

**International Publications
Awards
Cairo University**

Issue VI-A

May 2010



Dear colleagues,

We are pleased to introduce this new issue of the international publications of Cairo University. It is a further step of our university, and the distinct contribution, reflecting the scientific ability of staff members, which conforms to international quality standards.

This is the Sixth issue of the international publications of Cairo University staff members during the year 2009.

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

As part of our future plan, we aspire to build on our current success. So in order to keep our rank, in its high level we are compelled to continue on publishing high quality research.

We would like to assure you that the administration will spare no effort to support and reinforce these goals. We congratulate all colleagues who were granted the awards for their international publications of the year 2009 and wish them all the best for their future endeavors.

In this issue, and for the first time, the top 50 eminent authors of Cairo University is added. Their ranking was extracted from both Scopus and Thomson data-bases according to their number of published articles, number of citations and h-index.

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

Prof. Hussein M. Khaled

Prof. Hossam Kamel

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

**President
Cairo university**

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بيانات إحصائية

قائمة بأعلى عدد من الأبحاث المنشورة في الإصدار السادس للنشر العلمي
2009

عدد الأبحاث	Faculty	Name	م
15	Agr	هاني عبد العزيز الشيمي	1
13	Eng	احمد محمد سليمان	2
8	Med	هشام جابر عبد الوهاب العناني	3
11	Vet Med	عبد العاطي مصطفى عبد العاطي	4
10	NCI	عبد الرحمن نبوي ذكرى	5
9	Med	ألفت جميل احمد شاكر	6
9	Med	تيمور مصطفى إبراهيم	7
9	ODM	يحيى احمد مصطفى	8
8	Vet Med	كاميليا محمود عثمان احمد	9
7	Sci	يسرى مصطفى عيسى	10

بيانات إحصائية

IF قائمة بأعلى فى الإصدار السادس للنشر العلمى 2009

Max. If	Faculty	Name	م
10.432	Med	هبة الله محمد نبيل عبد الرازق	1
9.38	Sci	محمد صبرى يوسف	2
8.479	Eng	مجدى عبد العاطى الطويل	3
6.512	Arts	احمد محمد صبحى عبد العزيز	4
6.493	Aggr	عصام محمد عبد المعطى درويش	5
6.325	NCI	مروة وجيه كامل بيومى	6
6.11	Pharm	محمد على على فرج	7
6.11	Agr	هانى عبد العزيز الشيمى	8
6.093	NSL	رحاب محمد حسن أمين	9
5.978	Med	امال محمد البشلاوى	10
5.393	Med	رانى محمد شملول	11
5.393	Med	تيمور مصطفى إبراهيم	12
5.393	Med	إيهاب إسماعيل أمين	13
5.393	Med	اسامة كمال شعير	14
5.362	Pharm	محمد على على فرج	15
5.182	Med	شرين عبد الغفار طه	16

بيانات إحصائية**في الإصدار السادس للنشر العلمي IF2009 قائمة بمجموع**

Sum IF	Faculty	Name	م
37.574	Agr	هاتى عبد العزيز الشيمى	1
25.583	Med	تيمور مصطفى إبراهيم	2
22.927	Vet Med	عبد العاطى مصطفى عبد العاطى	3
22.693	Med	هشام جابر عبد الوهاب العنانى	4
19.624	Med	الفت جميل احمد شاكى	5
19.32	NCI	عبد الرحمن نبوى ذكرى	6
18.021	Pharm	محمد على على فرج	7
16.179	Med	اسامة كمال شعير	8
13.254	Pharm	مجدى على امين	9
12.656	Sci	ندا فاروق احمد عطا	10
11.215	Med	امال محمد البشلاوى	11
11.028	Sci	يسرى مصطفى عيسى	12
10.432	Med	هبه الله محمد نبيل عبد الرازق	13
10.272	Sci	محمد سعادة الديب حسب	14
10.035	Aggr	عصام محمد عبد المعطى درويش	15

