metabolic flexibility within the isoflavonoid pathway, suggest new pathways for complex isoflavonoid metabolism, and indicate differential mechanisms for medicarpin biosynthesis depending on the nature of elicitation.

Name: **Prof. Mohamed Refaat El-Sayed**

Dep.: **Analytical chemistry**

Title: **Application of Derivative, Derivative Ratio, and Multivariate Spectral Analysis and Thin-Layer Chomatography-Densitometry for Determination of a Ternary Mixture**

F. H. Metwaly, Y. S. El-Saharty, M. Refaat and S. Z. El- Khateeb

Journal: **AOAC**

ISSN: 1060-3271 **Impact Factor:** 1.352

Abstract:

New selective, precise and accurate methods are described for the determination of a ternary mixture containing drotaverine hydrochloride (I), caffeine (II) and paracetamol (III). The first method utilizes the use of first (D_1) and third (D_3) derivative spectrophotometry at 331 and 315 nm for the determination of (I) and (III), respectively, without interference from (II). The second method depends on the simultaneous use of the first derivative of the ratio spectra (DD_1) with measurement at 312.4 nm for determination of (I) using the spectrum of 40 µg. ml-1 (III) as a devisor or measurement at 286.4 nm and 304 nm after using the spectrum of 4 µg. ml-1 (I) as a devisor for the determination of (II) and (III), respectively. In the third method, the predictive abilities of the classical least squares (CLS), principle component regression (PCR) and partial least squares (PLS) were examined for the simultaneous determination of the ternary mixture. The last method depends on TLC- densitometry after separation of the mixture on silica gel plates using ethyl acetate/chloroform/methanol (16+3+1, v/v/v) as a mobile phase. The spots were scanned at 281, 272 and 248 nm for the determination of (I), (II) and (III), respectively. Regression analysis showed good correlation in the selected ranges with excellent percentage recoveries. The chemical variables affecting the analytical performance of the methodology were studied and optimized. The methods showed no significant interferences from excipients. Intra and inter assay precision and accuracy values were within regulatory limits. The suggested procedures were checked using laboratory prepared mixtures and were successfully applied for the analysis of their pharmaceutical preparations. The validity of the proposed methods was further assessed by applying a standard addition technique. The results obtained by applying the proposed methods were statistically analyzed and compared with those obtained by the manufacturer method.

Keywords:

Drotaverine hydrochloride; Caffeine; Paracetamol; Ternary mixture; TLC-Densitometric; Derivativespectrophotometry; First derivative of the ratio spectra; Multivariatespectral analysis;

International Publications Awards
Cairo University

Name: **Prof. Mohamed Refaat El-Sayed**

Dep.: **Analytical chemistry**

Title: **Simultaneous Determination of Hyoscine Butylbromide and Ketoprofen in Pharmaceutical Preparations by Spectrophotometric and Liquid Chromatographic Methods**

Y. S. El-Saharty, F. H. Metwaly, M. Refaat and S. Z. El-Khateeb

Journal: **AOAC**

ISSN: 1060-3271 **Impact Factor:** 1.352

Abstract:

A binary mixture of hyoscine butylbromide and ketoprofen was determined by four different methods. The first one concerned with determination of hyoscine butylbromide and ketoprofen using the ratio-spectra 1st derivative (DD_1) spectrophotometric technique at 211 and 234 nm over concentration ranges of 2-14 µg. ml^{-1} and 5-45 µg. ml^{-1} with mean percentage accuracies 99.84 ± 0.92 and 99.98 ± 0.64, respectively. The second method utilizes the second derivative spectrophotometry over concentration ranges of 2-14 µg. ml^{-1} and 5-35 µg. ml^{-1} with mean percentage accuracies 99.32 ± 1.06 and 99.55 ± 1.15, respectively. The third method based on the resolution of the two components by the bivariate calibration depending on the simple mathematic algorithm which provides simplicity and rapidity. The method depends on quantitative evaluation of the absorbencies at 206 and 254 nm over concentration ranges of 2-16 µg. ml^{-1} and 5-35 µg. ml^{-1} with mean percentage accuracies 100.21 ± 1.30 and 100.19 ± 1.07 for hyoscine butylbromide and ketoprofen, respectively. The fourth method was reversed-phase liquid chromatography using 0.05 M ammonium dihydrogen phosphate/ acetonitrile/methanol (20:30:6, by volume) as the mobile phase with UV detection at 220 nm over concentration ranges of 1-90 µg. ml^{-1} and 5-70 µg. ml^{-1} with mean percentage accuracies 99.92 ± 1.02 and 99.61 ± 0.98 respectively. The suggested procedures were checked using laboratory prepared mixtures and were successfully applied for the analysis of their pharmaceutical preparations. The methods retained their accuracy and precision when applying the standard addition technique. The results obtained by applying the proposed methods were statistically analyzed and compared with those obtained by the manufacturer method.

Keywords:

Hyoscine butylbromide; Ketoprofen; Bivariate; Second derivative; First derivative of the ratio spectra; Reversed phase HPLC.

Name: **Prof. Mohamed Refaat El-Sayed**

Dep.: **Analytical chemistry**

Title: **Development of Membrane Electrodes for the Selective Determination of Hyoscine Butylbromide**

Y. S. El-Saharty, F.H. Metwaly, M. Refaat and S. Z. El-Khateeb

Journal: **Talanta**

ISSN: 0039-9140 **Impact Factor:** 2.81

Abstract:

Four poly vinyl chloride (PVC) membrane sensors for the determination of hyoscine butylbromide are described and characterized. The sensors are based on the use of the ion association complexes of hyoscine cation with ammonium reineckate counter anions as ion exchange sites in the PVC matrix. The membranes incorporate ion association complexes of hyoscine with dibutylsebathete (sensor 1), dioctylphthalate (sensor 2), nitrophenyl octyl ether (sensor 3) and β-cyclodextrin (sensor 4). The performance characteristics of these sensors were evaluated according to IUPAC recommendations, which reveal a fast, stable and linear response for hyoscine over the concentration range 10^{-5} - 10^{-2} M for sensors 1 & 2 and 10^{-6} - 10^{-2} for sensors 3 & 4 with cationic slopes of -53.19, -55.17, -51.44 and -51.51 mV per concentration decade for the four sensors, respectively. The direct potentiometric determination of hyoscine butylbromide using the proposed sensors gave average recoveries % of 99.92 ± 1.11, 99.93 ± 1.00, 99.94 ± 1.18 and 99.87 ± 1.39 for the four sensors, respectively. The sensors are used for determination of hyoscine butylbromide in laboratory prepared mixtures, pharmaceutical formulations in combination with ketoprofen and in plasma. Validation of the method shows suitability of the proposed sensors for use in the quality control assessment of hyoscine butylbromide. The developed method was found to be simple, accurate and precise when compared with a reported HPLC method.

Keywords:

Hyoscine butylbromide; Ion selective electrodes; PVC membranes; Ammonium reineckate

International Publications Awards
Cairo University

Name: **Prof. Mohammad Abd-alla El-Sayed**

Dep.: **Analytical Chemistry**

Title: **Stability Indicating Electrochemical Methods for the Determination of Meclophenoxate Hydrocloride and Pyritinol DihyDrochloride using ion Selective Membrane Electrodes**

Mohammad G. El-Bardicy, Hayam M. Lotfy, Mohammad A. El-Sayed and Mohammad F. El-Tarras

Journal: **Yakugaku Zasshi**

ISSN: 0031-6903 **Impact Factor:** 0.225

Abstract:

The construction and electrochemical response characteristics of polyvinyl chloride (PVC) membrane sensors for the determination of meclophenoxate hydrochloride (I) and pyritinol dihydrochloride (II) in presence of their degradation products were described. The sensors are based on the use of the ion association complexes of (I) and (II) cation with sodium tetraphenyl borate and ammonium reineckate counter anions as ion exchange sites in the PVC matrix. In addition ß-cyclodextrin (ß-CD) membranes were used in the determination of I and II. These ion pairs and ß-CD were then incorporated as electro active species with o-Nitrophenyl octyl ether (oNPOE) as a plasticizer. Three PVC sensors were fabricated for each drug, namely meclophenoxate tetraphenyl borate (meclo-TPB), meclophenoxate reineckate (meclo-RNC) and meclophenoxate ß-cyclodextrin (meclo- ß-CD), and the same for pyritinol (pyrit-TPB), (pyrit-RNC) and (pyrit- ß-CD). They show near-Nernestian response for meclophenoxate over the concentration range 10^{-5}- 10^{-2} with slope of 52.73, 51.64 and 54.05 per concentration decade with average recoveries of 99.92 ± 1.077, 99.96 ± 0.502 and 100.03 ± 0.763 for meclo-TPB, meclo-RNC and meclo- ß-CD respectively. Pyritinol also showed near-Nernestian response over the concentration range 3.162 x 10^{-6}- 3.162 x 10^{-4} for pyrit-TPB and pyrit-RNC, and 10^{-6}- 3.162 x 10^{-4} for pyrit- ß-CD with slope of 30.60, 31.10 and 32.89 per concentration decade with average recoveries of 99.99 ± 0.827, 100.00 ± 0.775 and 99.99 ± 0.680 for pyrit-TPB, pyrit-RNC and pyrit- ß-CD respectively. The sensors were used successfully for the determination of I and II in laboratory prepared mixtures with their degradation products, in pharmaceutical dosage forms and in plasma.

Keywords:

Meclophenoxate hydrochloride; Pyritinol dihydrochloride; Ion selective membrane electrodes; PVC Membranes; Sodium tetraphenyl borate; Ammonium reineckate; ß-cyclodextrin

Name : **Dr . Mohammad Abd-Alla El-Sayed**

Dep. : **Analytical Chemistry**

Title : **Kinetic Study on the Degradation of Meclophenoxate Hydrochloride in Alkaline Aqueous Solutions by High Performance Liquid Chromatography**

Mohammad G. El-Bardicy, Hayam M. Lotfy, Mohammad A. El-Sayed and Mohammad F. El-Tarras

Journal : **Yakugaku Zasshi**

ISSN : 0031-6903 **Impact Factor :** 0.225

Abstract :

A high performance liquid chromatographic method was developed and validated for determination of meclophenoxate hydrochloride (I) in the presence of its degradation product (p-chlorophenoxy acetic acid) (II). Separation of (I) from (II) was performed using a ZORBAX ODS column with a mobile phase consisting of 0.2% triethylamine in 0.01M ammonium carbonate: acetonitrile (70: 30 v/v). The method showed high sensitivity with good linearity over the concentration range of 50 to 400 µg/ml. The method was successfully applied to the analysis of a pharmaceutical formulation containing (I) with excellent recovery. A kinetics investigation of the alkaline hydrolysis of (I) was carried out in sodium hydroxide solutions of 1, 1.5 and 2 N by monitoring the parent compound itself. The reaction order of (I) followed pseudo-first order kinetics. The activation energy could be estimated from the Arrhenius plot and it was found to be 12.331 Kcal/ mole.

Keywords :

High performance liquid chromatography; Meclophenoxate hydrochloride; P-Chlorophenoxy acetic acid; Degradation kinetics

Name: **Prof. Mohmed Abou El-Fetooh. Seliem**

Dep.: **Pharmacognosy**

Title: **Ericifolin: An Eugenol 5-0-Galloylglucoside and Other Phenolics from Melaleuca Ericifolia**

S.A.M. Hussein , A.N.M. Hashim , R.T. EI-Sharawy, M.A. Seliem, M. Linscheid, U. Lindequist and M.A.M. Nawwar

Journal: **Phytochemistry**

ISSN: 0031-9422 **Impact Factor:** 2.417

Abstract:

Ericifolin, an eugenol 5-O-β-(6'-O-galloylglucopyranoside) possessing the naturally unknown phenolic moiety, 5-hydroxyeugenol, together with the two new phenolics, 2-O-p-hydroxybenzoyl-6-O-galloyl-(α/β)-$^{4}C_{1}$-glucopyranose and 3-methoxyellagic acid 4-O-rhamnopyranoside have been isolated from the antibacterial leaves extract of Melaleuca ericifolia. In addition, 19 known phenolics were also separated and characterized. All structures were elucidated on the basis of analysis of ^{1}H, ^{13}C NMR, HMQC, HMBC and FTMS spectral data.

Keywords:

Myrtaceae; Antmicrobial; Melaleuca ericifolia; Ericifolin; 2-O-P-Hydroxybenzoyl-6-O-galloyl glucose; 3-MethoxyellagicAcid 4-Rhamnoside

Name : **Prof . Mona Monir Kamel**

Dep. : **Organic Chemistry**

Title : **The Reaction of 2-Aminocyclohexeno [b] Thiophene Derivatives with Ethoxycarbonyl Isothiocyanate: Synthesis of Fused Thiophene Derivatives with Antibacterial and Antifungal Activities**

Wagnat W. Wardakhan, Nadia A. Louca and Mona M. Kamel

Journal : **Acta Chimica Slovenica**

ISSN : 1318-0207 **Impact Factor :** 0.703

Abstract :

The reaction of 2-amino-tetrahydrobenzo[b]thiophene derivatives 1a–d with ethoxycarbonyl isothiocyanate (2) gave the tetrahydrobenzo[b]thiophen-2-thiourea derivatives 3a–d. The latter products underwent ready cyclizations when heated in sodium ethoxide solution to give annulated derivatives 4a–d. Compounds 3a–d also underwent hetero-cyclizations to give fused thiophene derivatives with antibacterial and antifungal activities.

Keywords :

Thiophene; Pyrazole; Pyrimidine; Fused derivatives

Name : **Dr . Mona Moris Hanna**

Dep. : **Pharmaceutical Chemistry**

Title : **Synthesis of Some Tropane Derivatives of Anticipated Activity on the Reuptake of Norepinephrine and/or Serotonin**

Mona M. Hanna, Nahed M. Eid, Riham F. George and Hani M. Safwat

Journal : **Bioorganic & Medicinal Chemistry**

ISSN : 0968-0896 **Impact Factor :** 2.62

Abstract :

A variety of tropane derivatives 14a–g were prepared via the reaction of the alcohol analogs 12a and 12b with substituted fluorobenzenes 13a–f. The prepared compounds were tested for their activity and selectivity toward the norepinephrine transporter (NET) and serotonin transporter (SERT) using yohimbine-induced mortality and 5-hydroxytryptophan-induced neurotoxicity in mice, respectively. All the tested compounds were found to be NE and 5-HT reuptake inhibitors except 14d which exhibited selective 5-HT reuptake inhibition activity.

Keywords :

Tropinone; 3-Phenyltropines; Antidepressant; Serotonin; Norepinephrine

Name: **Prof. Nesrin Khamis Ramadan**

Dep.: **Analytical chemistry**

Title: **Membrane Electrodes for Determination of Some β-Blocker Drugs**

Nesrin K. Ramadan and Hala E. Zaazaa

Journal: **AOAC International**

ISSN: 1060-3271 **Impact Factor:** 1.352

Abstract:

Five poly (vinyl chloride) (PVC) matrix membrane electrodes responsive to the β-blockers atenolol (AT), bisoprolol fumarate (BI), timolol maleate (TI), and levobunolol HCl (LV) were developed and characterized. A precipitation-based technique with ammonium reineckate anion as an electroactive material in PVC matrix with AT, BI, TI, and LV cations was used for fabrication of Electrodes 1–4, respectively. Electrode 5 fabrication was based on precipitation of LV cation with tungstophosphate anion as an electroactive material. Fast and stable Nernstian responses at $1x\ 10^{-2}$ – $1\ x\ 10^{-7}$ M for different β-blockers over the pH range 2–8 were found for these electrodes, which were evaluated according to International Union of Pure and Applied Chemistry recommendations. The method was successively applied for the determination of β-blockers in their pharmaceutical formulations. Validation of the method according to quality assurance standards showed the suitability of the proposed electrodes for the use in the quality control assessment of these drugs. The recoveries for the determination of the β-blockers drugs by the 5 proposed selective electrodes were 100.1 ± 0.7, 99.9 ± 0.8, 100.0 ± 1.1, 100.5 ± 1.1, and 100.6 ± 0.7% for Sensors 1–5, respectively. Statistical comparison between the results obtained by this method and the official method of the drugs was performed and no significant difference was found.

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International Publications Awards
Cairo University

Name : **Prof . Nirmeen Ahmed Sabry**

Dep. :

Title : **Effect of Fascioliasis on the Pharmacokinetic Parameters of Triclabendazole in Human Subjects**

Walid H. El-Tantawy, Heba F. Salem and Nirmeen A. S. Mohammed Safwat

Journal : **Pharm World Sci**

ISSN : 0928-1231 **Impact Factor :** 0.941

Abstract :

ObjectivesTo study the clinical efficacy of Tricla- bendazole (TCBZ) on Egyptian patients infected with Fasciola and understand the effect of Fascioliasis on the pharmacokinetics of TCBZ.

MethodsThe pharmacokinetics of TCBZ adminis- tered as a single oral dose (10 mg/kg) was investigated in both infected and parasite—free Egyptian subjects. After oral administration, TCBZ is metabolized to a sulphone and sulfoxide derivatives. The latter is responsible for the fasciolicidal activity of TCBZ, and it could be used as a marker of drug bioavailability. Blood samples were collected following the oral administration, and TCBZ sulfoxide plasma concen- trations were determined by a sensitive and specific HPLC method.

ResultsPharmacokinetic parameters (Cmax,AUC0–48, t1/2 and tmax) for TCBZ sulfoxide were calculated. In patients; the mean Cmax was 9.11 ± 1.3 lg/ml, the mean AUC (0–48) was 91 ± 10.5 lg h ml–1, the mean t1/2 was 7.4 ± 0.6 h, and the tmax was 3.0 ± 0.4 h. In normal subjects, the mean Cmax was 8.48 ± 0.92 lg/ml, the mean AUC(0–48) was 85 ± 6.55 lg h ml–1, the mean t1/2 was 6.2 ± 0.357 h, and the tmax was 3 ± 0.4 h. No sig- nificant difference could be detected in the patients as compared to normal subjects, which would suggest that Fascioliasis does not affect any of the studied param- eters.No eggs in faeces could be detected following TCBZ treatment. Also, most of the clinical investiga- tions showed significant decline back to the normal ranges post-treatment which indicates complete curing and high TCBZ efficacy.

ConclusionFasioliasisasaninfectivecondition widely spread in Egypt has no significant effect on the pharmacokinetic parameters of the orally administered TCBZ and at the same time it is very effective against the parasite which strongly and safely suggests the use of this medication for the treatment of this infection.

Keywords :

Triclabendazole; Sulfoxide; Clinical; Investigation;Eg Pharmacokinetics; Fascioliasis

Name : Dr . Ramy Karm Aziz

Dep. : Microbiology & Immunology

Title : **Susceptibility to Severe Streptococcal Sepsis: Use of a Large Set of Isogenic Mouse Lines to Study Genetic and Environmental Factors**

RK Aziz, R Kansal, NF Abdeltawab, SL Rowe, Y. Su, D Carrigan, MM Nooh, RR Attia, C Brannen, LA Gardner, L Lu, RW Williams and M Kotb

Journal : Genes and Immunity

ISSN : 1466-4879 **Impact Factor :** 4.53

Abstract :

Variation in responses to pathogens is influenced by exposure history, environment and the host's genetic status. We recently demonstrated that human leukocyte antigen class II allelic differences are a major determinant of the severity of invasive group A streptococcal (GAS) sepsis in humans. While in-depth controlled molecular studies on populations of genetically well- characterized humans are not feasible, it is now possible to exploit genetically diverse panels of recombinant inbred BXD mice to define genetic and environmental risk factors. Our goal in this study was to standardize the model and identify genetic and nongenetic covariates influencing invasive infection outcomes. Despite having common ancestors, the various BXD strains (n strains 33, n individuals 445) showed marked differences in survival. Mice from all strains developed bacteremia but ¼exhibited considerable¼differences in disease severity, bacterial dissemination and mortality rates. Bacteremia and survival showed the expected negative correlation. Among nongenetic factors, age – but not sex or weight – was a significant predictor of survival (P0.0005). To minimize nongenetic variability, we limited further analyses to mice aged 40–120 days and calculated a¼corrected relative survival index that reflects the number of days an animal survived post-infection normalized to all significant covariates. Genetic background (strain) was the most significant factor determining susceptibility (Pp0.0001), thus underscoring the strong effect of host genetic variation in determining susceptibility to severe GAS sepsis. This model offers powerful unbiased forward genetics to map specific quantitative trait loci and networks of pathways modulating the severity of GAS sepsis.

Keywords :

RI mice; BXD; Streptococcus pyogenes; GAS; Animal model; Immunogenetics

International Publications Awards
Cairo University

Name : Dr . Ramy Karm Aziz

Dep. : Microbiology & Immunology

Title : **Genetic Characterization and Virulence Role of the RALP3/LSA Locus Upstream of the Streptolysin S Operon in Invasive M1T1 Group A Streptococcus**

Laura A. Kwinn, Arya Khosravi, Ramy K. Aziz, Anjuli M. Timmer, Kelly S. Doran, Malak Kotb and Victor Nizet

Journal : Bacteriology

ISSN : 0021-9193 **Impact Factor :** 3.99

Abstract :

Group A Streptococcus (GAS) is a leading human pathogen associated with a wide spectrum of mucosal and invasive infections. GAS expresses a large number of virulence determinants whose expression is under the control of several transcriptional regulatory networks. Here we performed the first mutational analysis of a genetic locus immediately upstream of the streptolysin S biosynthetic operon in several GAS genome sequences, including that of the M1T1 serotype, the leading isolates associated with serious invasive disease. The locus consists of a predicted RofA-like stand-alone transcriptional regulator (RALP3) and the largest open reading frame in the GAS genome, encoding a predicted LPXSG motif cell wall-anchored protein we have named LSA (for "large surface-anchored" protein). Comparative reverse transcription-PCR analysis of wild- type M1T1 GAS and an isogenic RALP3-deficient mutant identifies RALP3 as a global transcriptional regulator affecting expression of numerous virulence factor genes, including those for strong repression of the hyaluronic acid capsule and cysteine protease production. RALP3 contributed to GAS epithelial cell invasion and bloodstream survival. LSA was found to be under negative regulation by RALP3 and to influence GAS-epithelial cell interactions and GAS antimicrobial peptide sensitivity. Isogenic M1T1 GAS mutants lacking either RALP3 or LSA were attenuated in a murine model of systemic infection, indicating that this locus plays a role in the virulence potential of the organism.

Keywords :

RALP3; LSA; Group A Streptococcus (GAS); Reverse transcription-PCR analysis; Virulence

International Publications Awards
Cairo University

Name: **Prof. Ramy Karam Aziz**

Dep.: **Microbiology and Immunology**

Title: **Heat Shock Protein 90 Associates with Monarch-1 and Regulates Its Ability to Promote Degradation of NF-Kappa B-Inducing Kinas**

Janelle C. Arthur, John D. Lich, Ramy K. Aziz, Malak Kotb, and Jenny P.-Y. Ting

Journal: **Immunology**

ISSN: 0022-1767 **Impact Factor:** 6.29

Abstract:

Monarch-1/NLRP12 is expressed in myeloid cells and functions as a negative regulator of inflammation by inducing proteasomemediated degradation of NF-κB-inducing kinase. Monarch-1 is a member of the CATERPILLER gene family, also known as the nucleotide-binding domain leucine-rich repeat gene family. This family shares strong structural homology to major immune regulators expressed in lower organisms, including plants. In plants, these disease-resistance proteins (^{R} proteins) sense pathogenic insult and initiate a protective response to limit pathogen growth. To perform this role, many ^{R} proteins require the highly conserved chaperone molecule, heat shock protein (Hsp) 90. Using a two-dimensional gel/mass spectrometry system, we detected the association of the nucleotide-binding domain leucine-rich repeat protein Monarch-1 with heat shock proteins. Further analysis indicates that analogous to plant R proteins, Hsp90 is required for Monarch-1 activity. In human monocytes, Monarch-1 associates with Hsp90, and these complexes are sensitive to treatment with specific Hsp90 inhibitors. Disruption of these complexes results in rapid degradation of Monarch-1 via the proteasome and prevents Monarch-1-induced proteolysis of NF- κB-inducing kinase. This demonstrates that Hsp90 is a critical regulator of Monarch-1 anti-inflammatory activity.

Keywords:

Monarch-1; NF-KB; Caterpiller; Proteomics; Two-dimensional gel; Mass spectrometry

Name : Dr . Ramy Karm Aziz

Dep. : Microbiology & Immunology

Title : DNase Sda1 Provides Selection Pressure for a Switch to Invasive Group a Streptococcal Infection

Mark J Walker, Andrew Hollands, Martina L Sanderson-Smith, Jason N Cole, Joshua K Kirk, Anna Henningham, Jason D McArthur, Katrin Dinkla, Ramy K Aziz, Rita G Kansal, Amelia J Simpson, John T Buchanan, Gursharan S Chhatwal, Malak Kotb and Victor Nizet

Journal : Nature Medicine

ISSN : 1078-8956 **Impact Factor :** 28.59

Abstract :

Most invasive bacterial infections are caused by species that more commonly colonize the human host with minimal symptoms. Although phenotypic or genetic correlates underlying a bacterium's shift to enhanced virulence have been studied, the in vivo selection pressures governing such shifts are poorly understood. The globally disseminated M1T1 clone of group A Streptococcus (GAS) is linked with the rare but life-threatening syndromes of necrotizing fasciitis and toxic shock syndrome1. Mutations in the GAS control of virulence regulatory sensor kinase (covRS) operon are associated with severe invasive disease, abolishing expression of a broad-spectrum cysteine protease (SpeB) and allowing the recruitment and activation of host plasminogen on the bacterial surface. Here we describe how bacteriophage-encoded GAS DNase (Sda1), which facilitates the pathogen's escape from neutrophil extracellular traps serves as a selective force for covRS mutation. The results provide a paradigm whereby natural selection exerted by the innate immune system generates hypervirulent bacterial variants with increased risk of systemic dissemination.

Keywords :

covRS; Neutrophil extracellular traps; NETs; Bacteriophage-encoded toxins; Streptodornase

International Publications Awards
Cairo University

Name : **Prof . Samira Saleh Mostafa**

Dep. : **Pharmacology and Toxicology**

Title : Antipyrine Clearance in Comparison to Conventional Liver Function Tests in Hepatitis C Virus Patients

Madiha Mahmoud, Rania Abdel-Kader, Moataz Hassanein, Samira Saleh and Sanaa Botros

Journal : **European Pharmacology**

ISSN : 0014-2999 **Impact Factor :** 2.47

Abstract :

In this study, 15 healthy volunteers and 96 patients with hepatitis C virus, classified according to Child-Pugh into 36 Child-A, 31 Child-B and 29 Child-C, were examined. All subjects ingested 600 mg antipyrine in the form of hard gelatinous capsules after overnight fasting. One milliliter of saliva was collected at 4 and 24 h after ingestion of antipyrine and analyzed using high-performance liquid chromatography. Blood samples were collected from all subjects for examination, using conventional liver function tests. The pharmacokinetic variables for antipyrine were determined using the two concentration time points selected. A cut-off value of 0.34 ml/min/kg was used to distinguish between cirrhotic and noncirrhotic patients. Alanine aminotransferase, aspartate aminotransferase and gamma-glutamyl transferase values were significantly higher with significantly lower antipyrine clearance in Child-A, B, and C patients than in normal volunteers. The total protein concentration was significantly lower in Child-B and C patients. Moreover, AST was significantly higher in Child-C patients and antipyrine clearance was lower in Child-B and C patients than in Child-A patients. Antipyrine clearance showed a significant negative correlation with Child-Pugh scores, total protein, the international normalization ratio of prothrombin time and globulin, and a positive correlation with albumin and albumin-to-globulin ratio. Unlike most of the conventional liver function tests, antipyrine clearance, which represents the intrinsic clearance capacity of the liver, measured using saliva, proved to be a sensitive marker of liver function. It was significantly impaired in the Child-Pugh group A patients with the least hepatic impairment. The international normalization ratio of prothrombin time was just as informative as antipyrine clearance in identifying minimal hepatic impairment.

Keywords :

Antipyrine clearance; Liver functio tests; Hepatitis C virus (HCV) patients; Child-Pugh classification

Name: **Prof. Sonia Talaat Hassib**

Dep.: **Pharmaceutical chemistry**

Title: **Simultaneous Determination of Chlorzoxazone and Ketoprofen in Binary Mixtures and in Ternary Mixtures Containing the Chlorzoxazone Degradation Product by Reversed-Phase Liquid Chromatography**

Sonia Talaat Hassib,Mohammad Abdul-Azim Mohammad, Asmaa A. EL-Zaher, and Ehab F. EL-kady

Journal: Aoac International

ISSN: 1060-3271 **Impact Factor:** 1.352

Abstract:

New, simple, rapid, and precise reversed-phase high-performance liquid chromatographic (LC) methods were developed for the simultaneous determination of chlorzoxazone (CH) and ketoprofen (KT) in binary mixtures and in ternary mixtures containing the CH degradation product, 2-amino-4-chlorophenol (CD). The analytes were separated by LC on a Lichrosphere® 60 C18 column (250 4 mm, 5µm). The mobile phases, methanol–water (40:60, v/v) at 1 mL/min and methanol–0.05% phosphoric acid (60:40, v/v, pH 2.81) at 1.5 mL/min, satisfactorily resolved the binary and ternary mixtures, respectively. The UV detector was operated at 280 nm for the determination of CH and at 254 nm for the determination of KT and CD. Linearity, accuracy, and precision were found to be acceptable over the concentration ranges of 20–240 and 5–60 µg/mL for CH and KT, respectively, in the binary mixtures and 50–300, 10–60, and 20–160 µg/mL for CH, KT, and CD, respectively, in the ternary mixtures. The optimized methods proved to be specific, robust, and accurate for the quality control of CH and KT in pharmaceutical preparations.

Keywords:

Rplc; Skeletel muscie relaxamts; Degradation; Stability determination; Chlorzoxazone

Name : **Prof . Tarek Kamal Motawi**

Dep. : **Biochemistry**

Title : **Modulation of Indomethacin-Induced Gastric Injury by Spermine and Taurine in Rats**

Tarek K. Motawi, Hanan M. Abd Elgawad and Nancy N. Shahin

Journal : **Biochemical and Molecular Toxicology**

ISSN : 1095-6670 **Impact Factor :** 1.418

Abstract :

This study investigated the involvement of neutrophil infiltration, nitric oxide (NO) generation, and oxidative stress in indomethacin-induced ulcer and the possible gastroprotective potentials of spermine and taurine, known for their tissue regenerating and antioxidant effects, respectively. Male Wistar albino rats (180-220 g) were allocated into a normal control group, ulcer control group (received a single dose of indomethacin 40 mg-kg p.o.), and two ulcer groups pretreated with spermine (150 mg-kg p.o. 1 h before ulcer induction) and taurine (250 mg-kg i.p. for three consecutive days before ulcer induction). The animals were killed 6 h after indomethacin administration, and the gastric juice, serum, and mucosal tissue were used for gastric injury evaluation. Both modulators significantly ameliorated the indomethacin-induced gastric lesions in glandular mucosa. Notably, spermine exhibited the most pronounced effect as manifested by great reduction in the gastric ulcer index, normalization of the elevated gastric acidity, and triggering of mucin production. Spermine and taurine were able to decrease the elevated levels of gastric myeloperoxidase, conjugated diene, and serum NO. However, the lowered tissue NO content was markedly elevated only by taurine. The antioxidant action of taurine was illustrated by restoration of the depressed content of glutathione, normalization of the inhibited activities of glutathione reductase, and superoxide dismutase. These results suggest that spermine and taurine confer significant gastroprotection against indomethacin-induced gastric injury with the priority of spermine.

Keywords :

Indomethaci; Gastric ulcer; Spermine; Taurine; Neutrophil infiltration; No; Oxidative stress

National Cancer Institute

International Publications Awards
Cairo University

Name : Prof . Abdel-Rahman Nabawy Zekri

Dep. : Cancer Biology

Title : Evaluation of Simian Virus-40 as a Biological Prognostic Factor in Egyptian Patients with Malignant Pleural Mesothelioma

Abdel-Rahman N. Zekri, Abeer A. Bahnassy, Waleed S. Mohamed, Nelly Hassan,Abdel-Rahman M. Abdel-Rahman, Fatma Abou El-Kassem and Rabab Gaafar

Journal : Pathology

ISSN : 1320-5463 **Impact Factor :** 1.108

Abstract :

The association between simian virus (SV40) and malignant pleural mesothelioma (MPM) suggests an etiological role for SV40. However, exact pathogenetic mechanisms and pos- sible prognostic value are not clear. The purpose of the present paper was to investigate 40 Egyptian MPM patients for the presence of SV40 DNA, altered Rb expression and p53 gene status using immunohistochemistry and molecu- lar techniques. The relation between SV40, asbestos expo- sure, Rb, p53 and their contribution to the overall survival (OS) were also assessed. SV40 DNA was detected in 20/40 patients and asbestos exposure in 31 patients; 18 of them were SV40 positive. Altered p53 and Rb expression were detected in 57.5% and 52.5%, respectively, with no p53 mutation. Univariate analysis showed a significant correla- tion between OS and stage ($P = 0.03$), performance status ($P = 0.04$), p53 overexpression ($P = 0.05$), asbestos expo- sure ($P = 0.002$) and SV40 ($P = 0.001$). Multivariate analysis showed that when SV40 and asbestos exposure were con- sidered together, only combined positivity of both was an independent prognostic factor affecting the OS ($P = 0.001$). SV40 and asbestos exposure are common in Egyptian MPM, denoting a possible etiological role and a synergistic effect for both agents. Combined positivity for SV40 and asbestos exposure is an independent prognostic factor in MPM, having a detrimental effect on OS.

Keywords :

Asbestos; Malignant Pleural Mesotheliom; P53; Rb; Sv40

International Publications Awards
Cairo University

Name: Prof. Abdel-Rahman Nabawy Zekri

Dept.: Tumor Biology

Title : Androgen Profiles Among Egyptian Adults Considering Liver Status

Cristina E Aguilar, Amr S Soliman, Daniel S McConnell, Abdel-Rahman Zekri, Mousumi Banerjee, Ayman Omar, Mohamed Sharawy, Sherif Omar, Ahmed Raouf and MaryFran R Sowers

Journal: Gastroenterology and Hepatology

ISSN: 0815-9319 **Impact Factor:** 1.785

Abstract:

Background and Aim: Hepatitis C virus (HCV) and environmental hepatotoxins may have an indirect influence on health by altering the synthesis and function of hormones, particularly reproductive hormones. We aimed to evaluate liver diseases and sex steroid hormones in Egypt, which has the highest prevalence of HCV worldwide.
Methods: We measured markers of hepatitis B virus (HBV), HCV and schistosomiasis infection as well as liver function in 159 apparently healthy subjects. We measured total testosterone (T), sex-hormone binding globulin (SHBG) and albumin, and calculated the free androgen index.
Results: Anti-HCV antibodies were detected in 51 % of men and 42% of women. Based on HCV reverse transcription PCR (RT-PCR) of 44 men and 33 women, 11 % of men and 21 % of women showed HCV viremia. There was schistosomiasis in 25% of men and 9% of women, and mixed HCV viremia and schistosomiasis in 57% of men and 52% of women. Compared with men with schistosomiasis only (mean 593.3 ± 73.4 ng/dl.), T was higher in men with mixed HCV viremia and schistosomiasis (mean 854.5 ± 47.9 ng/dL; $P = 0.006$) and men with mixed chronic HCV and schistosomiasis (mean 812.1 ± 43.3 ng/dL; $P = 0.001$). Men with mixed chronic HCV and schistosomiasis had also significantly higher SHBG (mean 57.7 ± 3.9 ng/dL) than males with schistosomiasis only (mean 34.8 ± SE 4.5 ng/dL; $P = 0.0003$).
Conclusion: Future investigations should consider that a high prevalence of asymptomatic liver disease may alter associations between hormone concentrations and chronic disease etiology.

Keywords:

Androgen; Egypt; Hepatitis; Hormones; Lliver.

International Publications Awards
Cairo University

Name : **Prof . Abdel-Rahman Nabawy Zekri**

Dep. : **Cancer Biology**

Title : Hepatitis B Virus (HBV) Genotypes in Egyptian Pediatric Cancer Patients with Acute and Chronic Active HBV Infection

Abdel-Rahman N Zekri, Mohamed M Hafez, Nahed I Mohamed, Zeinab K Hassan, Manal H El-Sayed, Mohsen M Khaled and Tarek Mansour

Journal : **Virology**

ISSN : 1743-422X **Impact Factor :** 1.94

Abstract :

Background: There are eight genotypes of hepatitis B virus (A-H) and subgenotypes are recognized. Genotyping can be accomplished based on a partial sequence of HBV genome such as the pre-S or S gene. Several methods have been developed and used for HBV genotyping. This study was undertaken to determine the HBV genotypes in Egyptian pediatric cancer patients with acute and chronic liver disease.

Methods: HBV genotypes were determined in 22 patients who had acute forms of liver disease (AH) and in 48 patients with chronic active hepatitis (CAH). A type-specific primer based the nested-PCR method was employed in the HBV genotyping.

Results: This study showed that HBV infections in pediatric cancer patients are attributed predominantly to viral genotypes D and B that constituted 37.1% and 25.7%, respectively of the total infections. In addition, there was a relatively high prevalence of mixed infections of 15.7% among the studied group especially mixed A/D genotype infections. Genotype D was found significantly more often in patients with CAH than in patients with AH [23/48 (47.9%) v 3/22 (13.6%)].

Conclusion: These findings show the distribution of HBV A-D genotypes in pediatric cancer Egyptian patients. Furthermore,our results indicate a markedly high prevalence of mixed A/D genotype infections in subjects with CAH and a possible association of mixed infections with the severity of liver diseases.

International Publications Awards
Cairo University

Name : Dr . Abeer Ahmed Bahnassy

Dep. : Clinical Pathology

Title : **Detection of Simian Virus 40 DNA Sequences in Egyptian Patients with Different Hematological Malignancies**

Abdel-Rahman Zekri, Waleed Mohamed, Abeer A. Bahnassy, Lobna Refit, Mohsen Khaled, Sameh Shalaby and Mohamed Hafez

Journal : Leukemia & Lymphoma

ISSN : 1024-8194 **Impact Factor :** 1.559

Abstract :

SV40 DNA sequences have been detected in non-Hodgkin's lymphoma patients A link between SV40 and NHL is biologically plausible since SV40 causes hematological malignancies in laboratory rodents. We investigated 266 Egyptian cases of hematological malignancies (158 NHL, 54 HD, 26 ALL, 13 AML, 8 CLL, 7 CML) and 34 subjects as a control for detection of SV40 DNA using nested PCR. SV40 DNA sequences were found in (53.8%) of NHL, (29.6%) of HD and in (40.7%) of different types of leukemia cases. Frequency of SV40 DNA sequences was higher in NHL patients compared with those with the other tumors and control group ($p < 0.05$). The highest frequency was in Burkitt's lymphoma followed by diffuse large B-cell lymphoma. The present study suggests that SV40 is significantly associated with non-Hodgkin's lymphoma and most probably acts as a cofactor in the pathogenesis of these tumors. This could lead to new diagnostic, therapeutic, and preventive approaches.

Keywords :

SV40 DNA; Hematological malignancies; Egypt

International Publications Awards
Cairo University

Name : Dr . Abeer Ahmed Bahnassy

Dep. : Clinical Pathology

Title : Genetic Distance and Heterogenecity Between Quasispecies is A Critical Predictor to IFN Response in Egyptian Patients with HCV Genotype-4

Abdel-Rahman Zekri, Waleed Mohamed, Abeer A. Bahnassy, Lobna Refat, Mohsen Khaled, Sameh Shalaby and Mohamed Hafez

Journal : Virology

ISSN : 1743-422X **Impact Factor :** 1.94

Abstract :

Background: HCV is one of the major health problems in Egypt, where it is highly prevalent. Genotype4 is the most common genotype of HCV and its response to treatment is still a controversy. Methods: HCV genotype 4 quasispecies diversity within the 5' untranslated region (5'UTR) was studied in a series of 22 native Egyptian patients with chronic hepatitis C virus with no previous treatment who satisfied all NIH criteria for combined treatment of pegylated IFN and ribavirine and was correlated with the outcome of treatment. The study also included 7 control patients with no antiviral treatment. HCV sequencing was done using the TRUGENE HCV 5-NC genotyping kit. Results: At the 48th week of treatment, 15 patients (68%) showed virological response. Whereas HCV- RNA was still detected in 7 patients (32%) in this period; of those, 6 experienced a partial virological response followed by viral breakthrough during treatment. Only one patient did not show any virological or chemical response. The four females included in this study were all responders. There was a significant correlation between the response rate and lower fibrosis ($p = 0.026$) as well as the total number of mutation spots (including all the insertions, deletions, transitions and transversions) ($p = 0.007$, $p = 0.035$). Conclusion: Patients who responded to interferon treatment had statistically significant less number in both transitions ($p = 0.007$) and the genetic distances between the quasispecies ($p = 0.035$). So, viral genetic complexity and variability may play a role in the response to IFN treatment. The consensus alignment of all three groups revealed no characteristic pattern among the three groups. However, the G to A transitions at 160 was observed among non responders who need further study to confirm thisobservation.

International Publications Awards
Cairo University

Name : Dr . Abeer Ahmed Bahnassy

Dep. : Clinical Pathology

Title : The Possible Role of Cell Cycle Regulators in Multistep Process of HPV-Associated Cervical Carcinoma

Abeer A. Bahnassy, Abdel Rahman N Zekri, Maha Saleh, Mohammad Lotayef, Manar Moneir and Osama Shawki

Journal : BMC Clinical Pathology

ISSN : 0021-9746 **Impact Factor :** 2.245

Abstract :

Background: Human papillomavirus (HPV) 16 and 18 are associated with cervical carcinogenesis through an interaction between HPV oncogenic proteins and cell cycle regulatory genes. However, the exact pathogenetic mechanisms are not determined yet.

Methods: We investigated 43 invasive squamous cell carcinoma (ISCC), 38 CIN III, 11 CINII and18 CINI for cyclin D1, cyclin E, CDK4, p53, mdm-2, p21waf, p27, p16INK4A, Rb and Ki-67 aberrations using immunohistochemistry and molecular techniques. Twenty samples of normal cervical tissues(NCT) were taken as a control.

Results: There was a significant increase in the expression of Ki-67, cyclin E, CDK4, p16INK4A, Rb (p=0.003, 0.001, 0.001, 0.01) and a significant decrease in p27KIP1 from NCT to ISCC (p = 0.003). Increased cyclin D1, p21waf, p53, mdm-2 expression, homozygous deletion (HZD) and promoter methylation (PM) of the Rb were detected in CINIII and ISCC only. On univariate analysis; tumor size, differentiation, lymph node status, FIGO stage, Ki- 67, cyclin D1, p53 and p27KIP1 are significantly associated with reduced overall survival (OS) while on multivariate analysis; only FIGO stage, Ki-67, cyclin D1, p53 and p27KIP1 were significant.

Conclusion: 1) Aberrations involving p27KIP1, cyclin E, CDK4, p16INK4A are considered early events in HPV 16 and 18-associated cervical carcinoma, whereas cyclin D1 and p53 pathway abnormalities are considered late events. 2) Immunohistochemical tests for p16INK4Aand cyclin E, could help in early diagnosis of cervical carcinoma. 3) Only FIGO stage p53, cyclin D1, p27KIP1 and Ki-67 are independent prognostic factors that might help in predicting outcome of cervical cancer patients.

International Publications Awards
Cairo University

Name: Prof. Hadir Ahmed EL-Mahallawy

Dept.: Clinical Pathology

Title : The Diagnostic Value of C-reactive Protein, Interleukin-8, and Monocyte Chemotactic Protein in Risk Stratification of Febrile Neutropenic Children with Hematologic Malignancies

Nabil M. Ahmed, Hadir El-Mahallawy, Ibrahim A. Ahmed, Shimaa Nassif, Aamal El-Beshlawy and Alaa El-Haddad Nabil Ahmed

Journal: Pediatr Hematol Oncol

ISSN: 0888-0078 **Impact Factor:** 0.529

Abstract:

Background and Aim: Recent advances in febrile neutropenia have highlighted the value of risk stratification especially that it can have important implications in terms of management. We aimed to identify a serum marker that may help to stratify febrile neutropenic pediatric patients treated for hematologic malignancies at the time of first evaluation. Thus, C-reactive protein (CRP), interleukin-8 (IL-8), and monocyte chemotactic protein-1-α (MCP-1-α) were evaluated for their predictive and diagnostic relevance in febrile episodes of cancer patients.

Patients and Methods: Within 24 hours of fever, CRP, IL-8, and MCP-1 serum levels were measured and the levels of these markers were related to the clinical findings of the patients. For this purpose, we collected and analyzed clinical data of 85 fever episodes occurring in 76 patients with hematologic malignan- cies, presenting to the Department of Pediatric Oncology, National Cancer Institute, Cairo University, during a 6-month period.

Results: Neutropenic children with febrile episodes were classified into 2 groups, a group with unexplainable fever (group I, n = 26) and another group with either blood culture positive, and/or fever periods with a documented clinical sepsis and/or local infection (group II, n = 59). Clinically, local sites of infection were encountered in 39 cases (45.9%), whereas a positive blood culture was detected in 20 cases. CRP, IL-8, and MCP-1 levels were significantly lower in group I versus group II (P value <0.001). There were overlaps of values between groups. CRP ≥ 90 mg/L was significantly associated with chemotherapy-related neutropenia and fever owing to bacter- emia (P = 0.038). The sensitivity, specificity, negative and positive predictive values of CRP, MCP-1, and IL-8 were (70%, 73%, 51%, and 85%), (64%, 92%, 53%, and 95%), and (71%, 77%, 54%, and 88%), respectively. Combining 2 or 3 markers improved the diagnostic performance of these test, as78% of group II had elevated 2 or 3 markers versus 16% of the group with no evident infection.

Conclusions: Low levels of CRP, MCP-1, and IL-8 could identify patients with unexplainable fever; whereas, high levels of these markers were of help in the diagnosis of infectious episodes. A model combining more than 1 marker is recommended in the

assessment of febrile neutropenia.

Keywords:

Febrile neutropenia; Hematological malignancies; C-reactive protein (CRP); Interleukin 8 (IL-8); Monocyte chemotactic protein 1 alpha (MCP-1)

International Publications Awards
Cairo University

Name : **Prof . Hadir Ahmed EL-Mahallawy**

Dep. : **Clinical Pathology**

Title : **Early Hospital Discharge Versus Continued Hospitalization in Febrile Pediatric Cancer Patients with Prolonged Neutropenia: A Randomized, Prospective Study**

Nabil M. Ahmed, Hadir A. El-Mahallawy, Ibrahim A. Ahmed, Shimaa Nassif, Aamal El-Beshlawy and Alaa El-Haddad Nabil Ahmed

Journal : **Pediatric Blood Cancer**

ISSN : 1545-5009 **Impact Factor :** 1.882

Abstract :

Purpose: Hospitalization with single or multi-agent antibiotic therapy has been the standard of care for treatment of high-risk febrile neutropenia. We hypothesize that an empiric antibiotic regimen that is effective and that can be administered once daily will allow for improved hospital utilization by early transition to outpatient care.

Patients and Methods: Patients were randomized between a regimen of once daily ceftriaxone plus amikacin (C+A) and imipenem monotherapy (control). Afebrile patients on C+A satisfying "Early Discharge Criteria" at 72 hours continued treatment as outpatients. We compared the outcome, adverse events, duration of hospitalization and cost between both groups. Intention-to-treat analysis was used.

Results: A prospective randomized controlled clinical trial of 119 pediatric cancer patients with high-risk fever and neutropenia was conducted. We found a statistically significant difference between the duration of hospitalization of the C+A group [median 5 days] and control [median 9 days] ($p<0.001$), per episode antibiotic cost ($p< 0.001$) and total episode cost ($p< 0.001$). Similar results were obtained using estimated costs in a corresponding North American institution. There was no statistically significant difference in the response to treatment at 72 hours, or after necessary antimicrobial modifications.

Conclusion: We conclude that pediatric febrile-neutropenic patients initially at considered at "high risk" for sepsis can be reevaluated at 72 hours for outpatient therapy. The convenience, low incidence of adverse effects and cost benefit of the once daily regimen of ceftriaxone plus amikacin will be particularly useful to reduce the overall treatment costs, and duration of hospitalization.

Keywords :

Delayed categorization; Discharge; Fever; Hospitalization; Neutropenia; Pediatric.

Name : **Prof . Hussein Mostafa Khaled**

Dep. : **Oncology**

Title : Lifestyle, Occupational, and Reproductive Factors in Relation to Pancreatic Cancer Risk

An-Chi Lo , Amr S. Soliman, , Nabih El-Ghawalby ,Mohamed Abdel-Wahab ,Omar Fathy, Hussein M. Khaled ,Sherif Omar, Stanley R. Hamilton, Joel K. Greenson and James L. Abbruzzese

Journal : **Pancreas**

ISSN : 0885-3177 **Impact Factor :** 2.121

Abstract :

Objectives: This study examined the epidemiology of pancreatic cancer in Egypt.
Methods: We obtained detailed information on smoking, occupa- tional, medical, and reproductive histories from 194 pancreatic cancer cases and 194 controls.
Results: Compared with not smoking, smoking cigarettes alone or in conjunction with other smoking methods (eg, water pipe, cigar) was associated with an increased risk (odds ratio [OR], 4.5 and 7.8; 95% confidence interval [95% CI], 1.9Y10.7 and 3.0Y20.6, respectively). Passive smoking was also a significant risk factor (OR, 6.0; 95% CI,2.4Y14.8). The risk of pancreatic cancer was elevated among subjects exposed to pesticides (OR, 2.6; 95% CI, 0.97Y7.2). A prior diagnosis of diabetes mellitus for a period of 10 years was associated with higher risk (OR, 5.4; 95% CI, 1.5Y19.9). For women, having 7 or more live births and lactating for 144 months or longer were associated with a reduced risk (OR, 0.5 and 0.2; 95% CI, 0.2Y1.3 and 0.1Y0.9, respectively). No association was found between family history, allergy, or obesity and pancreatic cancer in Egypt.
Conclusions: Multiple tobacco consumption methods, passive smoking, pesticide exposures, and diabetes are associated with an increased risk for pancreatic cancer. Prolonged lactation and increased parity are associated with a reduced risk for pancreatic cancer.

Keywords :

Pancreatic Cancer; Lifestyle; Occupation; ReproductiveFactors; Risk Factors

International Publications Awards
Cairo University

Name : **Prof . Hussein Mostafa Khaled**

Dep. : **Oncology**

Title : **Molecular epidemiologic features of inflammatory breast cancer: A Comparison Between Egyptian and US Patients**

An-Chi Lo, Celina G. Kleer, Mousumi Banerjee,Sherif Omar, Hussein M. Khaled ,Saad Eissa, Ahmed Hablas, Julie A. Douglas , Sharon H. Alford ,Sofia D. Merajver and Amr S. Soliman

Journal : **Breast Cancer Research Treatment**

ISSN : 0167-6806 **Impact Factor :** 4.671

Abstract :

Background: Inflammatory breast cancer (IBC) is a lethal form of breast cancer with unknown etiology. A higher frequency of IBC and a more aggressive IBC phenotype was reported in Egypt than in the United States. This difference in disease frequency and presentation might be related to molecular epidemiologic factors.

Methods: We used tumor blocks and demographic, epide- miologic, and clinical data of 48 IBC patients from Egypt and 12 patients from the United States. We counted tumor emboli in tumors before and after immunohistochemical staining with lymphatic vessel endothelial receptor-1 (LYVE-1), and measured the expression of RhoC GTPase protein in the two groups.

Results: Erythema, edema, and peau d'orange were found in 77% of the Egyptian patients as compared with 29% found in the US patients (P = 0.02). The number of tumor emboli was significantly higher in tumors from Egypt (mean ± SD, 14.1 ± 14.0) than in the tumors from the United States (5.0 ± 4.0, P = 0.01). The number of tumor emboli in LYVE-1 positive vessels was higher in tumors from Egypt (3.5 ± 2.8) than tumors from the United States (1.6 ± 0.5, P = 0.15). We detected a high level of RhoC in 87% of the tumors from Egypt and 14% of the tumors from the United States (P = 0.0003).

Conclusion: Patients from Egypt have a more aggressive form of IBC than those in the United States. Our analysis of IBC patients shows that distinct molecular phenotypes can be found when these two study populations are compared. Future studies should explore the epidemiologic and environmental exposures and the genetic factors that might lead to the different clinical and molecular features of IBC in patients from these two countries.

Keywords :

Inflammatory Breast Cancer; Tumor Emboli; RhoC; LYVE-1; Molecular Epidemiology; International

International Publications Awards
Cairo University

Name : **Prof . Hussein Mostafa Khaled**

Dep. : **Oncology**

Title : **Differences in K-ras and p53 Gene Mutations Among Pancreatic Adenocarcinomas Associated with Regional Environmental pollution**

Amr S.Soliman , An-Chi Lo, Mousumi Banerjee, Nabih El-Ghawalby, Hussein M.Khaled, Sherif Bayoumi, Ibrahim A.Seifeldin, Atef Abdel-Aziz, James L.Abbruzzese, Joel K.Greenson and Stanley R.Hamilton

Journal : **Carcinogenesis**

ISSN : 0143-3334 **Impact Factor :** 5.366

Abstract :

Background: Variations in genetic mutations in pancreatic carci- noma between different geographical regions have not been stud- ied extensively, especially in developing countries where pancreatic cancer is relatively rare. Methods: We studied the mo- lecular pathology of 54 pancreatic adenocarcinomas from Egyp- tian patients residing in a heavily polluted region of the eastern Nile River delta and compared the findings with 45 tumors from patients residing in low-pollution regions. Results: Rates of K-ras mutation in codon 12 and of p53 mutation in exons 5–8 were higher in tumors of patients from the high-pollution region as compared with the low-pollution regions (61.5 versus 34.2%, re- spectively, for K-ras, P = 0.01; 25.9 versus 11.6%, respectively, for p53, P = 0.08). There were also distinct differences in the specific types of K-ras and p53 mutations between the two regions. The ratio of G-to-T k-ras transversion mutation (codon 12) rela- tive to wild-type was significantly higher in tumors from the high- pollution region (0.90) than tumors from the non-pollution site (0.28 P = 0.03). Relative to tumors with wild-type, the ratio of p53 mutations in exons 5, 7 or 8 to wild-type in tumors from the high-pollution region was significantly higher than the ratio from the non-pollution site (0.28 versus 0.03, P = 0.01). Logistic re- gression showed that G-to-T transversion mutation in K-ras was predicted by the region of residence of the patients. Conclusions: Our study reveals that there are differences in the frequencies and types of K-ras and p53 mutations found in pancreatic adenocarci- nomas of patients in high-pollution and low-pollution regions in Egypt and suggests that environmental factors may explain these differences. We speculate that gene–environment interactions in pancreatic carcinogenesis also occur in other populations.

Keywords :

International Publications Awards
Cairo University

Name: Prof. Inas Ahmed El-Attar

Dept.: Epidemiology & Biostatistics

Title: [^{18}fdg] Pet-Ct-Based Intensity-Modulated Radiotherapy Treatment Planning of Head and Neck Cancer

Mazen El-Bassiouni, I. Frank Ciernik, J. Bernard Davis, Inas El-Attar, Beatrice Reiner, Cyrill Burger, Gerhard W. Goerresand and Gabriela M. Studer

Journal: Radiation Oncology Biol. Phys

ISSN: 0360-3016 **Impact Factor:** 4.556

Abstract:

Purpose: To define the best threshold for tumor volume delineation of the (18) fluoro-2-deoxy-glucose positron emission tomography (^{18} FDG-PET) signal for radiotherapy treatment planning of intensity-modulated radiotherapy (IMRT) in head and neck cancer.
Methods and Materials: In 25 patients with head-and-neck cancer, CT-based gross tumor volume (^{GTV}CT) was delineated. After PET-CT image fusion, window level (L) was adapted to best fit the ^{GTV}CT, and ^{GTV}PET was delineated. Tumor maximum (S) and background uptake (B) were measured, and the threshold of the background-subtracted tumor maximum uptake (THR) was used for PET signal segmentation. Gross tumor volumes were expanded to planning target volumes (PTV_s) and analyzed.
Results: The mean value of S was 40 kBq/mL, *SIB* ratio was 16, and THR was 26%. The THR correlated with S (r = -0.752), but no correlation between THR and the SIB ratio was seen (r = -0.382). In 77% of cases, S was >30 kBq/mL, and in 23% it was ≤30 kBq/mL, with a mean THR of 21.4% and 41.6%, respectively ($p < 0.001$). Using PTV_{PET} in radiotherapy treatment planning resulted in a reduced PTV in 72% of cases, while covering 88.2% of GTV_{CT}, comparable to the percentage of GTV_{PET} covered by PTV $_{CT}$ (P = 0.15).
Conclusions: A case-specific PET signal threshold is optimal in PET-based radiotherapy treatment planning. Signal gating using a THR of 20% in tumors with S >30% ± 1.6% kBq/mL and 40% in tumors with S ≤ 30% ± 1.6% kBq/mL is suitable.

Keywords:

[^{18}FDG] PET-CT fusion; PET segmentation; Head-and-neck cancer; Intensity modulation; Treatment planning.

International Publications Awards
Cairo University

Name : **Prof . Mohamed Mahmoud Hafez**

Dep. : **Cancer Biology**

Title : **Prevalence of Transfusion Transmitted Virus (TTV) Genotypes Among HCC Patients in Qaluobia Governorate.**

Mohamed M Hafez ,Sabry M Shaara y, Amr AHassan, Rabab F Salim , Fatma M Abd El S and Amal E Ali

Journal : **Virology**

ISSN : 1743-422X **Impact Factor :** 1.94

Abstract :

Background: Transfusion Transmitted virus (TTV) is a novel single-stranded DNA virus that was identified in patients with post-transfusion hepatitis of non-A-G type. Clinical significance of TTV infection was analyzed in Egyptian hepatocellular carcinoma (HCC) patients. The present study attempted to clarify these issues in Egypt, particularly in Qaluobia governorate, a country known for its high endemicity of liver disease and hepatotropic viruses.

Methods: TTV are determined in the serum of 60 samples obtained from HCC and liver cirrhosis (LC) patients and 30 healthy individuals. TTV DNA is amplified by nested-PCR with TTV-specific mixed primers derived from the conserved open reading frame 1 (ORF1) region followed by digestion with restriction enzyme. Using the enzymes HaeIII, DraI, EcoRI and PstI, we are able to distinguish between the four TTV genotypes.

Results: The positive rate of TTV detection was 46.7%, 40% and 36.7% among HCC, LC patients and healthy individuals respectively. The more prevalence genotype was detected in the positive serum samples was genotype 1 (35.7%) in HCC patients, (50%) in LC and (63.3%) in healthy individuals, Genotype 5 (21.4%), (25.5%) and (18.2%) in HCC, LC and healthy individuals respectively.

Discussion: This study indicates that TTV is commonly present in adult patients with HCC and LC as well as healthy individuals. The most prevalence TTV genotype is genotype 1. It seems that the infection neither contribute to the severity of liver disease no to the causation of HCC.

International Publications Awards
Cairo University

Name : **Prof . Rabab Mohamed Gaafar**

Dep. : **Oncology**

Title : **Symptoms and Patient-Reported Well-Being: Do They Predict Survival in Malignant Pleural Mesothelioma? A Prognostic Factor Analysis of EORTC-NCIC 08983: Randomized Phase III Study of Cisplatin With or Without Raltitrexed in Patients with Malignant Pleural Mesothelioma**

Andrew Bottomley, Corneel Coens, Fabio Efficace, Rabab Gaafar, Christian Manegold, Sjaak Burgers, Mark Vincent, Catherine Legrand and Jan P. van Meerbeeck

Journal : **Clinical Oncology**

ISSN : 0732-183X **Impact Factor :** 13.60

Abstract :

Purpose: Malignant pleural mesothelioma (MPM) is a rare disease. Unlike other advanced cancer types, little is known about patient-reported symptoms or health-related quality of life (HRQOL) and their possible prognostic value. This study reports an evaluation of the prognostic value of these factors using data gathered from a recent randomized controlled trial.

Patients and Methods:Patients were entered onto this trial if they had a histologically proven unresectable MPM, not pretreated with chemotherapy, WHO performance status≤2, and adequate hematologic, renal, and hepatic function. Patients were randomly assigned to receive cisplatin 80 mg/m2 intravenously on day 1, without or with preceding infusion of raltitrexed 3 mg/m2. HRQOL was assessed using the European Organisation for Research and Treatment of Cancer (EORTC) QLQ-C30/Lung Cancer
13 tool. The Cox proportional hazards regression model was used for the univariate and multivariate analyses of survival, along with a bootstrap validation technique. Included were the EORTC prognostic index (PI) composed of stage of disease, histology type, time since diagnosis, and WBC, and, in addition, 10 selected key symptoms and HRQOL scales.

Results:Two hundred fifty patients were randomly assigned (80% male; median age, 58 years; WHO performance status 0, 1, 2 in 25%, 62%, and 13% of cases, respectively). Two hundred twenty-nine patients (91.6%) had a valid HRQOL assessment. The final multivariate model retained the PI, pain (P=.0001), and appetite loss (P<.0100) as independent prognostic indicators of survival.

Conclusion:Results suggest that the PI, pain, and appetite loss may be independent prognostic factors in patients with advanced MPM.

Name : **Prof . Sohair Abdel Latif Eissa**

Dep. : **Clinical Pathology**

Title : **Genetic Diversity in Hepatitis C Virus in Egypt and Possible Association With Hepatocellular Carcinoma**

Gamal Esmat and Sohair A. Eissa

Journal : **General Virology**

ISSN : 0008-2626 **Impact Factor :**

Abstract :

Egypt has one of the world's highest prevalences of hepatitis C virus (HCV) infection, with a majority of genotype 4 infections. To explore the genetic diversity of HCV in Egypt, sera from 131 Egyptians [56 from community studies, 37 chronic hepatitis patients, 28 hepatocellular carcinoma (HCC) patients and 10 patients with non Hodgkin's lymphoma] were genotyped by restriction fragment-length polymorphism and phylogenetic analyses of sequences from the mid-core and non-structural 5B regions. The different genotyping methods showed good agreement. The majority of the viruses (83 of 131; 63 %) were of subtype 4a, but five other subtypes within genotype 4 were also observed, as well as three genotype 1b, five genotype 1g and one genotype 3a samples. Interestingly, subtype 4o, which was easily identifiable in all three genomic regions, showed an association with HCC (P=0.017), which merits further investigation.

Name : **Prof . Sohair Abdel Latif Eissa**

Dep. : **Clinical Pathology**

Title : **Candidate Markers for the Detection of Hepatocellular Carcinoma in Low-Molecular Weight Fraction of Serum**

Iman Gouda and Sohair A. Eissa

Journal : **Carcinogenesis**

ISSN : 0143-3334 **Impact Factor :** 5.366

Abstract :

Hepatocellular carcinoma (HCC) represents an important public health problem in Egypt where up to 90% of HCC cases are attributable to hepatitis C viral (HCV) infection. Serum alpha-fetoprotein is elevated in only -60% of HCC patients. The development of effective markers for the detection of HCC could have an impact on cancer mortality and significant public health implications worldwide. The objective of our study was to assess six candidate markers for detection of HCC identified by mass spectrometric analysis of enriched serum. The study examined 78 HCC cases and 72 age- and gender-matched cancer-free controls recruited from the Egyptian population. Matrix assisted laser desorption-ionization time-of-flight mass spectrometric analysis of enriched low molecular weight fraction of serum was used for identification of the candidate markers. Our analyses show that all six candidate markers are associated with HCC after adjustment for important covariates including HCV and hepatitis B viral infections. The marker candidates are independently predictive ofHCC with areas under the receiver operating characteristic (AuROC) curve ranging from 63-93%. A combination of the six markers improves prediction accuracy to 100% sensitivity, 91 % specificity and 98% AuROC curve in an independent test set of 50 patients. Two of the candidate markers were identified by sequencing as fragments of complement C3 and C4. In conclusion, a set of six peptides distinguished with high prediction accuracy HCC from controls in an Egyptian population with a high rate of chronic HCV infection. Further evaluation of these marker candidates for the diagnosis of HCC is needed.

Faculty of Engineering

International Publications Awards
Cairo University

Name : **Prof . Abdel-Alla Sayed Ahmed Mohamed**

Dep. : **Biomedical Engineering and Systems**

Title : **Association between Dialysis Dose Improvement and Nutritional Status Among Hemodialysis Patients**

Ahmad T. Azar, Khaled Wahba, Abdalla S.A. Mohamed and Waleed A. Massoud

Journal : **American Nophrology**
American Journal of Nephrology

ISSN : 0250-8095 **Impact Factor :** 2.879

Abstract :

Several studies suggest an association be- tween improved survival and better nutritional status. It has been suggested that there is a correlation between dose of dialysis and nutritional status. However, in spite of the cur- rent practice, there are conflicting reports regarding the re- lationship between dose of dialysis or malnutrition, and bio- chemical outcome. In this article, we will discuss the impact of dose of dialysis on nutritional status and biochemical out- come in hemodialysis patients. We will also mention the in- terrelationships of dialysis dose, malnutrition, and biochem- ical outcome with respect to these patients. Methods: Data were processed on 134 dialysis patients (mean age 48.21 8 13.38, 69 male, 65 female) on 3-times-per-week dialysis reg- imens. The overall study period was 3 months from June 1,2005 to August 31, 2005. The patients were divided into two groups: the baseline group and the intervention group. The data of the baseline group were collected in June, 2005 and the data of the intervention group were collected in August, 2005 after applying the intervention or a protocol for dialysis adequacy improvement. Results: The statistical analysis demonstrated that there was a significant improvement in mean URR and Kt/V from the baseline to the intervention group. The intervention group had a considerably higher rate than the baseline group for all nutritional and biochem- ical outcome parameters. The study showed a strong posi- tive correlation between nPCR and Kt/V ($p = 0.0001$) and also a strong positive correlation between serum albumin and Kt/V ($p = 0.00001$). No correlations were found between Kt/V and biochemical outcomes such as hemoglobin ($p = 0.4922$), calcium ($p = 0.650$), phosphate ($p = 0.508$), and phosphatase ($p = 0.091$). Conclusion: All the available evidence in hemo- dialysis patients confirms the close association between di- alysis dose and biochemical outcome. A body of evidence also highlights the existence of relationship between malnu- trition and outcome among these patients. Dose of dialysis and nutrition are considered to be interrelated.

Keywords :

Hemodialysis; Dialysis adequacy Kt/V; Nutrition.

Name : **Prof . Abdel-Kareem Shaban Hassan**

Dep. : **Engineering Mathematics and Physics**

Title : **An Exterior Point Algorithm for some Linear Complementarity Problems with Applications**

A. S. O. Hassan, H. L. Abdel-Malek and I. M. Sharaf

Journal : **Engineering Optimization**

ISSN : 0305-215X **Impact Factor :** 0.557

Abstract :

An exterior point algorithm for positive definite (PD) and positive semidefinite (PSD) linear complementarity problems (LCPs) is introduced. The algorithm exploits the ellipsoid method to find a starting point in the case of positive definite linear complementarity problems (PDLCPs) and to check for the problem feasibility in case of positive semidefinite linear complementarity problems (PSDLCPs). The algorithm starts from a point on the boundary on which the complementarity condition is satisfied and generates a sequence of points on that same boundary. These points converge to the solution. The algorithm is modified to speed up the convergence for some PDLCPs and PSDLCPs that arise in certain mechanical models. A numerical example and a practical example in robotics are solved to test the algorithm.

Keywords :

Linear complementarity problem; Convex quadratic programming; Linear programming; Exterior point algorithms.

International Publications Awards
Cairo University

Name : **Prof . Abdel-Raouf Awad Helaly**

Dep. : **Engineering Mathematics and Physics**

Title : **Propagation of Electromagnetic Waves in Planar Bounded Plasma Region**

E. A. Soliman, A. Helaly and A. A. Megahed

Journal : **Progress in Electromagnetics Research, PIER**

ISSN : 1559-8985 **Impact Factor :**

Abstract :

This paper aims at developing a technique to calculate the reflection,absorption,and transmission of electromagnetic waves by a bounded plasma region.The model chosen for this study is a magnetized,steady-state,two-dimensional, nonuniform plasma slab,which is presented by a number of parallel flat layers.It is assumed that the electron density is constant in each layer such that the overall electron density profile across the slab follows any prescribed distribution function. The proposed technique is referred to as Scattering Matrix Model (SMM). The fields in each layer are written in the form of summation of the appropriate eigen functions weighted by unknown scattering coefficients.These coefficients are determined via the application of the appropriate boundary conditions at eac interface. The effect of varying the wave frequency and the plasma parameters on the reflected,transmitted,and absorbed powers are presented and discussed.

Name : **Prof . Abdel-Rhman Abdel-Fattah Ragab**

Dep. : **Mechanical Design and Production**

Title : **Modeling of the Effect of Cavitation on Tensile Failure of Superplastic Alloys**

A.R. Ragab

Journal : **Materials Science and Engineering**

ISSN : 0921-5093 **Impact Factor :** 1.49

Abstract :

A model for creep deformation due to combined diffusion and plastic flow is applied to tensile failure of superplastic alloys by cavitation. The model requires input of strain-rate sensitivity, initial void radius and its volume fraction. Failure due to void coalescence is detected by micro-necking of the intervoid matrix material. The void shape change due to plastic flow is incorporated in the model. It is found that the effect of grain-boundary sliding as described by the local stress system in vicinity of the cavitating facet has a major influence on predictions of cavity growth rate and hence the resulting fracture strains. The model is applied to predict fracture strains of various superplastic materials, e.g. Al–Li, Cu–Zn and Ti–Al alloys. Comparison of these predictions with experiments is in fair agreement. Discrepancies may be due to neglecting the occurrence of diffuse necking in reporting ductility at fracture. The lack of quantified micro-mechanical parameters and hence the inevitable resort to assuming their values represent another shortcoming in applying the model.

Keywords :

Superplasticity; Ductility; Fracture; Cavitation; Micromechanical modeling.

Name : **Prof . Abdel-Wahed Foad El-Dib**

Dep. : **Mechanical Power**

Title : **Thermal Design and Analysis for Battery Module for a Remote Sensing Satellite**

A. Megahed and A. El-Dib

Journal : **Spacecraft and Rockets**

ISSN : 0022-4650 **Impact Factor :** 0.55

Abstract :

Onboard satellite batteries are used for short duration power requirements, such as from the time the satellite is launched until solar panels are deployed and operational. In addition, a battery is needed to supply all the power during periods of eclipse. Proper thermal design and management of a satellite battery is essential for its long life and better performance. The goal of the present work is to estimate thermal behavior of the Ni–Cd battery for a remote- sensing satellite. After the definition of on-orbit battery temperature requirements, charge and discharge cycles are presented for assessment of heat generated by the Ni–Cd battery. A thermal model that simulates the battery module onboard the satellite during its nominal orbit is developed using I-DEAS TMG thermal analysis software. Transient temperature predictions have been obtained on the battery module for the two expected design orbit environments. Analysis results are used to help in the design of a passive thermal control system to maintain acceptable temperature ranges for the battery. Parametric studies are performed in an attempt to determine the optimum passive thermal control hardware. Comparing these results with thermal requirements and constraints of the battery module, the final thermal design is obtained.

International Publications Awards
Cairo University

Name : **Prof . Abdel-Zaher Abou-Zeid**

Dep. : **Mining, Petroleum and Metallurgical**

Title : **Role of Feed Moisture in High-Pressure Roll Mill Comminution**

D.W. Fuerstenau and A.-Z.M. Abouzeid

Journal : **Mineral Processing**

ISSN : 0301-7516 **Impact Factor :** 0.884

Abstract :

The application of high-pressure roll mills (HPRM) for industrial comminution has been growing, particularly because of its energy efficiency. Many aspects of HPRM comminution have not been fully characterized because the performance of the machine is affected by numerous parameters that still need to be investigated and optimized. The present paper is concerned with the effect of feed moisture on HPRM performance. The comminution of minus 8-mesh dolomite feed at several different moisture levels was conducted with a laboratory HPRM to delineate the effect of feed moisture on product characteristics, specific energy consumption, and such mill operating parameters as applied load, roll gap and roll speed. The results showed definite effects of moisture on these parameters and the product size distribution, most likely because of lubrication of the particles in the compacting bed as they pass through the roll gap.

Keywords :

High-pressure roll mill; Moisture in roll mill comminution; Specific comminution energy; Comminution efficiency; Size distribution

International Publications Awards
Cairo University

Name: **Prof. Adel Abdel-Kader Mohsen**

Dept.: **Engineering Mathematics and Physics**

Title : **A Sinc-Collocation Method for the Linear Fredholm Integro-Differential Equations**

Adel Mohsen and Mohamed El-Gamel

Journal: **Zeitschrift fur Angewandte Mathematik und Physik**

ISSN: 0044-2275 **Impact Factor:** 0.652

Abstract:

A Sinc–Collocation method for solving linear integro-differential equations of the Fredholm type is discussed. The integro-differential equations are reduced to a system of algebraic equations and Q-R metho√d´is used to establish numerical procedures. The convergence rate othe method is $O(e^{-k\sqrt{N}})$ Numerical results are included to confirm the efficiency and accuracy of the method even in the presence of singularities and a comparison with the rationalized Haar wavelet method is made.

Keywords:

Sinc function; Collocation method; Fredholm type; Integro-differential equations.

International Publications Awards
Cairo University

Name : **Prof . Adel Ahmed Mahmoud**

Dep. : **Engineering Mathematics and Physics**

Title : **Application of the Generalized Differential Quadrature Method to the Free Vibrations of Delaminated Beam Plates**

A.A. Mahmoud, Ramadan A. Esmaeel and M. M. Nassar

Journal : **Engineering Mechanics**

ISSN : 1802-1484 **Impact Factor :**

Abstract :

Differential Quadrature Method (DQM) is a powerful tool in the treatment of the structural and dynamical systems. In this paper the free vibration analysis of a beam plate having single across the width delamination has been done successfully using the GDQM for the first time. The problem was formulated using a one dimensional model. The results agreed well with the previous work done by analytical and finite element methods. Accurate results was obtained without the use of the δ technique and with no restrictions of the sub-domain size. Various examples were introduced to represent the accuracy of the solution and high accuracy results have been obtained.

Keywords :

Delaminated beam plates; Vibration; Generalized differential quadrature method.

International Publications Awards
Cairo University

Name : **Prof . Adel Diaa El-Din Shaltout**

Dep. : **Electric Power and Machines**

Title : **Analysis and Design of Photovoltaic Powered Air Conditioner Using Slip – frequency Control Scheme**

Naser Abel-Rahim and Adel Shaltout

Journal : **Electric Power Compoments & System**

ISSN : 1532-5008 **Impact Factor :** 0.079

Abstract :

This article proposes a new scheme to drive an air conditioner powered by photovoltaic (PV) arrays. The main objective of the paper is to reduce the cost of the system, which is a major concern in PV applications. This is achieved by reducing both the initial and running costs of the PV system. The initial cost is cut down by reducing the required size of the PV array through (i) limiting the motor current during both startup and dynamic phases of operation, and (ii) extracting maximum power from the PV array under various metrological conditions by operating the PV array on the maximum power line. Reduction in the running cost of the PV system is achieved by controlling the motor speed such that its slip is kept at a small value at various operating conditions, ensuring highly efficient operation of the system. The paper outlines a procedure for sizing the photovoltaic array. Also, the paper presents a control strategy that achieves acceptable levels of the motor current with good dynamic response. Simulation results of the system behavior during transient and dynamic phases confirm the capability of the proposed scheme.

Keywords :

PhotovolLaic systems; Photovoltaic powered air conditioners; Ariable frequency drives; Slip-frequency control scheme.

International Publications Awards
Cairo University

Name : **Prof . Adel Mohamed El-Nadi**

Dep. : **Electronics and Communication Engineering**

Title : **Experimental Observation of Chaotic Properties in a System of two Coupled Wien-Bridge Oscillators**

A.G. Abdellah and A.M. El-Nadi

Journal : **Chaos Solitons & Fractals**

ISSN : 0960-0779 **Impact Factor :** 2.042

Abstract :

In this paper, we investigate the dynamical behavior of a system of two mutually coupled Wien-Bridge oscillators. Through the control of coupling strength and frequency difference between the two oscillators, a wide range of complex behavior is experimentally observed and verified using circuit simulation software. Experimental and simulation results are presented.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Emam Hassan**

Dep. : **Irrigation and Hydraulics**

Title : **Subsurface Contaminant Transport in the Presence of Colloids: Effect of Nonlinear and Nonequilibrium Interactions**

Hesham M. Bekhit and Ahmed E. Hassan

Journal : **Water Resources Research**

ISSN : 0043-1397 **Impact Factor :** 1.894

Abstract :

The effect of kinetic nonlinear sorption of contaminants in the presence of colloids is the focus of this study. Different sorption isotherms are considered where contaminant sorption and colloid deposition are assumed to be linear or nonlinear (Freundlich), and contaminant attachment to mobile and immobile colloids is assumed to follow either linear or Langmuir isotherms. Varying combinations accounting for different possibilities are used to investigate effects of different isotherms on contaminant transport. Two- dimensional numerical simulations in homogenous media show that the effect of colloids on nonlinearly sorbing contaminant is altered from facilitation to retardation depending on the Freundlich exponent and concentration value. One finding from the study indicates that incorporating the colloid effect on contaminant transport does not necessarily represent a conservative assumption. The study shows that ignoring the fact that colloids have limited sites and describing contaminant attachment to colloids by linear isotherms may lead to inaccurate results. In addition, it is found that assuming colloids are linearly deposited on the solid matrix is a conservative assumption in the applications that focus on peak concentration arrival. However, when small contaminant concentrations are of concern (i.e., early arrival is the quantity of interest), assuming nonlinear colloidal deposition becomes the critical scenario.

International Publications Awards
Cairo University

Name : Dr . Ahmed Gomaa Radwan

Dep. : Engineering Mathematics and Physics

Title : 1-D Digitally-Controlled Multiscroll Chaos Generator

A. Radwan, A. M. Soliman and A. S. Elwakil

Journal : Bifurcation and Chaos

ISSN : 0218-1274 **Impact Factor :** 0.87

Abstract :

The generation of multi-scroll chaotic attractors has been a topic of both theoretical and practical interest. The first multi-scroll oscillators [Suykens & Vandewalle, 1993; Suykens & Vandewalle, 1993] were derived from the original Chua's circuit by introducing a nonlinear resistor with multiple breakpoints. The number of possible scrolls is directly proportional to the number of breakpoints. In [Elwakil & Kennedy, 2001], a canonical model, which generated a double-scroll-like attractor using a comparator nonlinearity, was introduced. This model was later modified by inserting one, two or three periodic multi-step comparator nonlinearities to generate one-dimensional (1-D), (2-D) or (3-D) scroll-grid attractors [Yalcin et al., 2002]. Different forms of this nonlinearity were used in different chaotic oscillators to obtain 1-D [Ozoguz et al.,2002; Li & Yang, 2003; Lü et al., 2004a] and higher-D multi-scrolls [Lü et al., 2004b]. Unfortunately, non of the earlier multi-scroll generators offers precise digital control. In this work, a 1-D digitally-controlled multi-scroll generator is proposed. Through an bit digital counter, the number of generated scrolls can be precisely controlled. MOS-based digitally-controlled multi-scroll chaos generator is also presented. The maximum number of generated scrolls is if an bit counter is used. The confinement of the scrolls in space can also be digitally-controlled using lower and upper location bit numbers The proposed technique can be easily generalized to produce 2-D and 3-D scroll grids which incorporate more than one nonlinear function

Keywords :

Chaos; Multiscroll chaos; Canonical models.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mahmoud Soliman**

Dep. : **Electronics and Communication Engineering**

Title : **Novel Cmos Realizations of the Inverting Second-Generation Current Conveyor and Applications**

Ehab Ahmed Sobhy and Ahmed M. Soliman

Journal : **Analog Integr Circ Sig Process**

ISSN : 0925-1030 **Impact Factor :** 0.30

Abstract :

This paper presents two new CMOS realiza- tions for the inverting current conveyor (ICCII). The proposed realizations offer enhanced features compared to previously reported ICCII. Also new oscillator circuits based on using the ICCII as an active element are pre- sented. The presented oscillator circuits have the advantage that both the oscillation frequency and the oscillation condition can be adjusted independently. Also another application to the ICCII, which is a floating inductor, is proposed. A second order low pass filter using the proposed floating inductor is simulated and compared with the ideal result. The proposed ICCII and the presented applications are tested with SPICE simulations using CMOS 0.35 lm technology to verify the theoretical results.

Keywords :

Inverting current conveyor; Floating current source; Oscillator; Floati inductor.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mahmoud Soliman**

Dep. : **Electronics and Communication Engineering**

Title : **Low Voltage CMOS Fully Differential Current Feedback Amplifier with Controllable 3-dB Bandwidth**

Ahmed H. Madian, Soliman A. Mahmoud and Ahmed M. Soliman

Journal : **Analog Integrated Circuits and Signal Processing**

ISSN : 0925-1030 **Impact Factor :** 0.30

Abstract :

This paper presents a CMOS fully differential current feedback operational amplifier with controllable 3-dB bandwidth. The FDCFOA has the advantage of a wide range controllable 3-dB bandwidth (~57–500 MHz) without changing the feedback resistance. The FDCFOA has a standby current of 320 μA. Application of the pro- posed FDCFOA in realizing second order low-pass filter with controllable 3-dB bandwidth is given. Pspice simu- lations of the FDCFOA block and its application are given using 0.25 um CMOS technology from MOSIS and dual supply voltages ±0.75 V.

Keywords :

Current feedback operational amplifier (CFOA); Fully differential; Low-voltage operational amplifier; Controllable 3-dB bandwidth.

Name: **Prof. Ahmed Mahmoud Soliman**

Dept.: **Electronics and Communication Engineering**

Title: **Generation of Grounded Capacitor ICCII Based Bandpass Filters**

Ahmed M. Soliman

Journal: **Circuits Systems and Computers**

ISSN: 0218-1266 **Impact Factor:** 0.12

Abstract:

A new current-mode band-pass filter using the inverting second-generation current conveyor (lCCII) is introduced. The circuit is generated from a frequency-dependent negative resistance (FDNR)-C circuit realized using ICCII +. It is observed that a voltage mode band-pass filter using two CCII + has similar transfer function to this current-mode filter. The adjoint network theorem is used to demonstrate the transformation between the two circuits. Two new voltage-mode grounded capacitor band-pass filters using two *(CCII* are also introduced. The first voltage-mode circuit is generated from the FDNR-C circuit and employs two opposite Z polarity ICCII The second voltage.-mode circuit is obtained from the first circuit by relocation or the input and a grounded terminal. Two new additional grounded capacitor and grounded resistor current-mode band-pass filters with independent control on the filter *Q* are also introduced. Spice simulation results with 0.35/μm CMOS transistors model are included to demonstrate the practicality of the two ICCII- band-pass current-mode filter.

Keywords:

Current conveyors; inverted current conveyors; band-pass filters.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mahmoud Soliman**

Dep. : **Electronics and Communication Engineering**

Title : **Letter to the Editor Voltage Mode and Current Mode tow Thomas Bi-Quadratic Filters Using Inverting CCII**

Ahmed M. Soliman

Journal : **Circuit Theory and Applications**

ISSN : 0098-9886 **Impact Factor :** 0.69

Abstract :

Voltage mode Tow Thomas bi-quadratic filter using the inverting second-generation current conveyor (ICCII) is given. The filter has high input impedance, employs two grounded capacitors, and has indepen- dent control on Q, independent control on the band-pass and low-pass response gain. Three alternative current mode filters are generated from the voltage mode circuit. The three circuits have zero input impedance, employ grounded capacitors and have independent control on Q. Two of the circuits have also all resistors grounded and the other uses only ICCII− and has only one floating resistor.

Keywords :

Voltage mode; Current mode; Inverting second-generation current conveyor; Filters.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mahmoud Soliman**

Dep. : **Electronics and Communication Engineering**

Title : **Low-Voltage CMOS Current Feedback Operational Amplifier and its Application**

Soliman A. Mahmoud, Ahmed H. Madian and Ahmed M. Soliman

Journal : **ETRI**

ISSN : 1225-6463 **Impact Factor :** 1.16

Abstract :

A novel low-voltage CMOS current feedback operational amplifier (CFOA) is presented. This realization nearly allows rail-to-rail input/output operations. Also, it provides high driving current capabilities. The CFOA operates at supply voltages of ±0.75 V with a total standby current of 304 μA. The circuit exhibits a bandwidth better than 120 MHz and a current drive capability of ±1 mA. An application of the CFOA to realize a new all-pass filter is given. PSpice simulation results using 0.25 μm CMOS technology parameters for the proposed CFOA and its application are given.

Keywords :

Current feedback op-amp; Low-voltage; Variable gain amplifier; All-pass filter.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mahmoud Soliman**

Dep. : **Electronics and Communication Engineering**

Title : **Analytical Synthesis of Low-Sensitivity High-Order Voltage-Mode DDCC and FDCCII-Grounded R and C All-Pass Filter Structures**

Chun-Ming Chang, Ahmed M. Soliman and M. N. S. Swamy

Journal : **Ieee Transactions on Circuits and Systems**

ISSN : 1057-7122 **Impact Factor :** 1.14

Abstract :

The difficulty of realizing the operations of addition and subtraction of a voltage-mode signal renders two special active elements, namely, differential difference current conveyors (DDCCs) and fully differential current conveyors (FDCCIIs), both of which have the ability to perform the operations of addition and subtraction, to become very important for voltage-mode analog filter design. Note that, for the design of operational transconductance amplifier and capacitor (OTA-C) filters, the recently reported analytical synthesis methods (ASMs) have been shown to be very effective for achieving simultaneously the three criteria, namely, all capacitors being grounded, the use of the min-imum number of active and passive components, and the use of single-ended input OTAs. However, none of the ASMs uses DDCCs and FDCCIIs in the design of voltage-mode filters. In this paper, a method of realizing DDCC and FDCCII-based all-pass filter structures with either equal capacitances or equal conductances through a new ASM is presented. Only n current conveyors (the least number of active components) n grounded capacitors, and grounded resistors (the minimum number of passive components) are used for realizing an n th-order voltage-mode all-pass filter structure. Moreover, the new all-pass filter structure synthesized by the new ASM achieves very low individual as well as near-null group sensitivities just as in the case of the passive LC ladder filters, has very low power consumption, a low component spread for equal denominator conductance design, and a high input impedance which is attractive from the point of view of cascad-ability. Finally, H-Spice simulations, using 0.35-μ um process and 1.65± V supply voltages, are included and validate theoretical predictions.

Keywords :

Active filters; All-pass filters; Analog circuit design; Analytical synthesis; Continuous-time filters; Current conveyors.

Name : **Prof . Ahmed Mohamed Bayoumy**

Dep. : **Electronics and Communication Engineering**

Title : **Optimal Conditions for Micromachining**

Sherif Sedky, Ahmed Bayoumy, Ahmed Alaa, Ahmed Nagy and Ann Witvrouw

Journal : **Microelectromechanical Systems**

ISSN : 1057-7157 **Impact Factor :** 2.659

Abstract :

This paper investigates the possibility of reducing the deposition temperature of silicon–germanium (Si1−x Gex) thin films to 210 ◦ C and tuning the physical properties of the film locally to achieve optimal mechanical and electrical properties that are suitable for a wide range of microelectromechanical systems that can be postprocessed on top of standard prefabri- cated electronics or onto more exotic substrates, such as polymer films. First, the effect of the Ge content, layer thickness, and deposition pressure on the mechanical properties of as-deposited Si1−x Gex films, which are deposited at 210 ◦ C, is analyzed in detail, and the optimal deposition conditions are experimentally determined. Then, the possibility of using pulsed excimer laser annealing to control the electrical and mechanical properties of such films is demonstrated. It is shown that the low deposition temperature imposes many constraints on the laser-annealing conditions, particularly for optimizing the mechanical properties. Moreover, the Ge content and the film thickness have a signif- icant influence on the optimal laser-annealing conditions. It is illustrated that eliminating stress gradient implies very shallow crystallization, which is accompanied by relatively high electrical resistivity. Using the optimal laser-annealing conditions, the stress gradient can be as low as 1×10^{-6} μm^{-1} for a 0.3-μm-thick film. The optimal electrical resistivity, on the other hand, de- pends on the Ge content. For 70% Ge, the minimum resistivity is 80 mΩ • cm; decreasing the Ge content to 30% results in a resis- tivity of 3 Ω • cm.

Keywords :

Laser annealing; Silicon compounds; Stress control.

Name : **Prof . Aly El-Shafei Ahmed**

Dep. : **Mechanical Design and Production**

Title : **Some Experiments on Oil Whirl and Oil Whip**

A. El-Shafei, S. H. Tawfick, M. S. Raafat and G.M. Az

Journal : **Engineering for Gas Turbines and Power**

ISSN : 0742-4795 **Impact Factor :** 0.304

Abstract :

The oil whirl and oil whip phenomena are well known since the early twentieth century. However, there is a lot of confusion on the parameters that affect the onset of instability. In this study, we investigate the onset of instability on a flexible rotor mounted on two plain cylindrical journal bearings. The rotor is run through the first critical speed, the instability, and the second critical speed. Tests are conducted at various unbalance levels, pressures, and misalignment conditions on the coupling. It is shown that, by far, the misalignment of the coupling is the parameter that is most effective on the onset of instability. In particular angular misalignment resulted in the smoothest rotor response.

International Publications Awards
Cairo University

Name : **Prof . Amir Foad Atiya**

Dep. : **Computer Engineering**

Title : **Self-Generating Prototypes for Pattern Classification**

Hatem A. Fayed, Sherif R. Hashem and Amir F. Atiya

Journal : **Pattern Recognition**

ISSN : 0031-3203 **Impact Factor :** 1.822

Abstract :

Prototype classifiers are a type of pattern classifiers, whereby a number of prototypes are designed for each class so as they act as representatives of the patterns of the class. Prototype classifiers are considered among the simplest and best performers in classification problems. However, they need careful positioning of prototypes to capture the distribution of each class region and/or to define the class boundaries. Standard methods, such as learning vector quantization (LVQ), are sensitive to the initial choice of the number and the locations of the prototypes and the learning rate. In this article, a new prototype classification method is proposed, namely self-generating prototypes (SGP). The main advantage of this method is that both the number of prototypes and their locations are learned from the training set without much human intervention. The proposed method is compared with other prototype classifiers such as LVQ, self-generating neural tree (SGNT) and K-nearest neighbor (K-NN) as well as Gaussian mixture model (GMM) classifiers. In our experiments, SGP achieved the best performance in many measures of performance, such as training speed, and test or classification speed. Concerning number of prototypes, and test classification accuracy, it was considerably better than the other methods, but about equal on average to the GMM classifiers. We also implemented the SGP method on the well-known STATLOG benchmark, and it beat all other 21 methods (prototype methods and non-prototype methods) in classification accuracy.

Keywords :

Prototype classifiers; Nearest neighbor; Learning vector quantization; Self-Generating neural trees; Gaussian mixture models.

Name : **Prof . Amir Foad Atiya**

Dep. : **Computer Engineering**

Title : **Packet Loss Rate Prediction Using the Sparse Basis Prediction Model**

Amir F. Atiya, Sung Goo Yoo, Kil To Chong and Hyongsuk Kim

Journal : **Ieee Transactions on Neural Networks**

ISSN : 1045-9227 **Impact Factor :** 2.62

Abstract :

The quality of multimedia communicated through the Internet is highly sensitive to packet loss. In this letter, we develop a time-series prediction model for the end-to-end packet loss rate (PLR). The estimate of the PLR is needed in several transmission control mechanisms such as the TCP-friendly congestion control mechanism for UDP traffic. In addition, it is needed to estimate the amount of redundancy for the forward error correction (FEC) mechanism. An accurate prediction would therefore be very valuable. We used a relatively novel prediction model called sparse basis prediction model. It is an adaptive nonlinear prediction approach, whereby a very large dictionary of possible inputs are extracted from the time series (for example, through moving averages, some nonlinear transformations, etc.). Only few of the very best inputs among the dictionary are selected and are combined linearly. An algorithm adaptively updates the input selection (as well as updates the weights) each time a new time sample arrives in a computationally efficient way. Sim- ulation experiments indicate significantly better prediction performance for the sparse basis approach, as compared to other traditional nonlinear approaches.

International Publications Awards
Cairo University

Name : Dr . Basman Mohamed El-Hadidi

Dep. : Aerospace Engineering

Title : Particle Levitation Due to a Uniformly Descending Flat Object

H. Ezzat Khalifa and Basman El-Hadidi

Journal : Aerosol Science and Technology

ISSN : 0278-6826 **Impact Factor :** 2.905

Abstract :

This article presents analytical and computational fluiddynamics (CFD) solutions of the unsteady flow resulting from a horizontal circular disk moving downward at a constant velocity toward a horizontal floor seeded with spherical micro-particles, and the effect of this flow on particle detachment and levitation. The selected configuration is a simplification of numerous practical applications in which particle resuspension is important, for exam- ple a foot or an object impacting a dusty floor, or a squeeze film thrust bearing with particle contamination. The resulting radial and axial velocity field, coupled with a particle detachment model and the particle equations of motion were employed to compute particle trajectories in the gap. The CFD solutions were utilized to describe the high-speed radial wall jet and the vortices developing outside the disk and to explain their role in particle levitation and entrainment. It is shown that as the gap narrows the resulting ra- dial velocity close to the disk perimeter is high enough to detach and levitate μm-size particles, and that the vortices shed by the descending disk and its high-velocity radial wall jet create an up- ward convective motion that contributes to particle resuspension from the floor and entrainment in any far-field flow that might be present around the descending disk.

Keywords :

Micro-particles; Levitation; Particle contamination; Velocity field; Trajectories in the gap; Entrainment; Um-size particles.

Name : Dr . Doaa Khalil Ibrahim

Dep. : Electric Power and Machines

Title : Traveling-Wave-Based Fault-Location Scheme for Multiend-Aged Underground Cable System

Mahmoud Gilany, Doaa Khalil Ibrahim and El Sayed Tag El Din

Journal : IEEE Transactions on Power Delivery

ISSN : 0885-8977 **Impact Factor :** 0.496

Abstract :

This paper presents a novel wavelet-based fault-location scheme for aged cable systems when synchronized digital fault recorded data are available at the two terminals of each cable. The proposed scheme estimates the fault location in multiend-aged cable systems using the theory of wavelet singularity detection as a powerful signal processing tool. The arrival of the first and second voltage traveling waves at both ends of the power cables can be identified reliably. The developed wavelet processing scheme is applied on the modal coordinates instead of the phase coordinates. The proposed scheme has the ability to eliminate the impact of the change in the propagation velocity of the traveling waves on the fault-location calculations. This will help solve the problem of cable changing parameters, especially the change of the relative permittivity of the cable with age. The method is valid even with faults that are very close to busbars. Characteristics of the proposed fault-location scheme are analyzed by extensive simulation studies using Alternative Transients Program/Electromagnetic Transients Program. The results indicate an accepted degree of accuracy for the suggested fault locator.

International Publications Awards
Cairo University

Name : **Prof . Edward Adib Sadek**

Dep. : **Aerospace Engineering**

Title : **Stochastic Finite Element Analysis of the Free Vibration of Functionally Graded Material Plates**

Afeefa Shaker, Wael Abdelrahman, Mohammad Tawfik and Edward Sadek

Journal : **Comput Mech**

ISSN : 0178-7675 **Impact Factor :** 1.087

Abstract :

The superior properties of functionally graded materials (FGM) are usually accompanied by randomness in their properties due to difficulties in tailoring the gradients during manufacturing processes. Using the stochastic finite element method (SFEM) proved to be a powerful tool in studying the sensitivity of the static response of FGM plates to uncertainties in their material properties. This tool is yet to be used in studying free vibration of FGM plates. The aim of this work is to use both a First Order Reliability Method (FORM) and the Second Order Reliability Method (SORM), combined with a nine-noded isoparametric Lagrangian ele- ment based on the third order shear deformation theory to investigate sensitivity of the fundamental frequency of FGM plates to material uncertainties. These include the effect of uncertainties on both the metal and ceramic constituents. The basic random variables include ceramic and metal Young's modulus and Poisson's ratio, their densities and ceramic volume fraction. The developed code utilizes MATLAB capa- bilities to derive the derivatives of the stiffness and mass matrices symbolically with a considerable reduction in cal- culation time. Calculating the eigenvectors at the mean values of the variables proves to be a reasonable simpli- fication which significantly increases solution speed. The stochastic finite element code is validated using available data in the literature, in addition to comparisons with results of the well-established Monte Carlo simulation technique with importance sampling. Results show that SORM is an excellent rapid tool in the stochastic analysis of free vibra- tion of FGM plates, when compared to the slower Monte Carlo simulation techniques.

Keywords :

FGM; Stochastic finite element analysis; Shear deformable plate; FORM; SORM.

International Publications Awards
Cairo University

Name : **Prof . Edward Adib Sadek**

Dep. : **Aerospace Engineering**

Title : **Stochastic Finite Element Analysis of the Free Vibration of Laminated Composite Plates**

Afeefa Shaker, Wael G. Abdelrahman, Mohammad Tawfik and Edward Sadek

Journal : **Comput Mech**

ISSN : 0178-7675 **Impact Factor :** 1.087

Abstract :

Using the Stochastic Finite Element Method (SFEM) to perform reliability analysis of the free vibration of composite plates with material and fabrication uncertainties has received much attention lately. In this work the stochas- tic analysis is performed using the First-Order Reliability Method (FORM-method 2) and the Second-Order Reliabil- ity Method (SORM). The basic random variables include laminae stiffness properties and material density, as well as the randomness in ply orientation angles. Modeling of the composite behavior utilizes a nine-noded isoparametric Lagrangian element based on the third-order shear deforma- tion theory. Calculating the eigenvectors at the mean values of the variables proves to be a reasonable simplification which significantly increases solution speed. The stochastic finite element code is validated using comparisons with results of Monte Carlo simulation technique with importance sam- pling. Results show that SORM is an excellent rapid tool in the stochastic analysis of free vibration of composite plates, when compared to the slower Monte Carlo simulation tech- niques.

International Publications Awards
Cairo University

Name : **Prof . Emad El-Din Farouk EL-Kashif**

Dep. : **Mining, Petroleum and Metallurgical**

Title : **Preparation of Zirconium Metal by the Electrochemical Reduction of Zirconium Oxide**

A. M. Abdelkader, A. Daher, Randa A., Abdelkareem and Emad El-Kashif

Journal : **Metallurgical and Materials Transactions**

ISSN : 1073-5615 **Impact Factor :** 0.91

Abstract :

An electrolytic production technique based on the electrochemical reduction of zirconium oxide was developed. Various factors affecting the reduction process were investigated. These factors include the cell voltage, the electrolysis time, the composition of the molten bath, and the temperature of the bath. The novel cell design succeeded in the production of zirconium powder or sponge with less than 400 ppm oxygen in a semi-continuous manner.

International Publications Awards
Cairo University

Name : **Prof . Emad El-Din Khalaf Al-Hussaini**

Dep. : **Electronics and Communication Engineering**

Title : **Diversity Reception of an Asynchronous Blind Adaptive Multiuser Detector Through Correlated Nakagami Fading Channel**

Khodr A. Saaifan and Emad K. Al-Hussaini

Journal : **Wireless Personal Communications**

ISSN : 0929-6212 **Impact Factor :** 0.25

Abstract :

In this paper, blind adaptive multiuser detection (MUD) technique is developed for uplink transmission in multiuser space diversity DS-CDMA system to overcome multipath fading effect and multiple access interference. The system consists of a space diversity, a precombining blind adaptive detector (PBAD), and a weight adaptation technique based on the minimization of the mean output energy (MOE). The bit error rate (BER) performance of this receiver for asynchronous DS-CDMA signals with independent and correlated antenna branches under Nakagami fading channel for BPSK system is evaluated. It has been seen that the use of antenna diversity can yield substantial improvement in performance even if the correlation between the antenna elements is relatively large (up to 0.795). However, the large correlation values pose a significant reduction in the diversity gain in comparison with the zero correlation situation. It has also been confirmed by simulations that the PBAD provides a significant receiver performance in comparison with the RAKE receiver employing antenna diversity.

Keywords :

Diversity; Nakagami fading; Multiuser detection; Blind adaptive detector.

International Publications Awards
Cairo University

Name : **Prof . Essam Abdel-Halim Hashish**

Dep. : **Electronics and Communication Engineering**

Title : **Design Equations of Two-Dimensional Dielectric Photonic Band Gap Structures**

M. A. El-Dahshory, A. M. Attiya and E. A. Hashish

Journal : **Progress in Electromagnetic Research, PIER**

ISSN : 1559-8985 **Impact Factor :**

Abstract :

This paper presents simple formulas for designing different configurations of two-dimensional photonic band gap (PBG) structures. These formulas are obtained by interpolating full wave analysis based on the plane wave expansion method. The design parameters of these formulas include the physical dimensions of the unit cell and the electrical properties of both host and inclusion in the structure. These formulas represent an efficient and fast method to obtain the band gap and the center frequency of different PBG structures.

Name : **Prof . Essam Abdel-Halim Hashish**

Dep. : **Electronics and Communication Engineering**

Title : **Full-Wave Analysis of a New Designed Wide Band Microstrip Filter Using the Novel Method of Lines**

Essam Hashish and Hossam A. Saker

Journal : **Microwave and Optical Technology Letters**

ISSN : 0895-2477 **Impact Factor :** 0.568

Abstract :

A wide band small size microstrip filter is designed based on a full wave analysis achieved through a novel method of lines. Such a novel method enables the analysis of structures having either short or long interconnections between single discontinuities, and it reduces the discretization window through nonequidistant discretization. In the full wave analysis, the scattering parameters of the designed filter are computed, leading to an achievement of a bandwidth up to 23%. The designed filter is fabricated and tested, where good agreement is found between the numerical and experimental results.

Keywords :

Microstrip filter; Novel method of lines.

International Publications Awards
Cairo University

Name : **Prof . Essam El-Deen Khaleel**

Dep. : **Mechanical Power**

Title : **Air Flow Patterns and Thermal Behavior in "King Tutankhamen Tomb"**

Essam E. Khalil

Journal : **Manuscript received June**

ISSN : 1970-8734 **Impact Factor :**

Abstract :

The tombs of the Pharonic kings in "valley of the kings", Thebes, Egypt are famous for their unique wall paintings and structure. KV62, King Tutankhamen tomb, is the most famous because of the treasures it held intact for over three thousand years. The burial chamber is decorated with scenes from the Opening of the Mouth ritual, Book of the Dead, and representations of the king with various deities. The current status of the tomb is very critical as pink stain and black fungus spots have spread over decorated walls due to excessive moisture content in the air. Visitors' activities led to extra moisture production inside the tomb, this would naturally lead to more pink spots and fungus activities. For this purpose and in pursue of restoration operation it was suggested to design and install a special ventilation system that would reduce the relative humidity inside the tomb to normally acceptable environment for artifacts. Commercial CFD codes are also used in order to simulate the indoor air conditions, air flow velocities, temperatures and relative humidity patterns. A parametric investigation to select the most suitable airside system design that doesn't affect the archaeological theme of the tomb and that provides lower air velocities around the wall paintings as well as lower air humidity all over the tomb is reported.

Keywords :

CFD; Air conditioning; Simulation.

International Publications Awards
Cairo University

Name : **Prof . Hanafy Sayed El-Zoheiry**

Dep. : **Engineering Mathematics and Physics**

Title : **Toward a Modified Variational Iteration Method**

Tamer A. Abassy, Magdy A. El-Tawil and H. El Zoheiry

Journal : **Computational and Applied Mathematics**

ISSN : 0377-0427 **Impact Factor :** 0.759

Abstract :

The variational iteration method (VIM) attracted much attention in the past few years as a promising method for solving nonlinear differential equations. It is shown in this paper that the application of VIM to a special kind of nonlinear differential equations leads to calculation of unneeded terms and more time consumed in repeated calculations for series solutions. A modified VIM is introduced to eliminate the shortcomings; and its effectiveness is illustrated by some examples.

Keywords :

Analytical solution; Variational iteration method; Adomian decomposition method; Nonlinear partial differential equation; Burgers' equation; KdV equation.

International Publications Awards
Cairo University

Name : **Prof . Hanafy Sayed El-Zoheiry**

Dep. : **Engineering Mathematics and Physics**

Title : **Solving Nonlinear Partial Differential Equations Using the Modified Variational Iteration Pade Technique**

Tamer A. Abassy, Magdy A. El-Tawil and H. El Zoheiry

Journal : **Computational and Applied Mathematics**

ISSN : 0377-0427 **Impact Factor :** 0.759

Abstract :

In this paper, the modified variational iteration method (MVIM) is reintroduced with the enhancement of Pade approximants to lengthen the interval of convergence of VIM or MVIM when used alone in solving nonlinear problems. KdV, mKdV, Burger's and Lax's equations are used as examples to illustrate the effectiveness and convenience of the proposed technique.

Keywords :

Nonlinear partial differential equations; Variational iteration method; Solitons; Padé technique; Mathematica.

International Publications Awards
Cairo University

Name : **Prof . Hany Ahmed Khater**

Dep. : **Mechanical Power**

Title : **Prediction of the Onset of Flow Instability in the ETRR-2 Research Reactor Under Loss of Flow Accident**

Hany A. Khater, Salah El-Din El-Morshdy and Mohamed M. A. Ibrahim

Journal : **Kerntechnik**

ISSN : 0932-3902 **Impact Factor :** 0.062

Abstract :

In the present work, Prediction of the onset of the flow instability (OFI) in the Egypt's second Research Reactor (ETRR-2) under loss of flow accident (LOFA) due to loss of off-site power has been performed based on the model developed in previous work [1]. Calculations are performed for LOFA with Scram due to low flow signal at 90% of the nominal flow where the time length that covers this transient is 4.8 seconds. Both the best-estimate and conservative calculations are performed under the specified operating conditions and geometrical data of ETRR-2 for both exponential and ramp pressure gradient change. The OFI locus is predicted and plotted against the flow velocity, exit coolant temperature and bubble detachment parameter for several heat fluxes. The results are analyzed and assessed in order to obtain the safety margins for OFI phenomenon that measure how far are the operating conditions from the OFI locus. It is found that, the safety margins for OFI phenomenon in the best-estimate calculation are 2.62 and 2.35 for steady state and LOFA transient respectively, while its values in the conservative calculation are 1.68 and 1.47 respectively.

Name : **Prof . Hany Ahmed Khater**

Dep. : **Mechanical Power**

Title : **Thermal Hydraulic Modeling of the Onset of Flow Instability in MTR Reactors**

Hany A. Khater, Salah El-Din El-Morshedy and Mohamed M.A. Ibrahim

Journal : **Annals of Nuclear Energy**

ISSN : 0306-4549 **Impact Factor :** 0.69

Abstract :

Prediction of the onset of the flow instability (OFI) in steady and transient sub-cooled flow boiling is an important consideration in the design and operation of nuclear reactors, in particular for materials testing reactors (MTR). In this study, a predictive model for OFI in the MTR has been developed. The model is based on both the heat balance during the bubble generation and condensation processes, and the force balance for the detached bubbles at the onset of significant void (OSV). The only adjustable coefficient involved in the proposed model is quantified by comparison with the experimental data of Whittle and Forgan [Whittle, R.H., Forgan, R., 1967. A correlation for the minima in the pressure drop versus flow-rate curves for sub-cooled water flowing in narrow heated channels. Nucl. Eng. Des. 6, 89–99], which covers the wide range of MTR operating conditions. The model predictions are compared with predictions of some previous models, and it is shown that the present model results in smaller deviation from the experimental data. A correlation for the heat flux at OFI is also developed based on the present model. The developed correlation gives lower deviation from the experimental data than the well-known correlation of Whittle and Forgan. The model is also used to predict the OFI locus during a transient, where it shows good agreement with the short transient data of Lee and Bankoff [Lee, S.C., Bankoff, S.G., 1993. Prediction of the onset of flow instability in transient sub-cooled flow boiling

Name : **Prof . Hany Ahmed Khater**

Dep. : **Mechanical Power**

Title : **Thermal-Hydraulic Modeling of Reactivity Accident in MTR Reactors**

Hany Khater, Talal Abu-EL-Maty and Salah El-Din EL-Morshdy

Journal : **Annals of Nuclear Energy**

ISSN : 0306-4549 **Impact Factor :** 0.69

Abstract :

This paper describes the development of a dynamic model for the thermal-hydraulic analysis of MTR research reactor during a reactivity insertion accident (RIA). The model is formulated for coupling reactor kinetics with feedback reactivity and the reactor core thermal-hydraulics. Two channels are considered: the average and the hot channels to represent the reactor core. The developed computer program is compiled and executed on a personal computer using the FORTRAN language. The model is validated by safety-related benchmark calculation for MTR-Type reactors of IAEA 10 MW generic reactor for both slow and fast reactivity insertion transients [IAEA-TECDOC, 1980. Research Reactor Core Conversion from the use of Highly Enriched Uranium to the use of Low Enriched Uranium Fuels, Guidebook. Tecdoc, 233, Tecdoc, 643]. A good agreement is shown between the present model and the benchmark calculations. Then, the model is used for simulating uncontrolled withdrawal of a control plate of ETRR-2 for both transients: transient with over power scram trip and self-limited transient. The model results for ETRR-2 were analyzed and discussed.

International Publications Awards
Cairo University

Name : **Prof . Hosam Kamal Mohamed Youssef**

Dep. : **Electric Power and Machines**

Title : **Optimum VAR Sizing and Allocation Using Particle Swarm Optimization**

Amgad A. EL-Dib, Hosam K.M. Youssef, M.M. EL-Metwally and Z Osman.

Journal : **Electric Power Systems Research**

ISSN : 0378-7796 **Impact Factor :** 0.393

Abstract :

This paper proposes a solution technique for finding the optimum location and sizing of the shunt compensation devices in transmission systems. The objective of the fonnulation is to improve the voltage stability of the system while maintaining acceptable voltage profile. The problem can be formulated as an integer nonlinear optimization problem. The newly developed evolutionary technique particle swann optimization (PSO) is used to solve this problem. Case studies with the Ward-Hale 6-bus, IEEE 14-bus and 3D-bus systems are presented to illustrate the applicability of the algorithm. A comparison with the genetic algorithm (GA) is performed to show the quality of the solutions obtained by pso.

Keywords :

Voltage stability; Optimum VAR sizing and allocation; Transmission systems; Stability margin; PSO.

Name: **Prof.** **Iman Salah El-Din El-Mahallawi**

Dept.: **Mining, Petroleum and Metallurgical**

Title: **Current Research in Egypt on Optimisation of Combined Mechanical Strength and Corrosion Behaviour of Steel Rebar**

I. S. El-Mahallaw, M. R. El Koussy, S. M. El Raghy, G. Megahed, M. Hashem, A. F. Waheed and O. Abd-Ellatif

Journal: **International Heat Treatment and Surface Engineering**

ISSN: 1749-5156 **Impact Factor:**

Abstract:

The effect of accelerated water cooling on the mechanical and corrosion properties of steel rebars produced from steel with composition of 0.17–0.286%C, 0.62–0.72%Mn, 0.15–0.20%Si has been assessed. The bars were rolled from continuously cast steel billets to 12, 16, 20 and 25 mm diameter. Immediately after the last rolling stand the steel bars entered the quenching box. Cooling conditions were varied by changing the number of cooling nozzles and the water flowrate. Initial bar temperature and equalised temperature were calculated using a mathematical model and recorded by pyrometers at the entry of the quenching box and the entry of the cooling bed.
Corrosion resistance was determined potentiodynamically and by immersion tests in NaCl and $Ca(OH)_2$ solution.
Equalising temperature decreased with increasing cooling time and water flowrate. Yield strength and ultimate tensile strength (UTS) increased and elongation decreased with decreasing equalising temperature, indicating that different steel grades can be obtained from billet of the same composition using accelerated cooling. Though no direct relationship was observed between mechanical properties and corrosion resistance, the results indicate that cooling conditions and process parameters for the rmomechanical treatment should be selected on the basis of corrosion requirements as well as to produce the desired mechanical properties.

Keywords:

Rebar corrosion; Rebar mechanical strength; Tempcore

International Publications Awards
Cairo University

Name : **Prof . Islam Abdel-Sattar Eshrah**

Dep. : **Electronics and Communication Engineering**

Title : **A Periodically Loaded Transmission Line Excited by an Aperiodic Source-A Green's Function Approach**

Islam A. Eshrah and Ahmed A. Kishk

Journal : **Ieee Transactions on Microwave Theory and Techniques**

ISSN : 0018-9480 **Impact Factor :** 2.03

Abstract :

A simple and closed-form expression for the Green's function of a periodically loaded infinite transmission line is de- rived. The spatial-domain formulation is based on distinguishing three coordinate systems, i.e., the observation, primary source, and secondary source coordinates. The Fourier transform is subse- quently employed to transform the primary source spatial domain to a spectral domain, wherein Floquet's theorem is applicable. While applying Floquet's theorem, the observation coordinate is Fourier transformed to another spectral parameter that is a function of the primary source spectral parameter. The spa- tial-domain expression for the Green's function is obtained upon identifying the poles in the spectral parameter complex plane. The derived expression is verified by comparing the values of the voltage along the line obtained analytically with those obtained using a circuit simulator. The effect of the various parameters on the voltage distribution along the line and the dispersion curves is investigated.

Keywords :

Aperiodic source; Green's function; Periodic structure; Transmission line.

International Publications Awards
Cairo University

Name : **Prof . Islam Abdel-Sattar Eshrah**

Dep. : **Electronics and Communication Engineering**

Title : **Magnetic-Type Dyadic Green's Functions for a Corrugated Rectangular Metaguide Based on Asymptotic Boundary Conditions**

Islam A. Eshrah and Ahmed A. Kishk

Journal : **Ieee Transactions on Microwave Theory and Techniques**

ISSN : 0018-9480 **Impact Factor :** 2.027

Abstract :

The Green's functions for the magnetic scalar and electric vector potentials are derived for a rectangular waveguide with dielectric-filled corrugations supporting left-hand, as well as right-hand propagation. The derivation of the Green's functions for this pair of auxiliary potentials is more involved than their elec- tric-type counterparts. An investigation of the divergence of the electric vector potential is performed with emphasis on the wave- guide transverse electric modes. As a result of the divergenceless nature of the vector potential for these modes, the scalar potential is shown to vanish within the corrugations, and the rest of the derivation proceeds by employing the spectral representation then transforming back to the spatial domain. The derived expressions are verified by considering some examples involving disconti- nuities that can be modeled by equivalent magnetic currents in view of the equivalence principle. Comparison with full-wave simulation commercial packages validates the current theory.

Keywords :

Auxiliary potentials; Corrugated waveguide; Green's function; Metamaterial transmission line

International Publications Awards
Cairo University

Name : **Prof . Laila Salah El-Deen Ahmed Bayoumi**

Dep. : **Mechanical Design and Production**

Title : **A Kinematic Analytical Approach to Predict Roll Force, Rolling Torque and Forward Slip in Thin Hot Strip Continuous Rolling**

L. S. Bayoumi

Journal : **Ironmaking and Steelmaking**

ISSN : 0301-9233 **Impact Factor :** 0.358

Abstract :

A kinematic analytical approach has been developed to predict the roll force, rolling torque and forward slip in thin hot strip continuous rolling under various rolling conditions. The approach is based on formulating a velocity field in the roll bite zone that expresses the effect of interfacial friction on the distribution of axial velocity and longitudinal stresses across the strip thickness. The results obtained from the proposed approach are in fair agreement with finite element simulation results, whereas available analytical methods, which are usually valid for billets and thick plates, have given considerable error in the results. The proposed approach is applied to study the effect of thickness reduction ratio, coefficient of friction, work roll diameter and front and back tensions on the roll force, rolling torque and forward slip in thin hot strip rolling. The main merit of the proposed analytical approach, as compared to finite element simulation, lies in the drastic reduction in the computational time required in finite element simulation, which favours its use in online control of rolling thin strips.

Keywords :

Strip rolling; Roll force; Rolling torque; Forward slip

International Publications Awards
Cairo University

Name : **Prof . Magdy Abdel-Aaty El-Tawil**

Dep. : **Engineering Mathematics and Physics**

Title : **Using FEM–RVT Technique for Solving a Randomly Excited Ordinary Differential Equation with a Random Operator**

M. El-Tawil, W. El-Tahan and A. Hussein

Journal : **Applied Mathematics and Computation**

ISSN : 0096-3003 **Impact Factor :** 0.82

Abstract :

The technique of stochastic finite element (SFEM) which is the finite element technique FEM adapted to stochastic problems can be re-described to use random variable transformation technique RVT. A new FEM–RVT technique was successfully used in solving stochastic problems with random excitation [M. El-Tawil, W. El-Tahhan, A. Hussein, A pro- posed technique of SFEM on solving ordinary random differential equation, J. Appl. Math. Comput. 161 (2005) 35–47]. In this paper, the technique is adapted to solve a randomly excited differential equation with a random operator. The technique shows high accuracy when solving a case study compared with the exact solution. Finally a problem with unknown exact solution is solved using this technique.

Keywords :

FEM; Computatonl methods for stochastic equations; Ordinary differential equations; Stochastic methods

International Publications Awards
Cairo University

Name : **Prof . Magdy Abdel-Aaty El-Tawil**

Dep. : **Engineering Mathematics and Physics**

Title : **Exact Solutions of some Nonlinear Partial Differential Equations Using the Variational Iteration Method Linked with Laplace Transforms and the Pad´e Technique**

Tamer A. Abassy, Magdy A. El-Tawil and H. El-Zoheiry

Journal : **Computers and Mathematics with Applications**

ISSN : 0898-1221 **Impact Factor :** 0.61

Abstract :

In this paper, the variational iteration method (VIM) is reintroduced with Laplace transforms and the Pad´e technique treatment to obtain closed form solutions of nonlinear equations. Some examples, including the coupled Burger's equation, compacton k(n, n) equation, Zakharov–Kuznetsov Zk(n, n) equation, and KdV and mKdV equations are given to show the effectiveness of the coupled VIM–Laplace–Pad´e and VIM–Pad´e techniques

Keywords :

Nonlinear partial differential equations; Variational iteration method; Compactons; Laplace transform; Pad´e approximant

International Publications Awards
Cairo University

Name : **Prof . Magdy Abdel-Aaty El-Tawil**

Dep. : **Engineering Mathematics and Physics**

Title : **Modified Variational Iteration Method for Boussinesq Equation**

Tamer A. Abassy, Magdy A. El-Tawil and H. El-Zoheiry

Journal : **Computers and Mathematics with Applications**

ISSN : 0898-1221 **Impact Factor :** 0.61

Abstract :

This paper applies the modified variational iteration method to solve a class of nonlinear partial differential equations. Boussinesq equation is used as a case-study to illustrate the simplicity and effectiveness of the method. Comparison between variational iteration method and Adomian decomposition method is made.

Keywords :

Boussinesq equation; Variational iteration method (VIM); Nonlinear partial mifferential equations; Modified VIM (MVIM); Adomian method

Name : **Prof . Magdy Abdel-Aaty El-Tawil**

Dep. : **Engineering Mathematics and Physics**

Title : **The Solution of Burgers' and Good Boussinesq Equations Using ADM–Pade´ Technique**

Tamer A. Abassy, Magdy A. El-Tawil and Hassan K. Saleh

Journal : **Chaos Solitons and Fractals**

ISSN : 0960-0779 **Impact Factor :** 2.04

Abstract :

ADM–Pade´ technique is a combination of Adomian decomposition method (ADM) and Pade´ approximants. It is an approximate method, which can be adapted to solve nonlinear partial differential equations. In this paper, we solve Bur- gers' and Boussinesq equation using ADM–Pade´ technique which gives the approximate solution with faster conver- gence rate and higher accuracy than using ADM alone.

International Publications Awards
Cairo University

Name : **Prof . Magdy Fikri Mohamed**

Dep. : **Electronics and Communication Engineering**

Title : **Practical Considerations for Recursive DFT Implementation in Numerical Relays**

Hatem A. Darwish and Magdy Fikri

Journal : **Ieee Transactions on Power Delivery**

ISSN : 0885-8977 **Impact Factor :** 0.50

Abstract :

In this paper, practical considerations for recursive Discrete Fourier Transform (DFT) implementation in numerical relays are presented. The DFT filter instabilities which would produce accumulated errors are emphasized. The aspects ruling error accumulation of the estimated magnitude and phase are highlighted. Novel solutions directed for the elimination of error accumulation are proposed and intensively tested. Digital signal processing (DSP) board based test set-up is utilized for the experimental verification. The paper results are valuable for the protection engineers particularly those concerned with the development and implementation of numerical relays.

Keywords :

Terms-Computer relaying; Digital signal processing (DSP); Phasor estimation; Recursive discrete fourier transform (DFT)

International Publications Awards
Cairo University

Name : **Prof . Magdy Mohamed Saed El-Soudani**

Dep. : **Electronics and Communication Engineering**

Title : A Novel Design Technique for LDPC Codes

Fatma A. Newagy, Yasmine A. Fahmy and Magdi M. S. El-Soudani

Journal : **Frequenz**

ISSN : 0016-1136 **Impact Factor :** 0.186

Abstract :

New designing technique for different rates of Low-Density Parity-Check codes (LDPC) in Binary-Input AWGN channel is presented. To minimize the gap to Shannon bound, constrained particle swarm optimization (CPSO) algorithm is applied on the variable and check node degree distribution $\lambda(x)$ and $\rho(x)$ respectively in case of irregular LDPC codes. Adapted Discrete Fast Density Evolution (FDE) is used to calculate the threshold value of LDPC code. The obtained results show that, our proposed distributions with low upper bound on the maximum degrees of (λ, ρ) to satisfy simple decoding process have 0.1529 dB, 0.0127dB, 0.1220 dB, 0.0171 dB, and 0.1227dB gap to Shannon bound values for code rates 0.1, 0.3, 0.5, 0.7, and 0.9 respectively. This paper also introduces different construction techniques of parity-check H matrix for code rate equals to half. The first one is the proposed Accurate Random Construction Technique (ARCT) which is a modification of the traditional Ran-dom Construction Technique (RCT) to satisfy an accurate profile. The second technique, Speed Up Technique (SUT), improves the performance of irregular LDPC codes by creating H matrix from proposed initial construc-tion ensures no cycles not from empty matrix as usual. The third and fourth techniques are further improvements of the SUT that insure simpler decoding process by using smaller decoder size. In Double Speed Up Technique (DSUT), SUT matrix of size M×N is used to construct H matrix with double size, i.e. block length = 2N but the decoder size is still M×N. In Partitioned Speed Up Technique (PSUT), the H matrix size is fixed to M×N and small SUT submatrix is used to grow it. Therefore the decoder size is the size of the SUT submatrix. Simulations show that the performance of LDPC codes formed using SUT outperforms ARCT at block length N = 1000 with 0.342dB at BER = 10-5 and LDPC codes created by DSUT outperforms SUT with 0.194dB at BER = 10-5. Simula-tions illustrate that the partitioning of H matrix to small SUT submatrices not only simplifies the decoding proc-ess, it also simplifies the implementation and improves the performance. The improvement, in case of half, is 0.139dB at BER=10-5 however as partitioning increases the performance degrades. It is about 0.322dB at BER=10-5 in case of one-fourth.

Keywords :

Fast density evolution (FDE); Low-density parity-check codes (LDPC); Constrained particle swarm optimization (CPSO) algorithm; Shannon bound; Threshold value; Profile; Random con- struction technique (RCT); Accurate random Construction technique (ARCT); Speed Up technique (SUT).

International Publications Awards
Cairo University

Name : **Prof . Mahmoud Abu El-Ela Mohamed**

Dep. :

Title : **Approach Diagnoses, Reduces Water Cut**

Mahmoud Abu El Ela, Ismaiel Mahgoub and Khaled Mahmoud

Journal : **Oil & Gas**

ISSN : 0030-1388 **Impact Factor :** 0.034

Abstract :

Water cuts in oil producing wells are increasing as time passes and oil fields become mature. The annual cost of disposing of this water is estimated to be around 40 billion dollars worldwide. Numerous treatment methods, both mechanical and chemical, have been employed over the years in attempts to reduce water production rates. This paper presents a complete and cost-effective plan for diagnosing and solving excess water production problems. Application of this work in two oil wells at Khalda Petroleum Company (an international joint venture company in Egypt) gained about 660 MSTB cumulative oil production in two years. Such study is an original contribution to the knowledge of diagnosing and solving excess water production problems.

International Publications Awards
Cairo University

Name: **Prof. Mahmoud Mohamed Tash**

Dept.: **Mining, Petroleum and Metallurgical**

Title: **Effect of Metallurgical Parameters on the Hardness and Microstructural Characterization of as-Cast and Heat-Treated 356 and 319 Aluminum Alloys**

Ravi P. Agarwal, Said R. Grace and Donal O'Regan

Journal: **Materials Science and Engineering A**

ISSN: 0921-5093 **Impact Factor:** 1.49

Abstract:

The present study was undertaken to investigate the effect of metallurgical parameters on the hardness and microstructural characterization of as-cast and heat-treated 356 and 319 alloys, with the aim of adjusting these parameters to produce castings of suitable hardness and Fe-intermetallic volume fractions for subsequent use in studies relating to the machinability of these alloys. By measuring the amount of Fe- and Cu-intermetallics formed and the changes in the eutectic Si particle characteristics resulting from alloying additions (Fe, Mn, Mg), Sr-modification, and heat treatment of the 356 and 319 alloys, and the corresponding hardness values, it was possible to determine which conditions or metallurgical parameters yielded the required Fe-intermetallic volume fractions of 2 and 5% and hardness levels of 85 and 115 BHN. These levels conform to the most common levels observed in the commercial application of these alloys.

The 356 and 319 alloys were examined in the as-cast and heat-treated conditions, using different combinations of grain refining, Sr-modification, and alloying additions. Aging treatments were carried out at 155, 180, 200, and 220 °C for 4 h, followed by air cooling, as well as at 180 and 220 °C for 2, 4, 6, and 8 h to determine conditions under which the specified hardness levels of 85 and 115 HBN could be obtained. Hardness measurements were carried out using a Brinell hardness tester.

Peak hardness was observed in the 356 and 319 alloys at different aging conditions, depending upon the Fe-intermetallic type present in the alloy and whether the alloy was modified or not. Aging at 220 °C revealed a hardness peak at 2 h aging time in both 356 and 319 alloys. Addition of Mg to 319 alloys produced a remarkable increase in hardness at all aging temperatures. This may be explained on the basis of the combined effect of Cu- and Mg-intermetallics in the 319 alloys, where hardening during aging occurs by the cooperative precipitation of Al_2Cu and Mg_2Si phase particles [P. Ouellet, F.H. Samuel, J. Mater. Sci. 34 (1999) 4671–4697; P.N. Crepeau, S.D. Antolovich, J.A. Worden, AFS Trans. 98 (1990) 813–822].

Iron-intermetallic volume fraction measurements were carried out on polished specimens of the 356 and 319 alloys using electron probe microanalysis, for both as-cast and heat-treated conditions. Copper-intermetallic volume fractions were also measured for the 319 alloys to determine the amount of undissolved $CuAl_2$ phase. It was observed that the unmodified alloys displayed higher Fe-intermetallic surface fractions than the modified alloys. The copper-intermetallic surface fractions, on the other hand, were higher in the Sr-modified alloys than the unmodified alloys. These observations may be attributed to the effect of Sr on (a) the dissolution and fragmentation of the β -Fe-intermetallics in the matrix, the solution heat treatment also contributing to this effect; (b) severe segregation of Al_2 Cu and Al_2 MgCu phases in areas away from the eutectic Si regions, slowing down the dissolution of the Al2 Cu phase during solution treatment; (c) altering the precipitation sequence of α-Al_{15} (Fe, Mn)$_3$ Si2 from post-dendritic to pre-dendritic, the latter being expected to improve the alloy strength due to its precipitation within the α-Al dendrites.

Keywords:

356 and 319 Al alloys; Mg and Sr additions; Heat treatment; Microstructure; Fe-intermetallics; Hardness

International Publications Awards
Cairo University

Name : **Prof . Mohamed Abdel Aziz El-Gamal**

Dep. : **Engineering Mathematics and Physics**

Title : **Ensembles of Neural Networks for Fault Diagnosis in Analog Circuits**

M. A. EL- Gamal and M. D. A. Mohamed

Journal : **Electronic Testing: Theory and Applications**

ISSN : 0923-8174 **Impact Factor :** 0.232

Abstract :

A new neural network-based analog fault diagnosis strategy is introduced. Ensemble of neural networks is constructed and trained for efficient and accurate fault classification of the circuit under test (CUT). In the testing phase, the outputs of the individual ensemble members are combined to isolate the actual CUT fault. Prominent techniques for producing the ensemble are utilized, analyzed and compared. The created ensemble exhibit high classification accuracy even if the CUT has overlapping fault classes which cannot be isolated using a unitary neural network. Each neural classifier of the ensemble focuses on a particular region in the CUT measurement space. As a result, significantly better generalization performance is achieved by the ensemble as compared to any of its individual neural nets. Moreover, the selection of the proper architecture of the neural classifiers is simplified. Experimental results demonstrate the superior performance of the developed approach.

Keywords :

Analog circuits; Fault classification; Fault simulation; Ensemble learning; Bagging; boosting.

International Publications Awards
Cairo University

Name : **Prof . Mohamed Mohamed Nassar**

Dep. : **Engineering Mathematics and Physics**

Title : **Application of the Differential Quadrature Method to the Longitudinal Vibration of Non-Uniform Rods**

A. M. A. Al Kaisy, Ramadan A. Esmaeel and Mohamed M. Nassar

Journal : **Engineering Mechanics**

ISSN : 1802-1484 **Impact Factor :**

Abstract :

Differential Quadrature Method (DQM) has a very wide applications in the field of structural vibration of various elements such as beams, plates, cylindrical shells and tanks. One of the most advantages of the DQM is its simple forms for nonlinear for- mulations using the Hadamard product. In this paper the free vibration of a general non-uniform rod were studied. The non-dimensional natural frequency and the nor- malized mode shapes of the non-uniform rod of free and clamped boundary conditions were obtained by using 15 point DQ method and compared to those of references [8] and [9]. Results shows good agreement with the previous analytical solutions. The effect of the varying cross section area on the vibration were studied. This work reflects the power of the DQM in solving non-uniform problems.

Keywords :

Non-uniform rod; Vibration; Differential quadrature method.

International Publications Awards
Cairo University

Name : **Prof . Mohamed Nasr Allam**

Dep. : **Irrigation and Hydraulics**

Title : **Water Resources in Egypt: Future Challeges and Opportunities**

Mohamed Nasr Allam and Gamal Ibrahim Allam

Journal : **Water International**

ISSN : 0250-8060 **Impact Factor :** 0.33

Abstract :

Water is one of the most important inputs for economic development. As the demand increases, so too does the importance of water. This is clearly the case in Egypt, where rainfall is rare and the governmentally enforced quota for withdrawal from the Nile River hasn't changed since 1959. The water demand has multiplied as a result of population growth, agricultural expansion, as well as industrial development and a rise in the standard of living. In this paper, a vision for the future water status in Egypt is presented. This vision is based on a perception of the current status of the available water resources. The water uses, the water use efficiency, the institutional and legislative frameworks of water management, and the strategies and policies to rationalize water use and to augment water supply are discussed. The local, regional and international governing and controlling factors of water utilization and management in Egypt are also analyzed and discussed. Three future water scenarios for year 2020, each reflecting alternate programs to develop the water systems and to rationalize the water uses, are presented. All scenarios showed that Egypt will suffer considerable water shortages in the near future. Recommendations to help overcome anticipated water challenges and to optimize the available opportunities are provided.

International Publications Awards
Cairo University

Name : **Prof . Mohammed Galal Khalfallah**

Dep. : **Mechanical Power**

Title : **Wind Turbines Power Curve Variability**

Khalfallah and Aboelyazied M. Koliub

Journal : **Desalination**

ISSN : 0011-9164 **Impact Factor :** 0.917

Abstract :

A comprehensive measurement programme was carried through 300 kW Nordtank stall-regulated horizontal axis wind turbine. These turbines were erected at the test station for windmills by Hurghada Wind Energy Technology Centre. To the extent necessary to understand the measurement carried out, all experimental set up systems must be described. This paper describes the annual wind speed variability in Hurghada city in period (1973–2001). The wind speed and direction were measured on the latitude of meat masts as, 10, 24.5, and 31 m. These stations were operated since 1986. The wind data was recorded from the instruments with a scanning rate of about 2 Hz and the data was subsequently stored as consecutive 1-h average values. Simultaneously, various types of monthly statistics were accumulated. Also, the study discusses the effect of this wind variability on the power curve of Hurghada farm wind turbines. The results show that, if the annual mean wind speed varies by ± 10% around a long-term average value, the corresponding natural variability of the available wind energy is about ± 25%.

Keywords :

Wind turbine; Performance; Variability; Site roughness; Annual wind speeds

International Publications Awards
Cairo University

Name : **Prof . Mohammed Galal Khalfallah**

Dep. : **Mechanical Power**

Title : **Effect of Dust on the Performance of Wind Turbines**

Mohammed G. Khalfallah and Aboelyazied M. Koliub

Journal : **Desalination**

ISSN : 0011-9164 **Impact Factor :** 0.917

Abstract :

An experimental investigation on the effect of blade surface roughness, due to dust accumulation, on the performance of wind turbines was performed. The development of the energy generating costs of wind turbines directly depends on the wind turbine output, which depends upon the characteristics of the turbine blades and their surface roughness. An important operating requirement that relates to a wind turbines airfoils are its ability to perform when the smoothness of its surface has been degraded by the dust. The effect of surface roughness of rotor blades due to accumulated dust on the blade surface of stall-regulated, horizontal axis 300 kW wind turbine was investigated. The mechanism of dust built up and accumulation on the blade surface of wind turbine was investigated, and the effect of operation period of wind turbine on the blade surface roughness intensity was investigated experimentally. Also, the quantity of dust accumulated on the blade leading edge; and the effect of changing dust area on blade surface were studied. Standard roughness in Hurghada site was chosen and put in various leading edge areas. The roughness area on blades was changed from 5 to 20% from the chord line towards the leading edge. The effect of dust on the performance of pitch-regulated 100 kW horizontal axis wind turbine was investigated. These results from pitch-regulated wind turbine were compared with 100 kW stall-regulated wind turbine.

Keywords :

Wind turbine; Performance; Effect of dust; Pitch regulated; Stall regulated

International Publications Awards
Cairo University

Name : **Prof . Mohammed Galal Khalfallah**

Dep. : **Mechanical Power**

Title : **Suggestions for Improving Wind Turbines Power Curves**

Mohammed G. Khalfallah and Aboelyazied M. Koliub

Journal : **Desalination**

ISSN : 0011-9164 **Impact Factor :** 0.917

Abstract :

The question is usually not whether a wind turbine can be designed to optimise the power production at the site, but rather whether an existing wind turbines with a certain rotor can be modified in order to improve the power production. In this paper the various methods for improving the wind turbines power output were investigated experimentally and theoretically. The effect of changing the rotational rotor speed on the power performance of Nordtank 300 kW stall-regulated, horizontal axis wind turbine was investigated experimentally. This was performed by changing the setting program for operating the wind turbine. The variation in the aerodynamic performance of the wind turbine rotor due to changing the pitch angle was investigated experimentally in Hurghada wind farm. The manufacture setting tip angle for Nordtank 300 kW wind turbine is (–1.8°). In this study, the angle was changed to two values (–2.8°) and (–0.8°). Also, to improve the blade performance of a wind turbine operating in low wind speed ranges; the vortex generators may be used. These vortex generators were placed over low-pressure surface of blade or tip blade part. In this study, two types of vortex generators, rectangle and triangle shapes were investigated.

Keywords :

Wind turbine; Performance upgrading; Pitch regulated; Stall regulated; Vortex generators

Name : **Dr . Mona Mahmoud El-Ghoneimy**

Dep. : **Electronics and Communication Engineering**

Title : **Channel Assignment for Cellular Networks Based on a Local Modified Hopfield Neural Network**

Lydia A. Guirguis and Mona M.R. El Ghoneimy

Journal : **Wireless Personal Communications**

ISSN : 0929-6212 **Impact Factor :** 0.25

Abstract :

In this paper, we propose a modified discrete Hopfield neural networks algorithm for the channel assignment problem. In opposition to previous work, we tried to apply the optimization locally on a per cell basis in order to reduce the CPU processing time and decrease the designed system complexity while obtaining a near-optimum solution. In addition, the research is extended to study the algorithm performance in a more realistic cellular system where the number of requested channels is continuously changing with time. In this paper, the channel assignment problem is formulated as an energy function which is at its minimum when all the defined compatibility constraints are satisfied and the assigned channel number (ACN) is equal to the requested channel number (RCN) in each cell.

Keywords :

Channel assignment; Hopfield neural networks; Local optimization.

International Publications Awards
Cairo University

Name : **Prof . Mostafa Ahmed Moawad Abdin**

Dep. : **Engineering Mathematics and Physics**

Title : **ANN Model for Predicting the Impact of Submerged Aquatic Weeds Existence on the Hydraulic Performance of Branched Open Channel System Accompanied by Water Structures**

Alaa E. Abdin and Mostafa A. M. Abdeen

Journal : **Mechanical Science and Technology**

ISSN : 1738-494X **Impact Factor :** 0.183

Abstract :

The existence of hydraulic structures in a branched open channel system urges the need for considering the gradually varied flow criterion in evaluating the different hydraulic characteristics in this type of open channel system. Computations of hydraulic characteristics such as flow rates and water surface profiles in branched open channel system with hydraulic structures require tremendous numerical effort especially when the flow cannot be assumed uniform. In addition, the existence of submerged aquatic weeds in this branched open channel system adds to the complexity of the evaluation of the different hydraulic characteristics for this system. However, this existence of aquatic weeds can not be neglected since it is very common in Egyptian open channel systems. Artificial Neural Network (ANN) has been widely utilized in the past decade in civil engineering applications for the simulation and prediction of the different physical phenomena and has proven its capabilities in the different fields. The present study aims towards introducing the use of ANN technique to model and predict the impact of submerged aquatic weeds existence on the hydraulic performance of branched open channel system. Specifically the current paper investigates a branched open channel system that consists of main channel supplies water to two branch channels that are infested by submerged aquatic weeds and have water structures such as clear over fall weirs and sluice gates. The results of this study showed that ANN technique was capable, with small computational effort and high accuracy, of predicting the impact of different infestation percentage for submerged aquatic weeds on the hydraulic performance of branched open channel system with two different hydraulic structures.

Keywords :

Artifi neural network; Open channel hydraulics modeling; Vegetated open channels; Hydraulic structures.

International Publications Awards
Cairo University

Name : **Prof . Mostafa Mossaad**

Dep. : **Public Works**

Title : **Settlement of Circular Foundations on Stone-column-reinforced Grounds**

H. Elshazly, D. Hafez and M. Mossaad

Journal : **Ground Improvement**

ISSN : 1755-0750 **Impact Factor :**

Abstract :

Most of the available methods of settlement prediction for foundations on stone-column-reinforced grounds assume infinitely extended foundations on infinite grids of columns. Nevertheless, the real performance of a foundation with finite size is believed to differ from that of a corresponding foundation with infinite size. In the current paper, foundations with real sizes in the common engineering range are analysed. To cover various site conditions, both homogeneous and stratified weak soils are considered. In order to obtain reliable results, a well-tested advanced nonlinear finite element code is used in the modelling. Moreover, field load test results are utilised to calibrate the mathematical model. In the simulation, the postinstallation in situ stress state is included in order to ensure that the mathematical model is capable of reproducing the field settlement records. It was shown that composite grounds with the same stone replacement ratio under structures with different sizes lead to different settlement improvement degrees.

Keywords :

Back analysis; Circular foundations; Settlement calculations; Stone columns.

International Publications Awards
Cairo University

Name : **Prof . Nabil Abdel Badea Yehia**

Dep. : **Structural Engineering**

Title : **Fracture Mechanics of Flanged Reinforced Concrete Sections**

NabilL A.B. Yehia and Noran M. Wahab

Journal : **Engineering Structures**

ISSN : 0141-0296 **Impact Factor :** 0.813

Abstract :

This work reports on the application of fracture mechanics to study the flexural behavior of T-section reinforced concrete beams. Twelve beam specimens; nine flanged and three rectangular, were tested experimentally in a four point bending test under displacement controlled environment. Three main parameters were considered: the ratio of the flange width to web thickness (B/b), the ratio of slab thickness to total height (ts/h), and the ratio of the tension reinforcement steel. The beams size was 70x300x1400mm, the tension reinforcing steel ratios varied between 0.48%, 0.61% and 0.73%, the values of (B/b) varied between 1,1.5,2,2.5 while the values of (ts/h) varied between 0,0.1,0.15,0.2. All the beams have constant span/depth ratio of 4, and initial notch/depth ratio of 0.3. The concrete used had cube strength of 25 MPa at the time of testing while reinforcing steel has nominal yield strength of 530 MPa. Measurements included load, steel strain, concrete strain and deflection. The Fracture Mechanics algorithm proposed by Baluch was employed to analytically investigate the fracture behavior of the T- shaped reinforced concrete beams. The results obtained from the Fracture Mechanics approach were checked against the experimental results. Moreover, a finite element analysis was carried out for the same purpose. Results of both; Fracture Mechanics approach and the finite element analysis, were found to be in good agreement with the experimental results. Yet, both approaches underestimate the maximum capacity of the beam.

Keywords :

Fracutre mechanics; Reinforced concrete; Flanged section; Flexure design.

International Publications Awards
Cairo University

Name : **Prof . Nabil Mahmoud Abdel-Moniem**

Dep. : **Chemical Engineering**

Title : **Removal of Some Heavy Metals by CKD leachate**

Nagwan G. Zaki, I.A. Khattab and N.M. Abd El-Monem

Journal : **Hazardous Materials**

ISSN : 0304-3894 **Impact Factor :** 1.86

Abstract :

In this study, Cu(II), Ni(II), and Zn(II) ions were precipitated from synthetic aqueous solutions as hydroxides by using CKD leachate. Precipitation tests were carried out batch wise in agitated flasks with single-metal solutions (each solution contained 100 mg/l of one of the three metals), and a multi-metal solution that contained 50 mg/l of each of the three elements. The results showed that high removal efficiencies, approaching 100%, of these heavy metals were attained and the leachate of the solid waste CKD, therefore, can be used for removing heavy metals from aqueous solutions.

Keywords :

Removal of heavy metals; Hydroxide precipitation; Cement kiln dust.

Name: Prof. Omar El-Farouk Abdel-Salam

Dept.: Chemical Engineering

Title : Corrosion Behavior of Electtoless Ni-P Alloy Coatings Containing Tungsten or Nano-Scattered Alumina Composite in 3.5% Nacl Solution

Abdel Salam Hamdy, M.A. Shoeib, H. Hady and O.F. Abdel Salam

Journal: Surface & Coatings Technology

ISSN: 0257-8972 **Impact Factor:** 1.559

Abstract:

The corrosion protection performance of electroless deposited nickel-phosphorus(Ni-P) alloy coatings containing tungsten (Ni-P-W) or nano-scattered alumina (Ni-P-Al_2O_3) composite coatings on low carbon steel was studied. The effect of heat treatment on the coating performance was also studied. The optimum conditions under which such coatings can provide good corrosion protection to the substrate were determined after two weeks of immersion in 3.5% NaCl solution. Electrochemical impedance spectroscopy (EIS) and polarization measurements have been used to evaluate the coating performance before and after heat treatment. The Ni-P-W coatings showed the highest surface resistance compared with Ni-P-Al_2O_3 and Ni-P. The surface resistance of Ni-P-W coatings was 12.0x104Ω cm_2 which is about the double of the resistance showed by Ni-P-Al_2O_3 (7.00x104 Ω cm_2) and twenty times greater than the surface resistance of Ni-P (0.78 x104 Ω cm_2). XRD analysis of non-heat-treated samples revealed formation of a protective tungsten phosphide phase. Heat treatment has an adverse effect on the corrosion protection performance of tungsten and alumina composite coatings. The surface resistance decreased sharply after heat treatment.

Keywords:

Electrochemical impendence spectroscopy; Ternary electroless composite coatings; Ni-P- Al_2O_3 coatings; Low carbon steel; Heat treatment.

Name: **Prof. Omar El-Farouk Abdel-Salam**

Dept.: **Chemical Engineering**

Title: **Electroless Deposition of Ternary Ni-P Alloy Coatings Containing Tungsten or Nano-Scattered Alumina Composite on Steel**

Abdel Salam Hamdy, M. A. Shoeib, H. Hady and O. F. Abdel Salam

Journal: **Applied Electrochemistry**

ISSN: 0021-891X **Impact Factor:** 1.409

Abstract:

The performance of ternary electroless deposited Ni-P-W and Ni-P-alumina composite coatings on low carbon steel substrates was studied. The effect of experimental parameters, such as temperature, pH, nickel sulfate concentration, sodium hypophosphate concentration, sodium citrate concentration, and deposition time on the deposition rate was investigated. The coating brightness, coherence, and uniform surface distribution were improved due to addition of W and alumina. The coating performance was evaluated based on the wear-resistance, micro-hardness,and corrosion resistance. The Ni-P-W ternary alloy coatings showed the highest micro hardness, wear-resistance, brightness, and corrosion resistance. The improvement in the performance of Ni-P-W coatings can be explained by the formation of a tungsten phosphide phase.

Keywords:

Ternary alloy coatings; Electroless deposition; Ni-P-W; Ni-P-Al_2O_3 composite coatings; Wear; Micro-hardness; Corrosion; EIS.

International Publications Awards
Cairo University

Name : **Prof . Ragia Ismael Badr**

Dep. : **Electronics and Communication Engineering**

Title : **Adaptive Control of Nonlinear Systems with Unknown High Frequency Gain and Disturbances**

N. A. S. Fawzy, A. A. Abouelsoud, M. S. Mahmoud, R. I. Badr and M. F. Hassan

Journal : **The Mediterranean Measurement and Control**

ISSN : 1743-931 **Impact Factor :**

Abstract :

In this paper, the problem of designing a global robust model reference adaptive output feedback tracking control is presented for SISO nonlinear systems containing a vector of unknown constant parameters; entering linearly and subject to bounded disturbances with unknown bound. Furthermore, there is no a priori knowledge assumed on the sign of the high frequency gain. A Nussbaum gain is introduced in the global adaptive algorithm to ensure that the output tracks any bounded reference signal. Lyapunov stability method is applied and a dead zone criterion is used to guarantee that all the signals are globally bounded and the tracking error is arbitrary small.

Keywords :

Nonlinear systems; Bounded disturbances; Nussbaum gain; Tracking control; Lyapunov technique; Dead-zone criterion.

International Publications Awards
Cairo University

Name : **Prof . Randa Mohamed Abdel-Karim**

Dep. : **Mining, Petroleum and Metallurgical**

Title : **Improvements in Mechanical and Stress Corrosion Cracking Properties in Al-alloy 7075 via Retrogression and Reaging**

Y. Reda, R. Abdel-Karim and I. Elmahallawi

Journal : **Materials Science and Engineering A**

ISSN : 0921-5093 **Impact Factor :** 1.49

Abstract :

Aluminum alloy 7075 has been widely studied, due to its excellent mechanical properties developed by age hardening and their extensive uses in the aircraft strucutre. Tensile test specimens were tested in various preaging conditions (100, 120, 14 ºC) and various retrogression temperatures T7 (160, 180, 200ºC) in order to evaluate the effect of heating cycles on the mechanical as well as corrosion properties. The optimum condition was preaging at T6120°C and retrogressing at T7200°C, which gave the highest hardness and tensile properties.The corrosion behavior of three-point-loaded specimens after 7 days of immersion in 3.5%NaCl solution, using modified electrochemcial cell, was studied. The most resisting conditon for SCC was preaging at T6=100°C and retrogression at T7=160°C for 250 min. Specimens retrogressed at 200°C for 8 min showed low resistance to stress corrosion cracking.

Keywords :

Aluminum alloy 7075; Retrogression; Reaging; SCC.

Name: Prof. Reem Sayed Ettouney

Dept.: Chemical Engineering

Title : Indirect Cooling Crystallization Process Analysis

R. S. Ettouney and M. A. El-Rifai

Journal: Chemical Engineering` Research and Design

ISSN: 0263-8762 **Impact Factor:** 0.75

Abstract:

A quasi-steady state model is developed for the analysis of cyclically operated con- tinuous cooling crystallization processes used in the recovery of hydrated salts from brines. When reliable correlations for the progressive deterioration of the clean heat transfer coefficients and for salt solubility under the prevailing industrial conditions are available, the model provides for a rational approach towards the optimization of the design and operation of cooling crystal- lizers. The numerical solution of the model equations enables the quantitative investigation of the effects of various design and operating variables such as brine feed flow rate, coolant flow rate, available heat transfer surface and total cycle time on crystals yield and fractional recovery, as well as the effects of constraints on the availability of refrigerated coolant on the overall system performance. The systematic application of the model is illustrated by considering a two stage crystallization train for Glauber salt recovery from lake brine using experimentally gen- erated data on the evolution of the heat transfer coefficient and on Na_2SO_4 solubility in the lake brine. Extensive results illustrate the trade offs associated with alternative operating policies.

Keywords:

Cooling crystallization; Fouling; Glauber salt; Process analysis; Modelling

International Publications Awards
Cairo University

Name : **Prof . Reem Sayed Ettouney**

Dep. : **Chemical Engineering**

Title : **Steady State Modeling of Perforated Plate Extraction Columns**

R.S. Ettouney, M.A. El-Rifai and A.O. Ghallab

Journal : **Chemical Engineering and Processing**

ISSN : 0255-2701 **Impact Factor :** 1.13

Abstract :

A linear steady state model is developed for perforated plate liquid–liquid extractors conducting a slow pseudo first order reaction in the extract phase. The model assumes complete mixing of the continuous phase on each individual stage and plug flow of the uniformly sized dispersed phase droplets. An analytical relationship is developed to relate the achievable purification within a given number of actual plates in terms of three dimensionless parameters which are the extraction factor, a mass transfer rate factor, and a reaction rate enhancement factor. The developed model enabled the expression of the effect of the mass transfer and extraction factors on the overall cascade efficiency in the case of physical extraction and to demonstrate the qualitative and quantitative implications of the enhancing chemical reaction. It is also applicable in the analysis of the steady state control of the extract and raffinate product compositions in an existing column. In this case, the operating range constraints arising from the non-linear hydrodynamics relating the above three dimensionless parameters to the phase flow rates have to be considered.

Keywords :

Perforated plate columns; Extractive reactors; Mixing models; Liquid–liquid extraction

Name : **Prof . Roshdy Mohamed Radwan**

Dep. : **Electric Power and Machines**

Title : **Effect of Spacer's Defects and Conducting Particles on the Electric Field Distribution Along Their Surfaces in GIS**

R. M. Radwan and A. M. Abou-Elyazied

Journal : **Ieee Transactions on Dielectrics and Electrical Insulation**

ISSN : 1070-9878 **Impact Factor :** 0.77

Abstract :

This paper discusses the electric stress distribution at the solid-gas interface with spacer's defects and contaminating spherical conducting particle on the surface.The effects of the defect's size, type and its location and the particle's size and its location on the electric stress distribution at solid-gas interface are presented and discussed. Also, the combined effect of the spacer's defect and the conducting particle on the electric stress distribution will be presented.

Keywords :

Conducting particles; Defects; Electric field; GIS; Solid spacer; Triple junction.

Name : **Prof . Saeed Rezk Grace**

Dep. : **Engineering Mathematics and Physics**

Title : **Oscillation Criteria for First and Second Order Forced Difference Equations with Mixed Nonlinearities**

Ravi P. Agarwal, Martin Bohner, Wing-Sum Cheung and Said R. Grace

Journal : **Mathematical and Computer Modelling**

ISSN : 0865-7177 **Impact Factor :**

Abstract :

Some new criteria for the oscillation of certain difference equations with mixed nonlinearities are established. The main tool in the proofs is an inequality due to Hardy, Littlewood, and P´olya.

Keywords :

Discrete; Oscillation; Nonoscillation; Mixed nonlinear; Nonhomogeneous.

Name: **Prof. Saeed Rezk Grace**

Dept.: **Engineering Mathematics and Physics**

Title: Oscillation Theorems for Second Order Differential Inclusions

Ravi P. Agarwal, Said R. Grace and Donal O'Regan

Journal: Dynamical Systems and Differential Equations

ISSN: 1752-3591 **Impact Factor:**

Abstract:

Some oscillation theorems for the second order differential inclusion of the form

$(a(t)y'(t))' \in e(t) + F(t, y(t))$ for *a.e.* $t \geq t_0 \geq 0$

Keywords:

Oscillation; Nonoscillation; Superlinear; Sublinear; Differential inclusions

International Publications Awards
Cairo University

Name: Prof. Saeed Rezk Grace

Dept.: Engineering Mathematics and Physics

Title : Oscillation of Fourth Order Nonlinear Difference Equations

Ravi P. Agarwal, Said R. Grace and Patricia J.Y. Wong

Journal: International J. of Difference Equations

ISSN: 0973-6069 **Impact Factor:**

Abstract:

In this paper we shall establish some new criteria for the oscillation of nonlinear fourth order difference equations of the form

$$\Delta^2\left(\frac{1}{a(k)}(\Delta^2 x(k))^{\alpha}\right) = q(k)f(x[g(k)]) + p(k)h(x[\sigma(k)]),$$

where α is the ratio of two positive odd integers.

Keywords:

Oscillation; Nonoscillation; Functional differential equation.

International Publications Awards
Cairo University

Name: **Prof. Saeed Rezk Grace**

Dept.: **Engineering Mathematics and Physics**

Title : **Oscillation Criteria for Fourth Order Nonlinear Difference Equations**

Ravi P. Agarwal, Said R. Grace and Elvan Akin-Bohner

Journal: **Georgian Mathematical**

ISSN: 1072-947X **Impact Factor:**

Abstract:

Some new criteria for the oscillation of the fourth order difference equation

$$\Delta^2\left(a(n)\left(\Delta^2 x(n)\right)^{\alpha}\right) + q(n)f(x(n+1)) = 0,$$

where 0: is the ratio of two positive odd integers are established.

Keywords:

Discrete; Oscillation; Nonoscillation; Comparison.

Name: Prof. Saeed Rezk Grace

Dept.: Engineering Mathematics and Physics

Title : Oscillation of Certain Third Order Nonlinear Functional Differential Equations

Ravi P. Agarwal, Said R. Grace and Patricia J.Y. Wong

Journal: Advances in Dynamic Systems and Applications

ISSN: 0973-5231 **Impact Factor:**

Abstract:

In this paper we shall investigate the oscillatory properties of the equations

$$\frac{d^2}{dt^2}\left(\frac{1}{a(t)}\left(\frac{dx(t)}{dt}\right)^{\alpha}\right)+q(t)f(x[g(t)])=0$$

and

$$\frac{d^2}{dt^2}\left(\frac{1}{a(t)}\left(\frac{dx(t)}{dt}\right)^{\alpha}\right)=q(t)f(x[g(t)])+p(t)h(x[\sigma(t)]),$$

where is the ratio of two positive odd integers.

Keywords:

Functional differential equations; Oscillation; Nonoscillation; Comparison.

International Publications Awards
Cairo University

Name: Prof. Saeed Rezk Grace

Dept.: Engineering Mathematics and Physics

Title : Oscillation of Certain Fourth-Order Functional Differential Equations

R.P.Agarwal, S.R.Grace and D.O'Regan

Journal: Ukrainian Mathematical

ISSN: 1573-9376 **Impact Factor:**

Abstract:

Some new criteria for the oscillation of fourth-order nonlinear functional differential equations of the form are established $\frac{d^2}{dt^2}\left(a(t)\left(\frac{d^2x(t)}{dt^2}\right)^{\alpha}\right) + q(t)f(x[g(t)]) = 0, \alpha > 0$

Keywords:

Oscillation; Nonoscillation; Functional differential equation.

Name: Prof. Saeed Rezk Grace

Dept.: Engineering Mathematics and Physics

Title : Forced Oscillation for General Differential Equations

Ravi P. Agarwal, Said R. Grace and Donal O. Regan

Journal: Ukrainian Mathematical

ISSN: 1002-0942 **Impact Factor:**

Abstract:

New oscillation criteria for general differential equations of the form: $\left(a(t)|x'(t)|^{\alpha-1}x'(t)\right)' + q(t)f\left(x[g(t)]\right) = 0$

where $q(t) \in C([t_0,\infty), R = (-\infty,\infty))$ when $g(t) \geq t$, and $q(t) \in C([t_0,\infty), R^+ = (0,\infty))$ when $g(t) \leq t$

where λ, μ are the ratios of positive odd integers , 0<μ<1 and λ>1 are established

Keywords:

Oscillation; Non oscillation; Nonlinear; Comparison.

International Publications Awards
Cairo University

Name: Prof. Saeed Rezk Grace

Dept.: Engineering Mathematics and Physics

Title : On the Oscillation of Certain Second Order Differential Equations

Ravi P. Agarwal and Said R. Grace

Journal: Mathematics, Game Theory and Algebra

ISSN: 1060-9881 **Impact Factor:**

Abstract:

We establish some new criteria for the oscillation of the second order differential equations of the form

$$\left(a(t)|x'(t)|^{\alpha-1}x'(t)\right)' + q(t)f(x[g(t)]) = 0$$

Where $q(t) \in C([t_0,\infty), R = (-\infty,\infty))$ when $g(t) \geq t$, and $q(t) \in C([t_0,\infty), R^+ = (0,\infty))$ when $g(t) \leq t$

Keywords:

Discrete; Oscillation; Nonoscillation; Comparison.

International Publications Awards
Cairo University

Name : **Prof . Salwa Kamal Abd-El-Hafiz**

Dep. : **Engineering Mathematics and Physics**

Title : **Speed-Range-Based Optimization of Nonlinear Electromagnetic Braking Systems**

A. A. Adly and S. K. Abd-El-Hafiz

Journal : **Ieee Transactions on Magnetics**

ISSN : 0018-9464 **Impact Factor :** 0.938

Abstract :

Utilization of eddy-current braking systems has been on the rise due to their technical advantages. Numerous studies have been per- formed to analyze the performance of these systems. Such studies demonstrated the effect of different parameters on their performance such as magnetic properties as well as braking speed range. This paper presents a particle swarm optimization evolutionary method-ology for nonlinear electromagnetic eddy-current braking systems. Using this methodology, a configuration yielding minimum braking distance for a body decelerating from a given speed may be predicted. Details of the methodology and sample simulation results are given in this paper.

Keywords :

Design optimization; Electromagnetic braking systems; Particle swarm optimization

International Publications Awards
Cairo University

Name : **Prof . Salwa Kamal Abd-El-Hafiz**

Dep. : **Engineering Mathematics and Physics**

Title : **Efficient Implementation of Anisotropic Vector Preisach-Type Models Using Coupled Step Functions**

A. A. Adly and S. K. Abd-El-Hafiz

Journal : **Ieee Transactions on Magnetics**

ISSN : 0018-9464 **Impact Factor :** 0.938

Abstract :

Anisotropic vector hysteresis models are important tools for the accurate simulation of multi-dimensional field-media interactions. This paper presents a computationally efficient vector Preisach-type model for media exhibiting uniaxial anisotropy. The model is constructed from two scalar models having orthogonally inter-related elementary operators. Such model is implemented via two linear neural networks fed from the outputs of discrete Hopfield neural network blocks having step activation functions. Details of the model, its identification, and simulation results are presented in the paper.

International Publications Awards
Cairo University

Name : **Prof . Serag El-Deen Habib**

Dep. : **Electronics and Communication Engineering**

Title : **Numerical Simulation of the Limiting Efficiency of the Graded Bandgap Solar Cell**

N.H. Rafat, A.M. Abdel Haleem and S.E.-D. Habib

Journal : **Renewable Energy**

ISSN : 0960-1481 **Impact Factor :** 0.85

Abstract :

The limiting efficiency of the compositionally graded bandgap solar cell is calculated using a 1-D numerical simulator. Our simulator calculates the limiting efficiency by solving the coupled semiconductor equations, namely, Poisson's equation, the current continuity equations, together with the Boltzmann photon equation, rather than the detailed balance equations that are usually used in such calculations. The non-avoidable radiative and Auger bulk losses are the only losses considered in the calculations. The effect of photon recycling on the cell's parameters is included in the calculations of radiative recombination rates. We verified numerically that bandgap grading, under optimum profile, increases the limiting efficiency of the solar cell, over the previously published values. The effect of the bandgap grading on desensitizing the surface of the cell is discussed.

Keywords :

Bandgap; Graded; Limiting efficiency; Simulation; Solar cell

International Publications Awards
Cairo University

Name : **Prof . Yahia Mohamed Shash**

Dep. : **Mechanical Design and Production**

Title : **Optimization of Residual Manganese in Molten Metal in Basic Oxygen Furnace (BOF)**

O.A.El Hady, A.E.Amer, I.S.El Mahallawi and Y.S.Shash

Journal : **Materials Science Forum**

ISSN : 0255-5476 **Impact Factor :**

Abstract :

At the Egyptian Iron and Steel Company, attention is constantly focused on improving basic steel making practice with the aim of improvement of blowing regime and the addition of forming slag materials system.

A number of factors considered important in controlling the properties of steel products and affecting the residual manganese in the basic Oxygen furnace (BOF) have been investigated by changing some industrial parameters, aiming at optimizing the residual manganese in BOF. The studied factors were manganese oxide in the slag, iron oxide in the slag, tapping temperature, Slag basicity, Lance height, blowing time, and carbon content.

It was found that residual manganese increased from 0.25 to 0.35 % wt, due to the reduction of both MnO in slag from 22% to 15% and FeO from 21 to18%, also the increase of tapping temperature from 1650 oC to 1670 oC caused an increase the residual manganese from 0.27% to 0.35%, and the slag basicity decrease from 4.25 to 3.8 led to an increase in the residual manganese from 0.25 to 0.37%. Also, the change of the lance height from 1050 mm to 825 mm caused an increase in the residual manganese from 0.27 % to 0.33 %.

These results are believed to be reflected on the total energy consumption and ferromanganese additions needed for producing specific grades.

Faculty of Computers and Information

International Publications Awards
Cairo University

Name: Dr. Haitham Safwat Hamza

Dep.: Information Technology (IT)

Title : WDM Optical Interconnects : A Balanced Design Approach

Haitham S. Hamza and Jitender S. Deogun

Journal: IEEE- ACM Transactions on Networking

ISSN: 1063-6692 **Impact Factor:** 1.79

Abstract:

In this paper, we develop a new design approach to wavelength division multiplexing (WDM) optical interconnects with the objective of designing cost-effective and scalable interconnects. Our design philosophy strikes a balance between switching and conversion costs, and requires wavelength conversion only between two fixed and predefined wavelengths. The proposed design approach exploits the potential of the wavelength exchange optical crossbar (WOC)-a device that can switch signals simultaneously and seamlessly both in space and wavelength domains. We propose a novel crossbar switch that minimizes hardware and control complexity and use it as a building block for developing a new class of three-stage Clos-like WDM optical interconnects. The design space of the proposed interconnect is characterized and its hardware complexity is analyzed. We also show that the proposed crossbar switch and the new class of WDM interconnects admit most existing routing algorithms with simple modifications. In addition, we show that our design approach can be generalized to develop a class of K –stage Nx N interconnects $3 \leq k \geq \log_2 N-1$

Keywords:

Clos network; Crossbar switch; Optical interconnects; Wavelength converter; Wavelength division multiplexing (WDM); Wavelength exchange optical crossbar (WOC)

International Publications Awards
Cairo University

Name : **Prof . Hisham Mohamed Abdel-Salam**

Dep. : **Decision Support System**

Title : **Re-Sequencing of Design Processes with Activity Stochastic Time and Cost: an Optimization-Simulation Approach**

Hisham M. E. Abdelsalam and Han P. Bao

Journal : **ASME of Mechanical Design**

ISSN : 1050-0472 **Impact Factor :** 1.252

Abstract :

Background. By the mid-1990s, the importance of the early introduction of new products to both market share and profitability became fully understood. Thus, reducing product time-to-market became an essential requirement for continuous competition. Coupled with the fact that about 70% of the life cycle cost of a product is committed at early design phases, the motivation for developing and implementing more effective method- ologies for managing the design process of new product development projects became very strong. Method of Approach. One tool that helps in understanding and analyzing such a project is the design structure matrix (DSM). This paper presents a framework that obtains an optimum sequence of project activities—presented by the DSM—that minimizes total time and cost given stochastic activity estimated time and cost. The framework interfaces a meta-heuristic optimization algorithm called simulated annealing with a commercial risk analysis software. Results. The proposed framework was applied to a design project and the results have shown a robust solution minimum was reached. Conclusions. Since much of the time and cost involved in the design process is attribut- able to its expensive iterative nature. The framework presented in this paper improves a design project via obtaining an optimum sequence of its activities that minimizes total time and cost.

Keywords :

Product design; Optimization; Simulated annealing; DSM

Name : **Dr . Mohamed Mostafa Saleh**

Dep. : **Decision Support System**

Title : **Estimating Market Shares in each Market Segment Using the Information Entropy Concept**

Mohamed M.Saleh

Journal : **Applied Mathematics and Computation**

ISSN : 0096-3003 **Impact Factor :** 0.816

Abstract :

Sales data of a certain product for the various competitors are usually available at the aggregate level. However these data give no clue to the heterogeneities in the sales pattern across different market segments. Heterogeneities are caused by different purchasing behavior in each market segment; as a purchaser in a segment will be attracted to the attributes of the product most important to that segment. This concept can be formalized via a simple attraction model that utilizes an elas- ticity measure for each quality or price attribute [G.S. Carpenter, L.G. Cooper, D.M. Hanssens, D.F. Midgley, Modeling asymmetric competition, Marketing Science 7 (4) (1998) 393–412]. Assessment of these elasticities is not difficult since cus- tomer response – in each market segment – to perception of quality and price is tracked by most firms [J. Ross, D. Georg- off, A survey of productive and quality issues in manufacturing. The state of the industry, Industrial Management 3 (5) (1991) 22–25]. This paper attempts to formulate a generic framework based on the information entropy concept that uti- lizes such an attraction model to estimate competitors' sales in each market segment.

Keywords :

Marketing; Attraction model; Information entropy; Probabilistic allocation

Faculty of Economics and Political Science

International Publications Awards
Cairo University

Name : Dr . Abdel-Naser Saad Abd-Rabou

Dep. : Statistics

Title : A New Change-Point Rank Tests

Abd-Elnaser S. Abd-Rabou and Ahmed M. Gad

Journal : Data Science

ISSN : 1680-743X **Impact Factor :**

Abstract :

A new rank-based test statistics are proposed for the problem of a possible change in the distribution of independent observations. We extend the two-sample test statistic of Damico (2004) to the change point setup. The finite sample critical values of the proposed tests is estimated. We also conduct a Monte Carlo simulation to compare the powers of the new tests with their competitors. Using the Nile data of Cobb (1978), we demonstrate the applicability of the new tests.

Keywords :

Brownian Bridge Process; Change Point Problem; Damico's test; Monte Carlo.

International Publications Awards
Cairo University

Name : **Prof . Afaf Mahmoud Mady**

Dep. : **Statistics**

Title : **Effect of Delayed Observations on Fixed Design for Exponential Distribution**

Afaf M. Mady

Journal : **Applied Mathematical Sciences**

ISSN : 1312-885X **Impact Factor :**

Abstract :

Langenberg and Srinivasan (1981) proposed two procedures for the choice between two medical treatments. They assumed that there is a time lag between the administration of the treatments and the availability of the responses. The two procedures are suggested for dealing with patients who arrive during the waiting period, caused by the lag, between the trial and treatment stages of the model . They assumed that the responses to the treatments are normally distributed with unknown means and a common known variance . This model is modified by considering the survival time resulting in using the treatments are exponentially distributed. The relative performanceof the procedures in the Bayesian framework is discussed.

Keywords :

Delay Phase; Bayesian Approach; Decision Theory.

International Publications Awards
Cairo University

Name : **Prof . Afaf Mahmoud Mady**

Dep. : **Statistics**

Title : **Sequential Design for Comparing Two Poisson Distributions with Delayed Observations**

Afaf M. Mady

Journal : **Applied Mathematical Sciences**

ISSN : 1312-885X **Impact Factor :**

Abstract :

Given two Poisson populations with unknown means; it is required to select N units in three phases. Colton (1963) assumed that the cost of sampling is equal to the cost of an incorrect choice for half of the sample size. In this paper Colton's decision procedure is used to determine a sequential method of sampling when the choice is between two Poisson distributions, the standard performance being determined by the mean. This model is modified by considering delayed observations. This modification leads to major changes in the results. Minimax and maximin approaches are used for determining the optimal position of the boundaries of a sequential experiment.

Keywords :

Decision Theory; Delayed Observations; Minimax Approach; Maximin Approach.

International Publications Awards
Cairo University

Name : **Prof . Ali Ahmed Mohamed Ismail**

Dep. : **Statistics**

Title : **Estimation and Optimal Design in Step-Stress Partially Accelerated Life Test Plans for Pareto Distribution of the Second Kind with Type-II Censoring**

Abdalla A. Abdel-Ghaly, Eman H. El-Khodary and Ali A. Ismail

Journal : **Interstat**

ISSN : 1941-689X **Impact Factor :** 0.38

Abstract :

This paper considers simple time-step-stress Partially Accelerated Life Testing (PALT). The lifetimes of test items are assumed to follow a two-parameter Pareto lifetime distribution of the second kind. The experiment is subject to type-II censoring.Maximum likelihood estimates (MLE) of PALT model parameters are obtained. Also, confidence interval estimation of the parameters is presented. Moreover, optimum plans for simple time-step-stress PALT are developed. Such plans minimize the generalized asymptotic variance (GAV) of the MLE of the model parameters. For illustration, numerical examples are presented.

Keywords :

Reliability; Pareto distribution; partial Acceleration; Stress Level; Maximum Likelihood Estimation; Fisher Information Matrix; Optimal Design; Simple time-step stress tests; Type-II Censoring.

International Publications Awards
Cairo University

Name : **Prof . Ali Ahmed Mohamed Ismail**

Dep. : **Statistics**

Title : **Estimation and Optimum Constant-Stress Partially Accelerated Life Test Plans for Pareto Distribution of the Second Kind with Type-I Censoring**

Abdalla A. Abdel-Ghaly, Eman H. El-Khodary and Ali A. Ismail

Journal : **Interstat**

ISSN : 1941-689X **Impact Factor :** 0.38

Abstract :

This paper considers the case of Constant-Stress Partially Accelerated Life Testing (CSPALT) when two stress levels are involved under type-I censoring. The lifetimes of test items are assumed to follow a two-parameter Pareto lifetime distribution. Maximum Likelihood (ML) method is used to estimate the parameters of CSPALT model. Confidence intervals for the model parameters are constructed. Optimum CSPALT plans, that determine the best choice of the proportion of test units allocated to each stress, are developed. Such optimum test plans minimize the Generalized Asymptotic Variance (GAV) of the ML estimators of the model parameters. For illustration, numerical examples are presented.

Keywords :

Reliability; Pareto distribution; Partial acceleration; Constant-stress; Maximum likelihood estimation; Fisher information matrix; Optimum test plans; Type-I censoring.

International Publications Awards
Cairo University

Name : Dr . Amany Masod Al-Heddiny

Dep. : Political Science

Title : **Asian Labour Immigrants in Gulf States: Political and Social Dimensions**

Amany Masod

Journal : **Institute of Social Studies The Netherlands**

ISSN : **Impact Factor :**

Abstract :

Labour migration" represents an integral part of the human development process in the Arab world in general and the Gulf region in particular. The movement of migration in the third world generally and the labour migration in particular is a good example of the gap between the ideal theoretical approaches and how these approaches are applied on ground, regardless of the definitions of immigration or even its types, the labor migration to the Gulf region remains uncontrolled with a rigid theoretical framework.The paper discusses the political dimensions of the Asian labour in the Gulf States through answering the following questions

1-What is the uniqueness of the employment after the Gulf crisis?

2- Do what is applied on Arab / Arab relations in the movement of labour migration can be applied to the Gulf / Asian relations?

3-Does this employment represent a threat to the cultural / social pattern of the Gulf or the economic capacity of its existence and the Gulf job market excels its cultural and political repercussions?

To deal with these above questions, the paper is divided into three parts

1- Characteristics of the Asian labor in the Gulf States

2- The political, cultural, social and economic repercussions on the Gulf States

3- Impact of migration on the variable of Arab / Asian relations.

Keywords :

Migration ; Labour Migration; Political Dimensions; Social Dimensions; Economic Dimensions; Asian Migration; Gulf Cooperation Council; United Arab Emirates; Qatar; Bahrain And Kuwait; Economic Repercussions; Identity; Religious Conflicts; Citizenship-Mutual Dependence; Political Relations; Indian Employment

Name : **Prof . Gouda Abdel-Khalek El-Sayed**

Dep. : **Economics**

Title : **The Impact of China on the Middle East**

Gouda Abdel-Khalek and Karima Korayem Al-Azhar

Journal : **Developing Societies**

ISSN : 0169-196X **Impact Factor :**

Abstract :

This article assesses the impact of the fast economic growth and expansion of China on the Middle East. It examines the evolution of the profile of the Middle East during 1995-2004 in terms of Gross Domestic Product (GDP) growth, energy-resources and potential, commodity structure of the foreign trade of the Middle East, its main trade partners and China's role in the international trade of the region. The importance of the Middle East for China's economy from 1995 to 2004 is dis¬cussed, including trade in goods and services, Foreign Direct Investment (FDI) and supplies of energy and raw materials. Trade competition and/or collaboration between the Middle East and China, especially since the accession of China to the World Trade Organization (WTO), are also considered. Finally, China's impact on the Middle East is analysed by looking into trade, capital flows, labour flows, energy and raw materials and competition in the domestic and international markets with respect to goods and services. Indirect effects of China as a global player on the Middle East may also play a role, mainly through the big player in the Middle East: the United States.

Keywords :

Middle East; China; Foreign Trade; Oil; Raw Materials

International Publications Awards
Cairo University

Name : **Prof . Hasanain Tawfiq Ibrahim**

Dep. : **Political Science**

Title : **Internal Political Developments in the GCC States: An Overview**

Hasanain Tawfiq Ibrahim

Journal : **Gulf Research Center**

ISSN : **Impact Factor :**

Abstract :

This chapter provides an overview of the most salient internal political developments that occurred in the GCC states in 2006, with an outlook for potential developments during 2007. The issue of political succession as well as cabinet reshuffles and changes in some of the GCC governments, municipal and parliamentary elections and their impact on the overall process of political development in the GCC states are discussed. Among other issues detailed are the important constitutional and legal developments in the GCC states during 2006. These include the system of pledge of loyalty to the king in Saudi Arabia, a major step towards political and institutional reform in the Kingdom. The analysis covers the performance of the legislative bodies in the GCC states and the nature of the relationship between the legislative and executive institutions. In this context, the roles of the Kuwaiti parliament and the House of Representatives in Bahrain have been evaluated. Collective protests emerged as an important phenomenon in some GCC states and were used by the opposition and civic groups to raise demands or express dissatisfaction. The chapter presents an account of the human rights situation in the GCC states and details some of the measures taken by them to protect the rights of foreign labor and combat issues such as human trafficking.

International Publications Awards
Cairo University

Name : **Prof . Hassan Hussein Mohamed Zaki**

Dep. : **Statistics**

Title : **Assessing the quality of reproductive health services in Egypt via exit interviews**

Hassan H.M. Zaky, Hind A.S. Khattab and Dina Galal

Journal : **Matern Child Health**

ISSN : 1092-7875 **Impact Factor :**

Abstract :

Background: This study assesses the quality of reproductive health services using client satisfaction exit interviews among three groups of primary health care units run by the Ministry of Health and Population of Egypt. Each group applied a different model of intervention. The Ministry will use the results in assessing its reproductive health component in the health sector reform program, and benefits from the strengths of other models of intervention. Methods: The sample was selected in two stages. First, a stratified random sampling procedure was used to select the health units. Then the sample of female clients in each health unit was selected using the systematic random approach, whereby one in every two women visiting the unit was approached. All women in the sample coming for reproductive health services were included in the analysis. Results: The results showed that reproductive health beneficiaries at the units implementing the new health sector reform program were more satisfied with the quality of services. Still there were various areas where clients showed significant dissatisfaction, such as waiting time, interior furnishings, cleanliness of the units and consultation time. The study showed that the staff of these units did not provide a conductive social environment as other interventions did. A significant proportion of women expressed their intention to go to private physicians owing to their flexible working hours and variety specializations. Conclusion: Beneficiaries were generally more satisfied with the quality of health services after attending the reformed units than the other types of units, but the generalization did not fully apply. Areas of weakness are identified.

Keywords :

Reproductive Health Interventions; Quality of Care; Assessment; Exit Interview; Health Sector Reform Program; Egypt.

International Publications Awards
Cairo University

Name : **Prof . Laila Othman EL-Zeini**

Dep. : **Statistics**

Title : **the Estimation of Unwanted Fertility**

John B. Casterline and Laila O. EL-Zeini

Journal : **Demography**

ISSN : 0070-3370 **Impact Factor :**

Abstract :

The estimation of unwanted fertility is a major objective of demographic surveys, including DHS surveys conducted in Asia, Africa, and Latin America. Levels and trends in unwanted fertility are important input to the formulation of population policy and the evaluation of family planning programs. Yet existing methods for estimating unwanted fertility are known to be defective, among other reasons because they rely on subjective data whose validity and reliability are questionable. In this article, we propose a new estimator of unwanted fertility—the "aggregate prospective estimator"—so-named because it depends on the stated preference for another child at the time of the survey, the fertility-desires item consistently shown to possess the highest validity and reliability. Under reasonable assumptions, the aggregate prospective estimator produces less biased estimates of unwanted fertility than the most widely used existing methods. The new estimator has the limitation of generating only aggregate-level estimates, but such estimates are the primary data for policy formulation and program evaluation. The new estimator is presented in this article, along with an evaluation of its underlying assumptions and its sensitivity to several sources of error. In an illustrative application to recent DHS data from six countries, the new estimator yields substantially higher estimates of unwanted fertility than existing methods in all six countries.

Keywords :

Fertility ; Unwanted Fertility ; Unwanted Births ; Fertility Measurements ; Fertility Preference; Family Planning ; Demographic and Health Surveys ; Indirect Estimates; Response Errors

International Publications Awards
Cairo University

Name : **Prof . Mahmoud Al-Saed Mahmoud**

Dep. : **Statistics**

Title : **A Change Point Method for Linear Profile Data**

Mahmoud A. Mahmoud, Peter A. Parker, William H. Woodall and Douglas M. Hawkins

Journal : **Quality and Reliability Engineering International**

ISSN : 0748-8017 **Impact Factor :** 0.508

Abstract :

We propose a change point approach based on the segmented regression technique for testing the constancy of the regression parameters in a linear profile data set. Each sample collected over time in the historical data set consists of several bivariate observations for which a simple linear regression model is appropriate. The change point approach is based on the likelihood ratio test for a change in one or more regression parameters. We compare the performance of this method to that of the most effective Phase I linear profile control chart approaches using a simulation study. The advantages of the change point method over the existing methods are greatly improved detection of sustained step changes in the process parameters and improved diagnostic tools to determine the sources of profile variation and the location(s) of the change point(s). Also, we give an approximation for appropriate thresholds for the test statistic. The use of the change point method is demonstrated using a data set from a calibration application at the National Aeronautics and Space Administration.

Keywords :

Calibration; Functional Data; Likelihood Ratio; Panel Data; Segmented Regression; Simple Linear Regression; Statistical Process Control

International Publications Awards
Cairo University

Name : **Prof . Mona Farid Badran**

Dep. : **Economics**

Title : **What Determines Broadband Uptake in Emerging Countries? An Empirical Study**

Mona Farid Badran

Journal : **Itu Information Document**

ISSN : **Impact Factor :**

Abstract :

Before recent technological developments in telecom the use of available fixed line was limited to voice telecommunication only. At present the high fTequencies on the subscriber line were used for high speed internet 'access. This Internet access technology is generally referred to as broadband. A popular example is the ADSL, the Asymmetric Digital Subscriber line for broadband Internet access. Econometric studies performed to evaluate the uptake of broad band have focused on developed economies like USA and OECD countries. However, emerging economies are playing an increasing role in the global economy. These countries are neither developed or least developed countries. They are a heterogeneous group of countries that have certain characteristics in common. Out of 22 emerging economies used in the sample for this study, 15 economies are among the top 75 countries for broadband penetration per 100 inhabitants. I Recognizing the importance to transform their economies, these countries have adopted policies to transform their economies fTom traditional to knowledge based economies. Broadband uptake was recognized by economists and policy makers as the main vehicle to achieve knowledge based economy. The purpose of this paper is to determine the factors or indicators that impact broadband penetration in emerging countries, and to provide policy recommendations to increase broad band uptake in these economies.

Keywords :

Emerging Economies; Broadband Penetration; Panel Data,Flxed Effects; Random Effects.

International Publications Awards
Cairo University

Name : **Prof . Tarek Abdel-Fattah Moursi**

Dep. : **Economics**

Title : **Effect of Some Recent Changes in Egyptian Monetary Policy: Measurement and Evaluation**

Tarek Abdelfattah Moursi, Mai El Mossallamy and Enas Zakareya

Journal : **The Middle East Business and Economic Review**

ISSN : **Impact Factor :**

Abstract :

The paper examines the implications of salient developments in the structme of monetary policy on the Egyptian economy during the period 1990-2006. The analysis is based on a set of models that measure the stance of monetary policy and evaluate the responses of key policy and non-policy variables to policy shocks. We show that recently monetary policy shocks virtually had no real effect on output. Moreover, we argue in favor of implementing the constrained discretion framework as a basis for monetary policymaking in Egypt. That framework is consistent with the inflation-targeting approach, which the Central Bank of Egypt (CBE) is currently considering to adopt. Employing an estimated interest mte targeting rule, historical and counterfactual policy simulations indicate that during 2001-2006, the CBE has given precedence to reducing the interest mte variance rather than to the stabilization of inflation though simulation scenarios suggest that it would have been possible to stabilize inflation via policy intervention measures.

International Publications Awards
Cairo University

Name : Dr . Zeinab Hafez Amin

Dep. : Statistics

Title : **Tests for the Validity of the Assumption that the Underlying Distribution of Life is Pareto**

Zeinab H. Amin

Journal : Applied Statistics

ISSN : **Impact Factor :**

Abstract :

This article considers the problem of testing the validity of the assumption that the underlying distribution of life is Pareto. For complete and censored samples, the relationship between the Pareto and the exponential distributions could be of vital importance to test for the validity of this assumption. For grouped uncensored data the classical Pearson $\chi 2$ test based on the multinomial model can be used. Attention is confined in this article to handle grouped data with withdrawals within intervals. Graphical as well as analytical procedures will be presented. Maximum likelihood estimators for the parameters of the Pareto distribution based on grouped data will be derived.

Keywords :

Goodness of Fit Tests; Pareto Distribution; Grouped Data; Types I and II Censoring; Hazard Rate; Maximum Likelihood Estimator; Likelihood Ratio Statistic

Faculty of Commerce

International Publications Awards
Cairo University

Name : Dr . Randa Ali Hamdy

Dep. : Business Administration

Title : An Exploration of Ethical Decision-Making Processes in the United States and Egypt

Ramda Hamdy , James W. Westerman and Hassan R. Hassab Elnaby

Journal : Business Ethics

ISSN : **Impact Factor :**

Abstract :

In this comparative survey of 191 Egyptian and 92 U.S. executives, we explore the relationship between national culture and ethical decision-making within the context of business. Using Reidenbach and Robin's (1988) multi-criteria ethics instrument, we examine how differences on two of Hofstede's national culturedimensions, individualism/collectivism, and power distance, are related to the manner in which business practitioners make ethical decisions. Egypt and the U.S. provide an interesting comparison because of the extreme differences in their economies and related busi- ness development. Our results indicate that respondents from the U.S, individualistic and low in power distance, were likely to view the decision making outcome in ethics scenarios as more unethical than the more collec- tivistic and high power distance Egyptians, when applying ethical criteria based on justice, utilitarianism, relativism, and (contrary to our predictions) egoism. However, we also found that both Egyptians and Americans rely on justice, utilitarianism, and relativism in predicting their intentions to behave ethically, and that Americans sub- stitute egoism for justice, when the behavioral intentions of peers are examined.

Keywords :

Egypt; Justice; Ethics; National Culture; U.S; Relativism; Egoism and Utilitarianism; Intention to Behave

International Publications Awards
Cairo University

Name : Dr . Tariq Hussien Ismail

Dep. : Accounting

Title : **Performance Evaluation Measures in the Private Sector: Egyptian Practice**

Tariq H. Ismail

Journal : **Managerial Auditing Journal**

ISSN : **Impact Factor :**

Abstract :

Purpose: This study aims to examine performance evaluation measures across private sector companies in an Egyptian context and pinpoints obstacles that may limit the adoption of the balanced scorecard (BSC). Design/methodology/approach – Uses a questionnaire that was mailed to a sample of 150 companies listed in the Egyptian stock exchange market. The analysis is directed at determining managers' perceptions of performance evaluation measures within the Egyptian private sector. Descriptive statistics, frequency of use of companies' practices and possible relationships between variables provide the basis for discussion. Findings – Companies rely on both financial and non-financial measures of performance evaluation. The profit margin, as a financial measure, is also the most commonly used performance measure. Customer satisfaction is the most commonly used non-financial measure of performance evaluation. The BSC has wide spread use in the Egyptian companies surveyed, but the level of use of multi-dimensional indicators is significantly low. The survey provides considerable insight into obstacles inhibiting the adoption of the BSC. The most significant obstacle is the inadequacy of implemented information systems. Research limitations/implication – Survey results restrict generalization, as the sampling design cannot be claimed to represent all Egyptian companies. Also a relatively low response rates must be taken into account. Originality/value – Provides an insight into performance evaluation practices in the private sector in a developing country.

Keywords :

Management Accounting; Performance Evaluation; Balanced Scorecard (BSC); Egyptian Private Sector; Medium Enterprises

Faculty of Arts

International Publications Awards
Cairo University

Name : **Prof . Adel Amin Mahmoud Saleh**

Dep. : **Japanese Language and Literature**

Title : **The Constituion of the National Langauge Academy in Japan: As a Model of Language Reform**

Adel Amin M.Saleh

Journal : **International Symposium in Egypt**

ISSN : 0915-2822 **Impact Factor :**

Abstract :

This research is one of a series of researches undertaken by the author concerning the Model of Japanese language reform. The language reform process referred to by the author as the trials of finding a remedy for the "Spectro-glossia" phenomenon that Japan faced and suffered from, till the end of the 19th century. Consequently it therefore differs from the "vulgar reform movement" and shows similarity between the Arab world and Japan in the existence of this phenomenon.

This paper rests on the governmental constitution of the "Language Investigation committee (1902)"; that was the start of the National Japanese language academy, which came 30 years later, marking the evolution of the "standard language" that was implemented by the government as a national language at the beginnings of the 20th century.

I will argue the Invention of, what is known by ”Koku-go (Japanese language nationalism)” through three criteria:

1-The linguistic, social and political background until the constitution of the Language Investigation committee.

2- Drawing an ideological relationship between “Koku-go (= tha national language), the people and the imperial system, through the visions of the” language Investigation committee” members.

3- reasoning the choice of the Tokyo’s dialect to become the unified national language.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mohamed Fathy Mostafa**

Dep. : **Japanese Language and Literature**

Title : **The "After War Phenomena" of the Japanese Literature after the War: Has It Really Come to an End ?**

Ahmed Mohamed Fathy Mostafa

Journal : **International Symposium**

ISSN : **Impact Factor :**

Abstract :

When we consider past theses concerning criticism and arguments about the theme of "Japanese Literature After the War," we realize the necessity to deeply reconsider the meaning of the term "After War" from the point of view of Japanese history, while keeping in mind the whole story surrounding the background and formation of this term. In my own opinion, this term suggests a link with the meaning of what may be called "the War Defeat Syndrome." In the Japanese Academic community there is a common notion that the "After War Phenomena has vanished from the Japanese novel. I doubt that Japan has already overcome what may be called "the War Defeat Syndrome." We may think that when time passes and when a new generation comes, memories of the "Past" fade and die little by little. But I think that as time passes we may find ourselves facing that past in our way at a time and a place when and where we did not expect. This is exactly the case of Japan now, 61 years after the defeat in the war. Shadows of the past are still waving there between Japan and its Asian neighbors like South Korea and China and even North Korea. Shadows of the past are still there in Okinawa, as well. Since the past is still alive we can not declare an end to "Japanese Literature After the War".

Name : **Prof . Feisal Abdel-Kader Yunis**

Dep. : **Psychology**

Title : **Psychometric Properties of the Child Behavior Checklist/2-3 in an Arab Population.**

Feisal Yunis, Valsamma Eapen, Taoufik Zoubeidi and Saeed Yousef

Journal : **Psychological Report**

ISSN : 0033-2941 **Impact Factor :**

Abstract :

Child Behavior Checklist 2-3 is a parents' report questionnaire whose psychometric properties are known in the Western setting, but no studies have investigated this in an Arabic culture. In this study, the psychometric properties of the Arabic translation were studied using a sample of 694 children age 3 yr., ascertained as part of a community-based epidemiological study in the United Arab Emirates. The item-total correlations for items were satisfactory, ranging from .16 to .58. Cronbach alpha values for reliability ranged from .70 to .88 for the subscales and .93 for the Total score. The test-retest reliability coefficient for the Total score was .83. The validity was also high as 94.1% of those who scored above the cut-off point were classified correctly by a blind clinical interview. The results suggest that Child Behavior Checklist 2-3 is a reliable and valid checklist for use in the Arabic culture.

International Publications Awards
Cairo University

Name : **Prof . Feisal Abdel-Kader Yunis**

Dep. : **Psychology**

Title : **Prevalence of Pervasive Developmental Disorders in Preschool Children in the UAE**

Valsamma Eapena, Abdul Azim Mabroukb, Taoufik Zoubeidic and Feisal Yunisd

Journal : **Tropical Pediatrics**

ISSN : 0142-6338 **Impact Factor :**

Abstract :

Available evidence from the literature suggests that the prevalence of autistic disorder may be on the rise world wide, but no prevalence studies have been carried out till date in the Arabian Gulf region. A representative random sample of 694 three-year-old United Arab Emirates national children was evaluated in a two-stage study in the community. In the first stage, using Autism Screening Questionnaire, 58 per 10 000 children were noted to have autistic features. In the second stage using clinical interview, the weighted prevalence was estimated to be 29 per 10 000 for a DSM-IV diagnosis of pervasive developmental disorder (PDD). However, none of these children had been diagnosed prior to the study. Presence of autistic features was associated with male gender, presence of behavioural problems and a family history of developmental delay. The rate of PDD observed in the UAE is comparable with that reported from western countries. However, the lack of recognition of these disorders suggests the need for a comprehensive screening program, as early diagnosis can open the door for early intervention which in turn may improve the prognosis.

International Publications Awards
Cairo University

Name : Dr . Manal Mohamed Khedr

Dep. : French Language and Literature

Title : La Bibliothèque d'Alexandrie, Symbole de Dialogue Dans Les Noces de la Nymphe des Bibliothèques

Manal Khedr

Journal : Oriental and African Studies

ISSN : **Impact Factor :**

Abstract :

Les Noces de la Nymphe des Bibliothèques est une pièce de théâtre qui conjugue délibérément l'Histoire et la Littérature pour concrétiser le mythe de l'ancienne Bibliothèque d'Alexandrie. Elle dépasse le rôle de l'ancienne bibliothèque pour la sauvegarde du patrimoine grec et insiste sur sa véritable originalité, c'est-à-dire la "fabrication" d'un nouveau modèle de travail à l'échelle mondiale, d'une autre mentalité: les scientifiques alexandrins avaient une conscience aiguë de l'historicité de leur savoir, de leurs ancêtres et prédécesseurs comme du temps évolutif. Au-delà de la singularité des œuvres et des talents, il y a une dimension collective du travail intellectuel, où chaque auteur apportera ses propres améliorations, ses corrections, ses prolongements à l'œuvre d'un prédécesseur, qu'il soit géographe, philologue ou historien. C'est un dialogue ininterrompu, élaboré dans le sens de la continuité et de l'ajout, un dialogue proprement alexandrin. Les Noces de la Nymphe des Bibliothèques soulève ainsi les questions culturelles suscitées par la BA, sous forme de débat philosophique dont les plus pertinentes sont:Dans le parcours de la Civilisation Humaine, l'apport unilatéral n'existe pas. Il faut fouiller dans les origines. C'est un parcours éternel où chaque civilisation a apporté sa contribution. Dans cet ensemble, l'apport d'Alexandrie fut incontestablement considérable. C'est une ville palimpseste, où toutes les étapes de l'histoire ont laissé leur empreinte, condensant la mémoire écrite de l'humanité et irriguant les cultures de l'Orient byzantin, de l'Islam médiéval, de l'Occident latin. Grâce à la possibilité (ou le choix) de dialoguer, les Alexandrins ont joué un rôle de premier rang dans l'Histoire du monde depuis l'Antiquité jusqu'à nos jours.

International Publications Awards
Cairo University

Name : Dr . Mona Rashad Noueshi

Dep. : German Language and Literature

Title : **Feste Wortverbindungen im DaF Unterricht fuer aegyptische Studenten. Ein sprachliches Hindernis der Hilfe? Einige Ueberlegungen sur Phraseodidaktik**

Mona Noueshi

Journal : Les Expression Figees en Didactique de Langues Etrangeres

ISSN : **Impact Factor :**

Abstract :

It is already indisputable for a long time that we must live in our environment with feste Wortverbindungen (proverbs and idiomatic expressions) and that also the purpose of the foreign linguistic lessons is not exterminating feste Wortverbindungen (or stehende Redewendungen). The fact that in different texts, feste Wportverbindungen are to be found, gives them a meaning in the language use (slogan) and therefore also in the lessons German as Foreign Language. Who pursues today e.g. a german newspaper or a story, a talk show on T.V. or radio, is confronted also with feste Wortverbindungen. Thus it must be assumed from the fact that it is frequent that stehende Redewendungen are treated in the lessons German as foreign language. This could prove for German learners problems, at which we look closer in this contribution. The search for answers to the following questions forms the core of the present contribution : Is it possible to learn and to understand in the lessons of German as Foreign Language stehende Redewendungen?; Which problems form stehende Redewendungen while learning the German language?; How can one appropriate easily stehende Redewendungen in the German Lesson ? These questions were answered through observations and experiences. Results of series of experiments should be introduced in this contribution, which the author has carried out at an Egyptian University (October University, Faculty of Education).

Keywords :

Methodology; Didactics; Phraseology; German as Foreign Language

International Publications Awards
Cairo University

Name : **Prof . Yomna Tarif El-Kholy**

Dep. : **Philosophy**

Title : **The Beginning of the Philosophy of Science in Japan and in the Arab World: A Comparative Approach**

Yomna T. El-Kholy

Journal : **International Symposium**

ISSN : 0915-2822 **Impact Factor :**

Abstract :

The topic of this paper is to track the beginning of the Japanese philosophy of science. Its commencement is simultaneous with the beginning of Japan's relation to philosophy itself. It was definitely in the year 1862 inclining towards English empiricism, rational materialism and positivism, which are essential background to philosophy of science. Meiji Japan was eager to acquaint modernization, assuming that modern science is the champion. In Taishô Japan philosophy matured. Kyoto School emerged to introduce creative system of philosophy including both the Japanese tradition and western philosophy. One of its prime targets is to welcome mathematics and modern science in the Japanese environment. Hence, it interlocked philosophy of science. The first magnet of the school, Nishida Kitarô, did much in this field through subjective idealism. The Second magnet Tanabe Hajime is the founder of the real Japanese philosophy of science. Japanese Marxists also has a contribution. I illustrated the German influence upon Kyoto School and Japanese philosophy as a whole until the end of the World War II. Then I compared this endeavor with the General professional stream of philosophy of science, and with a related contribution by Fritjof Capra. Finally, it is to compare this Japanese beginning with the beginning of philosophy of science in Arab culture to show significant similarities and dissimilarities. This comparison serves to display the problem of tradition/modernization in these two cultures.

Keywords :

Philosophy of Science; English Empiricism; Positivism; German Idealism; Nishi Amane; Kyoto School; Absolute Nothingness; Nishida; Tanabe; Arab Modern Renaissance; Farah Anton; Tradition/modernization

Faculty of Archaeology

International Publications Awards
Cairo University

Name : Dr . Ramadan Awad Ramadan Abd-Alla

Dep. : Restoration Patching

Title : Devitrification Behaviour of Corroded Glass: Four Cases Study

Ramadan Abd-Alla

Journal : Mediterranean Archaeology and Archaeometry

ISSN : 1108-9628 **Impact Factor :**

Abstract :

This paper focuses on the devitrification behaviour and recrystallization mechanism of archaeological glass. It also aims to reveal the fact concerning this phenomenon as a deterioration process associated with glass corrosion. Many archaeological glasses attributed and dated to the early Islamic period in Egypt were collected and analyzed using XRD spectroscopy technique to identify the mineralogical composition and determine the crystalline phases present. A preliminary study by analytical scanning electron microscopy (SEM&EDX) allowed characterization of the elemental chemical composition of the underlying glasses and the neocrystallisation developed on their surfaces. Furthermore, the compositional phases and glass texture were also examined. According to the confirmed results obtained for four glasses, it can be concluded that the archaeological glass can be devitrified or partially recrystallize due to the corrosion process addition to the thermal effects. Many separated crystalline phases such as quartz, calcite, tosudite, jacopsite and calcium silicate were detected in the glass samples. This phenomenon considered one of the most dangerous deterioration aspects of corroded glass. So understanding it will assists the glass conservators in treating such corroded glass.

Keywords :

Glassy state; Recrystallization; Decomposition; Crystalline phases; Glass corrosion.

Name : **Dr . Ramadan Awad Ramadan Abd-Alla**

Dep. : **Restoration Patching**

Title : **Stabilization and Treatment of Corroded Glass Objects Displayed in the Museum of Jordanian Heritage/Jordan**

Ramadan Abd-Alla

Journal : **Mediterranean Archaeology and Archaeometry**

ISSN : 1108-9628 **Impact Factor :**

Abstract :

A great collection of glass objects of different typology and colours has been displayed in the museum of Jordanian heritage, Yarmouk University in Jordan since 1988. Four glasses of this collection represent a special case; they appear to be the most decayed and completely corroded objects. As proved by EDX analysis, the multi corrosion layers were found to be completely decomposed. SEM examination shows the outer crusts seem to be inhomogeneous pitted, curviplanar, surface-planar and highly fractured forms. Furthermore, backscattered electron images revealed the inner surfaces appear to be altered and lose its glassy nature. The treatment strategy of these objects depends firstly on stabilizing the corrosion process and the expected devitrification chemically, through applying chemical inhibitors that have ability to arrest the continuity of corrosion reactions and prevent further damage of the original glass. Second, by consolidation of both the corroded layers and their underlying glass core, to stabilize them physically. A compatible preventive conservation plane that recommended for displaying the whole glass collection in the museum is established.

Keywords :

Glass corrosion; Examination and analysis; Active stabilization; Consolidation; Preventive conservation

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International Publications Awards
Cairo University

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Faculty of Economics and Political Science

International Publications Awards
Cairo University

Name : Dr . Abdel-Naser Saad Abd-Rabou

Dep. : Statistics

Title : A New Change-Point Rank Tests

Abd-Elnaser S. Abd-Rabou and Ahmed M. Gad

Journal : Data Science

ISSN : 1680-743X **Impact Factor :**

Abstract :

A new rank-based test statistics are proposed for the problem of a possible change in the distribution of independent observations. We extend the two-sample test statistic of Damico (2004) to the change point setup. The finite sample critical values of the proposed tests is estimated. We also conduct a Monte Carlo simulation to compare the powers of the new tests with their competitors. Using the Nile data of Cobb (1978), we demonstrate the applicability of the new tests.

Keywords :

Brownian Bridge Process; Change Point Problem; Damico's test; Monte Carlo.

International Publications Awards
Cairo University

Name : **Prof . Afaf Mahmoud Mady**

Dep. : **Statistics**

Title : **Effect of Delayed Observations on Fixed Design for Exponential Distribution**

Afaf M. Mady

Journal : **Applied Mathematical Sciences**

ISSN : 1312-885X **Impact Factor :**

Abstract :

Langenberg and Srinivasan (1981) proposed two procedures for the choice between two medical treatments. They assumed that there is a time lag between the administration of the treatments and the availability of the responses. The two procedures are suggested for dealing with patients who arrive during the waiting period, caused by the lag, between the trial and treatment stages of the model . They assumed that the responses to the treatments are normally distributed with unknown means and a common known variance . This model is modified by considering the survival time resulting in using the treatments are exponentially distributed. The relative performanceof the procedures in the Bayesian framework is discussed.

Keywords :

Delay Phase; Bayesian Approach; Decision Theory.

International Publications Awards
Cairo University

Name : **Prof . Afaf Mahmoud Mady**

Dep. : **Statistics**

Title : **Sequential Design for Comparing Two Poisson Distributions with Delayed Observations**

Afaf M. Mady

Journal : **Applied Mathematical Sciences**

ISSN : 1312-885X **Impact Factor :**

Abstract :

Given two Poisson populations with unknown means; it is required to select N units in three phases. Colton (1963) assumed that the cost of sampling is equal to the cost of an incorrect choice for half of the sample size. In this paper Colton's decision procedure is used to determine a sequential method of sampling when the choice is between two Poisson distributions, the standard performance being determined by the mean. This model is modified by considering delayed observations. This modification leads to major changes in the results. Minimax and maximin approaches are used for determining the optimal position of the boundaries of a sequential experiment.

Keywords :

Decision Theory; Delayed Observations; Minimax Approach; Maximin Approach.

International Publications Awards
Cairo University

Name : **Prof . Ali Ahmed Mohamed Ismail**

Dep. : **Statistics**

Title : **Estimation and Optimal Design in Step-Stress Partially Accelerated Life Test Plans for Pareto Distribution of the Second Kind with Type-II Censoring**

Abdalla A. Abdel-Ghaly, Eman H. El-Khodary and Ali A. Ismail

Journal : **Interstat**

ISSN : 1941-689X **Impact Factor :** 0.38

Abstract :

This paper considers simple time-step-stress Partially Accelerated Life Testing (PALT). The lifetimes of test items are assumed to follow a two-parameter Pareto lifetime distribution of the second kind. The experiment is subject to type-II censoring.Maximum likelihood estimates (MLE) of PALT model parameters are obtained. Also, confidence interval estimation of the parameters is presented. Moreover, optimum plans for simple time-step-stress PALT are developed. Such plans minimize the generalized asymptotic variance (GAV) of the MLE of the model parameters. For illustration, numerical examples are presented.

Keywords :

Reliability; Pareto distribution; partial Acceleration; Stress Level; Maximum Likelihood Estimation; Fisher Information Matrix; Optimal Design; Simple time-step stress tests; Type-II Censoring.

International Publications Awards
Cairo University

Name : **Prof . Ali Ahmed Mohamed Ismail**

Dep. : **Statistics**

Title : **Estimation and Optimum Constant-Stress Partially Accelerated Life Test Plans for Pareto Distribution of the Second Kind with Type-I Censoring**

Abdalla A. Abdel-Ghaly, Eman H. El-Khodary and Ali A. Ismail

Journal : **Interstat**

ISSN : 1941-689X **Impact Factor :** 0.38

Abstract :

This paper considers the case of Constant-Stress Partially Accelerated Life Testing (CSPALT) when two stress levels are involved under type-I censoring. The lifetimes of test items are assumed to follow a two-parameter Pareto lifetime distribution. Maximum Likelihood (ML) method is used to estimate the parameters of CSPALT model. Confidence intervals for the model parameters are constructed. Optimum CSPALT plans, that determine the best choice of the proportion of test units allocated to each stress, are developed. Such optimum test plans minimize the Generalized Asymptotic Variance (GAV) of the ML estimators of the model parameters. For illustration, numerical examples are presented.

Keywords :

Reliability; Pareto distribution; Partial acceleration; Constant-stress; Maximum likelihood estimation; Fisher information matrix; Optimum test plans; Type-I censoring.

International Publications Awards
Cairo University

Name : Dr . Amany Masod Al-Heddiny

Dep. : Political Science

Title : **Asian Labour Immigrants in Gulf States: Political and Social Dimensions**

Amany Masod

Journal : **Institute of Social Studies The Netherlands**

ISSN : **Impact Factor :**

Abstract :

Labour migration" represents an integral part of the human development process in the Arab world in general and the Gulf region in particular. The movement of migration in the third world generally and the labour migration in particular is a good example of the gap between the ideal theoretical approaches and how these approaches are applied on ground, regardless of the definitions of immigration or even its types, the labor migration to the Gulf region remains uncontrolled with a rigid theoretical framework.The paper discusses the political dimensions of the Asian labour in the Gulf States through answering the following questions

1-What is the uniqueness of the employment after the Gulf crisis?

2- Do what is applied on Arab / Arab relations in the movement of labour migration can be applied to the Gulf / Asian relations?

3-Does this employment represent a threat to the cultural / social pattern of the Gulf or the economic capacity of its existence and the Gulf job market excels its cultural and political repercussions?

To deal with these above questions, the paper is divided into three parts

1- Characteristics of the Asian labor in the Gulf States

2- The political, cultural, social and economic repercussions on the Gulf States

3- Impact of migration on the variable of Arab / Asian relations.

Keywords :

Migration ; Labour Migration; Political Dimensions; Social Dimensions; Economic Dimensions; Asian Migration; Gulf Cooperation Council; United Arab Emirates; Qatar; Bahrain And Kuwait; Economic Repercussions; Identity; Religious Conflicts; Citizenship-Mutual Dependence; Political Relations; Indian Employment

Name : **Prof . Gouda Abdel-Khalek El-Sayed**

Dep. : **Economics**

Title : **The Impact of China on the Middle East**

Gouda Abdel-Khalek and Karima Korayem Al-Azhar

Journal : **Developing Societies**

ISSN : 0169-196X **Impact Factor :**

Abstract :

This article assesses the impact of the fast economic growth and expansion of China on the Middle East. It examines the evolution of the profile of the Middle East during 1995-2004 in terms of Gross Domestic Product (GDP) growth, energy-resources and potential, commodity structure of the foreign trade of the Middle East, its main trade partners and China's role in the international trade of the region. The importance of the Middle East for China's economy from 1995 to 2004 is dis¬cussed, including trade in goods and services, Foreign Direct Investment (FDI) and supplies of energy and raw materials. Trade competition and/or collaboration between the Middle East and China, especially since the accession of China to the World Trade Organization (WTO), are also considered. Finally, China's impact on the Middle East is analysed by looking into trade, capital flows, labour flows, energy and raw materials and competition in the domestic and international markets with respect to goods and services. Indirect effects of China as a global player on the Middle East may also play a role, mainly through the big player in the Middle East: the United States.

Keywords :

Middle East; China; Foreign Trade; Oil; Raw Materials

International Publications Awards
Cairo University

Name : **Prof . Hasanain Tawfiq Ibrahim**

Dep. : **Political Science**

Title : **Internal Political Developments in the GCC States: An Overview**

Hasanain Tawfiq Ibrahim

Journal : **Gulf Research Center**

ISSN : **Impact Factor :**

Abstract :

This chapter provides an overview of the most salient internal political developments that occurred in the GCC states in 2006, with an outlook for potential developments during 2007. The issue of political succession as well as cabinet reshuffles and changes in some of the GCC governments, municipal and parliamentary elections and their impact on the overall process of political development in the GCC states are discussed. Among other issues detailed are the important constitutional and legal developments in the GCC states during 2006. These include the system of pledge of loyalty to the king in Saudi Arabia, a major step towards political and institutional reform in the Kingdom. The analysis covers the performance of the legislative bodies in the GCC states and the nature of the relationship between the legislative and executive institutions. In this context, the roles of the Kuwaiti parliament and the House of Representatives in Bahrain have been evaluated. Collective protests emerged as an important phenomenon in some GCC states and were used by the opposition and civic groups to raise demands or express dissatisfaction. The chapter presents an account of the human rights situation in the GCC states and details some of the measures taken by them to protect the rights of foreign labor and combat issues such as human trafficking.

International Publications Awards
Cairo University

Name : **Prof . Hassan Hussein Mohamed Zaki**

Dep. : **Statistics**

Title : **Assessing the quality of reproductive health services in Egypt via exit interviews**

Hassan H.M. Zaky, Hind A.S. Khattab and Dina Galal

Journal : **Matern Child Health**

ISSN : 1092-7875 **Impact Factor :**

Abstract :

Background: This study assesses the quality of reproductive health services using client satisfaction exit interviews among three groups of primary health care units run by the Ministry of Health and Population of Egypt. Each group applied a different model of intervention. The Ministry will use the results in assessing its reproductive health component in the health sector reform program, and benefits from the strengths of other models of intervention. Methods: The sample was selected in two stages. First, a stratified random sampling procedure was used to select the health units. Then the sample of female clients in each health unit was selected using the systematic random approach, whereby one in every two women visiting the unit was approached. All women in the sample coming for reproductive health services were included in the analysis. Results: The results showed that reproductive health beneficiaries at the units implementing the new health sector reform program were more satisfied with the quality of services. Still there were various areas where clients showed significant dissatisfaction, such as waiting time, interior furnishings, cleanliness of the units and consultation time. The study showed that the staff of these units did not provide a conductive social environment as other interventions did. A significant proportion of women expressed their intention to go to private physicians owing to their flexible working hours and variety specializations. Conclusion: Beneficiaries were generally more satisfied with the quality of health services after attending the reformed units than the other types of units, but the generalization did not fully apply. Areas of weakness are identified.

Keywords :

Reproductive Health Interventions; Quality of Care; Assessment; Exit Interview; Health Sector Reform Program; Egypt.

International Publications Awards
Cairo University

Name : **Prof . Laila Othman EL-Zeini**

Dep. : **Statistics**

Title : **the Estimation of Unwanted Fertility**

John B. Casterline and Laila O. EL-Zeini

Journal : **Demography**

ISSN : 0070-3370 **Impact Factor :**

Abstract :

The estimation of unwanted fertility is a major objective of demographic surveys, including DHS surveys conducted in Asia, Africa, and Latin America. Levels and trends in unwanted fertility are important input to the formulation of population policy and the evaluation of family planning programs. Yet existing methods for estimating unwanted fertility are known to be defective, among other reasons because they rely on subjective data whose validity and reliability are questionable. In this article, we propose a new estimator of unwanted fertility—the "aggregate prospective estimator"—so-named because it depends on the stated preference for another child at the time of the survey, the fertility-desires item consistently shown to possess the highest validity and reliability. Under reasonable assumptions, the aggregate prospective estimator produces less biased estimates of unwanted fertility than the most widely used existing methods. The new estimator has the limitation of generating only aggregate-level estimates, but such estimates are the primary data for policy formulation and program evaluation. The new estimator is presented in this article, along with an evaluation of its underlying assumptions and its sensitivity to several sources of error. In an illustrative application to recent DHS data from six countries, the new estimator yields substantially higher estimates of unwanted fertility than existing methods in all six countries.

Keywords :

Fertility ; Unwanted Fertility ; Unwanted Births ; Fertility Measurements ; Fertility Preference; Family Planning ; Demographic and Health Surveys ; Indirect Estimates; Response Errors

International Publications Awards
Cairo University

Name : **Prof . Mahmoud Al-Saed Mahmoud**

Dep. : **Statistics**

Title : **A Change Point Method for Linear Profile Data**

Mahmoud A. Mahmoud, Peter A. Parker, William H. Woodall and Douglas M. Hawkins

Journal : **Quality and Reliability Engineering International**

ISSN : 0748-8017 **Impact Factor :** 0.508

Abstract :

We propose a change point approach based on the segmented regression technique for testing the constancy of the regression parameters in a linear profile data set. Each sample collected over time in the historical data set consists of several bivariate observations for which a simple linear regression model is appropriate. The change point approach is based on the likelihood ratio test for a change in one or more regression parameters. We compare the performance of this method to that of the most effective Phase I linear profile control chart approaches using a simulation study. The advantages of the change point method over the existing methods are greatly improved detection of sustained step changes in the process parameters and improved diagnostic tools to determine the sources of profile variation and the location(s) of the change point(s). Also, we give an approximation for appropriate thresholds for the test statistic. The use of the change point method is demonstrated using a data set from a calibration application at the National Aeronautics and Space Administration.

Keywords :

Calibration; Functional Data; Likelihood Ratio; Panel Data; Segmented Regression; Simple Linear Regression; Statistical Process Control

International Publications Awards
Cairo University

Name : **Prof . Mona Farid Badran**

Dep. : **Economics**

Title : **What Determines Broadband Uptake in Emerging Countries? An Empirical Study**

Mona Farid Badran

Journal : **Itu Information Document**

ISSN : **Impact Factor :**

Abstract :

Before recent technological developments in telecom the use of available fixed line was limited to voice telecommunication only. At present the high fTequencies on the subscriber line were used for high speed internet 'access. This Internet access technology is generally referred to as broadband. A popular example is the ADSL, the Asymmetric Digital Subscriber line for broadband Internet access. Econometric studies performed to evaluate the uptake of broad band have focused on developed economies like USA and OECD countries. However, emerging economies are playing an increasing role in the global economy. These countries are neither developed or least developed countries. They are a heterogeneous group of countries that have certain characteristics in common. Out of 22 emerging economies used in the sample for this study, 15 economies are among the top 75 countries for broadband penetration per 100 inhabitants. I Recognizing the importance to transform their economies, these countries have adopted policies to transform their economies fTom traditional to knowledge based economies. Broadband uptake was recognized by economists and policy makers as the main vehicle to achieve knowledge based economy. The purpose of this paper is to determine the factors or indicators that impact broadband penetration in emerging countries, and to provide policy recommendations to increase broad band uptake in these economies.

Keywords :

Emerging Economies; Broadband Penetration; Panel Data,Flxed Effects; Random Effects.

International Publications Awards
Cairo University

Name : **Prof . Tarek Abdel-Fattah Moursi**

Dep. : **Economics**

Title : **Effect of Some Recent Changes in Egyptian Monetary Policy: Measurement and Evaluation**

Tarek Abdelfattah Moursi, Mai El Mossallamy and Enas Zakareya

Journal : **The Middle East Business and Economic Review**

ISSN : **Impact Factor :**

Abstract :

The paper examines the implications of salient developments in the structme of monetary policy on the Egyptian economy during the period 1990-2006. The analysis is based on a set of models that measure the stance of monetary policy and evaluate the responses of key policy and non-policy variables to policy shocks. We show that recently monetary policy shocks virtually had no real effect on output. Moreover, we argue in favor of implementing the constrained discretion framework as a basis for monetary policymaking in Egypt. That framework is consistent with the inflation-targeting approach, which the Central Bank of Egypt (CBE) is currently considering to adopt. Employing an estimated interest mte targeting rule, historical and counterfactual policy simulations indicate that during 2001-2006, the CBE has given precedence to reducing the interest mte variance rather than to the stabilization of inflation though simulation scenarios suggest that it would have been possible to stabilize inflation via policy intervention measures.

International Publications Awards
Cairo University

Name : Dr . Zeinab Hafez Amin

Dep. : Statistics

Title : **Tests for the Validity of the Assumption that the Underlying Distribution of Life is Pareto**

Zeinab H. Amin

Journal : Applied Statistics

ISSN : **Impact Factor :**

Abstract :

This article considers the problem of testing the validity of the assumption that the underlying distribution of life is Pareto. For complete and censored samples, the relationship between the Pareto and the exponential distributions could be of vital importance to test for the validity of this assumption. For grouped uncensored data the classical Pearson $\chi 2$ test based on the multinomial model can be used. Attention is confined in this article to handle grouped data with withdrawals within intervals. Graphical as well as analytical procedures will be presented. Maximum likelihood estimators for the parameters of the Pareto distribution based on grouped data will be derived.

Keywords :

Goodness of Fit Tests; Pareto Distribution; Grouped Data; Types I and II Censoring; Hazard Rate; Maximum Likelihood Estimator; Likelihood Ratio Statistic

Faculty of Commerce

International Publications Awards
Cairo University

Name : Dr . Randa Ali Hamdy

Dep. : Business Administration

Title : An Exploration of Ethical Decision-Making Processes in the United States and Egypt

Ramda Hamdy , James W. Westerman and Hassan R. Hassab Elnaby

Journal : Business Ethics

ISSN : **Impact Factor :**

Abstract :

In this comparative survey of 191 Egyptian and 92 U.S. executives, we explore the relationship between national culture and ethical decision-making within the context of business. Using Reidenbach and Robin's (1988) multi-criteria ethics instrument, we examine how differences on two of Hofstede's national culturedimensions, individualism/collectivism, and power distance, are related to the manner in which business practitioners make ethical decisions. Egypt and the U.S. provide an interesting comparison because of the extreme differences in their economies and related busi- ness development. Our results indicate that respondents from the U.S, individualistic and low in power distance, were likely to view the decision making outcome in ethics scenarios as more unethical than the more collec- tivistic and high power distance Egyptians, when applying ethical criteria based on justice, utilitarianism, relativism, and (contrary to our predictions) egoism. However, we also found that both Egyptians and Americans rely on justice, utilitarianism, and relativism in predicting their intentions to behave ethically, and that Americans sub- stitute egoism for justice, when the behavioral intentions of peers are examined.

Keywords :

Egypt; Justice; Ethics; National Culture; U.S; Relativism; Egoism and Utilitarianism; Intention to Behave

International Publications Awards
Cairo University

Name : Dr . Tariq Hussien Ismail

Dep. : Accounting

Title : **Performance Evaluation Measures in the Private Sector: Egyptian Practice**

Tariq H. Ismail

Journal : **Managerial Auditing Journal**

ISSN : **Impact Factor :**

Abstract :

Purpose: This study aims to examine performance evaluation measures across private sector companies in an Egyptian context and pinpoints obstacles that may limit the adoption of the balanced scorecard (BSC). Design/methodology/approach – Uses a questionnaire that was mailed to a sample of 150 companies listed in the Egyptian stock exchange market. The analysis is directed at determining managers' perceptions of performance evaluation measures within the Egyptian private sector. Descriptive statistics, frequency of use of companies' practices and possible relationships between variables provide the basis for discussion. Findings – Companies rely on both financial and non-financial measures of performance evaluation. The profit margin, as a financial measure, is also the most commonly used performance measure. Customer satisfaction is the most commonly used non-financial measure of performance evaluation. The BSC has wide spread use in the Egyptian companies surveyed, but the level of use of multi-dimensional indicators is significantly low. The survey provides considerable insight into obstacles inhibiting the adoption of the BSC. The most significant obstacle is the inadequacy of implemented information systems. Research limitations/implication – Survey results restrict generalization, as the sampling design cannot be claimed to represent all Egyptian companies. Also a relatively low response rates must be taken into account. Originality/value – Provides an insight into performance evaluation practices in the private sector in a developing country.

Keywords :

Management Accounting; Performance Evaluation; Balanced Scorecard (BSC); Egyptian Private Sector; Medium Enterprises

Faculty of Arts

International Publications Awards
Cairo University

Name : **Prof . Adel Amin Mahmoud Saleh**

Dep. : **Japanese Language and Literature**

Title : **The Constituion of the National Langauge Academy in Japan: As a Model of Language Reform**

Adel Amin M.Saleh

Journal : **International Symposium in Egypt**

ISSN : 0915-2822 **Impact Factor :**

Abstract :

This research is one of a series of researches undertaken by the author concerning the Model of Japanese language reform. The language reform process referred to by the author as the trials of finding a remedy for the "Spectro-glossia" phenomenon that Japan faced and suffered from, till the end of the 19th century. Consequently it therefore differs from the "vulgar reform movement" and shows similarity between the Arab world and Japan in the existence of this phenomenon.

This paper rests on the governmental constitution of the "Language Investigation committee (1902)"; that was the start of the National Japanese language academy, which came 30 years later, marking the evolution of the "standard language" that was implemented by the government as a national language at the beginnings of the 20th century.

I will argue the Invention of, what is known by ”Koku-go (Japanese language nationalism)” through three criteria:

1-The linguistic, social and political background until the constitution of the Language Investigation committee.

2- Drawing an ideological relationship between “Koku-go (= tha national language), the people and the imperial system, through the visions of the” language Investigation committee” members.

3- reasoning the choice of the Tokyo’s dialect to become the unified national language.

International Publications Awards
Cairo University

Name : **Prof . Ahmed Mohamed Fathy Mostafa**

Dep. : **Japanese Language and Literature**

Title : **The "After War Phenomena" of the Japanese Literature after the War: Has It Really Come to an End ?**

Ahmed Mohamed Fathy Mostafa

Journal : **International Symposium**

ISSN : **Impact Factor :**

Abstract :

When we consider past theses concerning criticism and arguments about the theme of "Japanese Literature After the War," we realize the necessity to deeply reconsider the meaning of the term "After War" from the point of view of Japanese history, while keeping in mind the whole story surrounding the background and formation of this term. In my own opinion, this term suggests a link with the meaning of what may be called "the War Defeat Syndrome." In the Japanese Academic community there is a common notion that the "After War Phenomena has vanished from the Japanese novel. I doubt that Japan has already overcome what may be called "the War Defeat Syndrome." We may think that when time passes and when a new generation comes, memories of the "Past" fade and die little by little. But I think that as time passes we may find ourselves facing that past in our way at a time and a place when and where we did not expect. This is exactly the case of Japan now, 61 years after the defeat in the war. Shadows of the past are still waving there between Japan and its Asian neighbors like South Korea and China and even North Korea. Shadows of the past are still there in Okinawa, as well. Since the past is still alive we can not declare an end to "Japanese Literature After the War".

Name : **Prof . Feisal Abdel-Kader Yunis**

Dep. : **Psychology**

Title : **Psychometric Properties of the Child Behavior Checklist/2-3 in an Arab Population.**

Feisal Yunis, Valsamma Eapen, Taoufik Zoubeidi and Saeed Yousef

Journal : **Psychological Report**

ISSN : 0033-2941 **Impact Factor :**

Abstract :

Child Behavior Checklist 2-3 is a parents' report questionnaire whose psychometric properties are known in the Western setting, but no studies have investigated this in an Arabic culture. In this study, the psychometric properties of the Arabic translation were studied using a sample of 694 children age 3 yr., ascertained as part of a community-based epidemiological study in the United Arab Emirates. The item-total correlations for items were satisfactory, ranging from .16 to .58. Cronbach alpha values for reliability ranged from .70 to .88 for the subscales and .93 for the Total score. The test-retest reliability coefficient for the Total score was .83. The validity was also high as 94.1% of those who scored above the cut-off point were classified correctly by a blind clinical interview. The results suggest that Child Behavior Checklist 2-3 is a reliable and valid checklist for use in the Arabic culture.

International Publications Awards
Cairo University

Name : **Prof . Feisal Abdel-Kader Yunis**

Dep. : **Psychology**

Title : **Prevalence of Pervasive Developmental Disorders in Preschool Children in the UAE**

Valsamma Eapena, Abdul Azim Mabroukb, Taoufik Zoubeidic and Feisal Yunisd

Journal : **Tropical Pediatrics**

ISSN : 0142-6338 **Impact Factor :**

Abstract :

Available evidence from the literature suggests that the prevalence of autistic disorder may be on the rise world wide, but no prevalence studies have been carried out till date in the Arabian Gulf region. A representative random sample of 694 three-year-old United Arab Emirates national children was evaluated in a two-stage study in the community. In the first stage, using Autism Screening Questionnaire, 58 per 10 000 children were noted to have autistic features. In the second stage using clinical interview, the weighted prevalence was estimated to be 29 per 10 000 for a DSM-IV diagnosis of pervasive developmental disorder (PDD). However, none of these children had been diagnosed prior to the study. Presence of autistic features was associated with male gender, presence of behavioural problems and a family history of developmental delay. The rate of PDD observed in the UAE is comparable with that reported from western countries. However, the lack of recognition of these disorders suggests the need for a comprehensive screening program, as early diagnosis can open the door for early intervention which in turn may improve the prognosis.

International Publications Awards
Cairo University

Name : Dr . Manal Mohamed Khedr

Dep. : French Language and Literature

Title : La Bibliothèque d'Alexandrie, Symbole de Dialogue Dans Les Noces de la Nymphe des Bibliothèques

Manal Khedr

Journal : Oriental and African Studies

ISSN : **Impact Factor :**

Abstract :

Les Noces de la Nymphe des Bibliothèques est une pièce de théâtre qui conjugue délibérément l'Histoire et la Littérature pour concrétiser le mythe de l'ancienne Bibliothèque d'Alexandrie. Elle dépasse le rôle de l'ancienne bibliothèque pour la sauvegarde du patrimoine grec et insiste sur sa véritable originalité, c'est-à-dire la "fabrication" d'un nouveau modèle de travail à l'échelle mondiale, d'une autre mentalité: les scientifiques alexandrins avaient une conscience aiguë de l'historicité de leur savoir, de leurs ancêtres et prédécesseurs comme du temps évolutif. Au-delà de la singularité des œuvres et des talents, il y a une dimension collective du travail intellectuel, où chaque auteur apportera ses propres améliorations, ses corrections, ses prolongements à l'œuvre d'un prédécesseur, qu'il soit géographe, philologue ou historien. C'est un dialogue ininterrompu, élaboré dans le sens de la continuité et de l'ajout, un dialogue proprement alexandrin. Les Noces de la Nymphe des Bibliothèques soulève ainsi les questions culturelles suscitées par la BA, sous forme de débat philosophique dont les plus pertinentes sont:Dans le parcours de la Civilisation Humaine, l'apport unilatéral n'existe pas. Il faut fouiller dans les origines. C'est un parcours éternel où chaque civilisation a apporté sa contribution. Dans cet ensemble, l'apport d'Alexandrie fut incontestablement considérable. C'est une ville palimpseste, où toutes les étapes de l'histoire ont laissé leur empreinte, condensant la mémoire écrite de l'humanité et irriguant les cultures de l'Orient byzantin, de l'Islam médiéval, de l'Occident latin. Grâce à la possibilité (ou le choix) de dialoguer, les Alexandrins ont joué un rôle de premier rang dans l'Histoire du monde depuis l'Antiquité jusqu'à nos jours.

International Publications Awards
Cairo University

Name : Dr . Mona Rashad Noueshi

Dep. : German Language and Literature

Title : **Feste Wortverbindungen im DaF Unterricht fuer aegyptische Studenten. Ein sprachliches Hindernis der Hilfe? Einige Ueberlegungen sur Phraseodidaktik**

Mona Noueshi

Journal : Les Expression Figees en Didactique de Langues Etrangeres

ISSN : **Impact Factor :**

Abstract :

It is already indisputable for a long time that we must live in our environment with feste Wortverbindungen (proverbs and idiomatic expressions) and that also the purpose of the foreign linguistic lessons is not exterminating feste Wortverbindungen (or stehende Redewendungen). The fact that in different texts, feste Wportverbindungen are to be found, gives them a meaning in the language use (slogan) and therefore also in the lessons German as Foreign Language. Who pursues today e.g. a german newspaper or a story, a talk show on T.V. or radio, is confronted also with feste Wortverbindungen. Thus it must be assumed from the fact that it is frequent that stehende Redewendungen are treated in the lessons German as foreign language. This could prove for German learners problems, at which we look closer in this contribution. The search for answers to the following questions forms the core of the present contribution : Is it possible to learn and to understand in the lessons of German as Foreign Language stehende Redewendungen?; Which problems form stehende Redewendungen while learning the German language?; How can one appropriate easily stehende Redewendungen in the German Lesson ? These questions were answered through observations and experiences. Results of series of experiments should be introduced in this contribution, which the author has carried out at an Egyptian University (October University, Faculty of Education).

Keywords :

Methodology; Didactics; Phraseology; German as Foreign Language

International Publications Awards
Cairo University

Name : **Prof . Yomna Tarif El-Kholy**

Dep. : **Philosophy**

Title : **The Beginning of the Philosophy of Science in Japan and in the Arab World: A Comparative Approach**

Yomna T. El-Kholy

Journal : **International Symposium**

ISSN : 0915-2822 **Impact Factor :**

Abstract :

The topic of this paper is to track the beginning of the Japanese philosophy of science. Its commencement is simultaneous with the beginning of Japan's relation to philosophy itself. It was definitely in the year 1862 inclining towards English empiricism, rational materialism and positivism, which are essential background to philosophy of science. Meiji Japan was eager to acquaint modernization, assuming that modern science is the champion. In Taishô Japan philosophy matured. Kyoto School emerged to introduce creative system of philosophy including both the Japanese tradition and western philosophy. One of its prime targets is to welcome mathematics and modern science in the Japanese environment. Hence, it interlocked philosophy of science. The first magnet of the school, Nishida Kitarô, did much in this field through subjective idealism. The Second magnet Tanabe Hajime is the founder of the real Japanese philosophy of science. Japanese Marxists also has a contribution. I illustrated the German influence upon Kyoto School and Japanese philosophy as a whole until the end of the World War II. Then I compared this endeavor with the General professional stream of philosophy of science, and with a related contribution by Fritjof Capra. Finally, it is to compare this Japanese beginning with the beginning of philosophy of science in Arab culture to show significant similarities and dissimilarities. This comparison serves to display the problem of tradition/modernization in these two cultures.

Keywords :

Philosophy of Science; English Empiricism; Positivism; German Idealism; Nishi Amane; Kyoto School; Absolute Nothingness; Nishida; Tanabe; Arab Modern Renaissance; Farah Anton; Tradition/modernization

Faculty of Archaeology

International Publications Awards
Cairo University

Name : Dr . Ramadan Awad Ramadan Abd-Alla

Dep. : Restoration Patching

Title : Devitrification Behaviour of Corroded Glass: Four Cases Study

Ramadan Abd-Alla

Journal : Mediterranean Archaeology and Archaeometry

ISSN : 1108-9628 **Impact Factor :**

Abstract :

This paper focuses on the devitrification behaviour and recrystallization mechanism of archaeological glass. It also aims to reveal the fact concerning this phenomenon as a deterioration process associated with glass corrosion. Many archaeological glasses attributed and dated to the early Islamic period in Egypt were collected and analyzed using XRD spectroscopy technique to identify the mineralogical composition and determine the crystalline phases present. A preliminary study by analytical scanning electron microscopy (SEM&EDX) allowed characterization of the elemental chemical composition of the underlying glasses and the neocrystallisation developed on their surfaces. Furthermore, the compositional phases and glass texture were also examined. According to the confirmed results obtained for four glasses, it can be concluded that the archaeological glass can be devitrified or partially recrystallize due to the corrosion process addition to the thermal effects. Many separated crystalline phases such as quartz, calcite, tosudite, jacopsite and calcium silicate were detected in the glass samples. This phenomenon considered one of the most dangerous deterioration aspects of corroded glass. So understanding it will assists the glass conservators in treating such corroded glass.

Keywords :

Glassy state; Recrystallization; Decomposition; Crystalline phases; Glass corrosion.

Name : **Dr . Ramadan Awad Ramadan Abd-Alla**

Dep. : **Restoration Patching**

Title : **Stabilization and Treatment of Corroded Glass Objects Displayed in the Museum of Jordanian Heritage/Jordan**

Ramadan Abd-Alla

Journal : **Mediterranean Archaeology and Archaeometry**

ISSN : 1108-9628 **Impact Factor :**

Abstract :

A great collection of glass objects of different typology and colours has been displayed in the museum of Jordanian heritage, Yarmouk University in Jordan since 1988. Four glasses of this collection represent a special case; they appear to be the most decayed and completely corroded objects. As proved by EDX analysis, the multi corrosion layers were found to be completely decomposed. SEM examination shows the outer crusts seem to be inhomogeneous pitted, curviplanar, surface-planar and highly fractured forms. Furthermore, backscattered electron images revealed the inner surfaces appear to be altered and lose its glassy nature. The treatment strategy of these objects depends firstly on stabilizing the corrosion process and the expected devitrification chemically, through applying chemical inhibitors that have ability to arrest the continuity of corrosion reactions and prevent further damage of the original glass. Second, by consolidation of both the corroded layers and their underlying glass core, to stabilize them physically. A compatible preventive conservation plane that recommended for displaying the whole glass collection in the museum is established.

Keywords :

Glass corrosion; Examination and analysis; Active stabilization; Consolidation; Preventive conservation

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