بيانات إحصائية
في الإصدار السادس للنشر العلمي 2009

Faculty	Count	%	TOT IF	%	Avg	Min	Max
Science	192	26.158	273.9	27.288	1.43	0.1	9.38
Agriculture	65	8.856	76.486	7.62	1.18	0.33	6.49
Veterinary Medicine	46	6.267	57.862	5.765	1.26	0.56	3.21
Statistical	4	0.545	0	0	0	0	0
Engineering	112	15.259	115.107	11.468	1.03	0.06	8.48
Computer	5	0.681	6.043	0.602	1.21	0.42	2.6
Medicine	129	17.575	239.569	23.868	1.86	0.7	10.4
Oral & Dental	14	1.907	8.465	0.843	0.61	1.09	1.96
Pharmacy	93	12.67	155.917	15.534	1.68	0.1	6.11
National Cancer Institute	20	2.725	41.853	4.17	2.09	0.65	6.33
Nursing	4	0.545	0	0	0	0	0
Arts	8	1.09	0	0	0	0	0
Archaeology	13	1.771	0	0	0	0	0
Educational Studies	4	0.545	0	0	0	0	0
Economics and Political Science	6	0.817	0	0	0	0	0
Commerce	4	0.545	0	0	0	0	0
Laser	15	2.044	28.537	2.843	1.9	0.87	6.09
Total	734	100		100			

2008

Faculty	Count	%	TOT IF	%	Avg	Min	Max
Science	176	33.02	158.09	20.63	0.9	0.09	4.186
Agriculture	32	6	19.874	2.59	0.62	0.295	3.137
Veterinary Medicine	40	7.5	35.032	4.57	0.88	0.41	2.914
Statistical Studies and Research Institute	11	2.06	0.387	0.05	0.04	0.387	0.387
Engineering	69	12.95	39.684	5.18	0.58	0.13	3.427
Computers and Information	4	0.75	2.122	0.28	0.53	0.455	1.177
Medicine	99	18.57	335.1	43.73	3.38	0.13	52.589
Pharmacy	1	0.19	1.55	0.2	1.55	1.55	1.55
National Cancer Institute	59	11.07	140.919	18.39	2.39	0.145	17.6
Nursing	12	1.13	11.503	1.5	1.92	0.4	4.29
Oral and Dental Medicine	1	0.19	0	0	0	0	0
Arts	9	1.69	0	0	0	0	0
Archaeology	5	0.94	4.032	0.53	0.81	1.29	1.436
Economics and Political Science	9	1.69	0.788	0.1	0.09	0.229	0.302
Commerce	1	0.19	0	0	0	0	0
African Research and Studies Institute	2	0.38	0	0	0	0	0
National Institute of Laser Enhanced Sciences	9	1.69	17.169	2.24	1.91	0.827	2.957
Total	539	100	766.25	100	1.44		

2007

Faculty	Count	%	TOT IF	%	Avg	Min IF	Max IF
Science	162	36.73	186.03	29.74	0.082	1.15	3.902
Agriculture	14	3.17	20.63	3.30	0.637	1.47	4.228
Veterinary Medicine	20	4.54	23.03	3.68	0.314	1.15	3.554
Statistical Studies and Research Institute	6	1.36	2.26	0.36	0.06	0.38	1.003
Engineering	79	17.91	60.63	9.69	0.034	0.77	2.905
Computers and Information	3	0.68	3.86	0.62	0.816	1.29	1.79
Medicine	64	14.51	135.39	21.65	0.248	2.12	6.19
Oral and Dental Medicine							
Pharmacy	40	9.07	126.06	20.15	0.225	3.15	9.6
National Cancer Institute	16	3.63	50.61	8.09	0.529	3.16	5.366
Nursing							
Arts	7	1.59					
Archaeology	2	0.45					
Economics and Political Science	14	3.17	1.27	0.20	0.38	0.09	0.508
Commerce	2	0.45					
African Research and Studies Institute	1	0.23					
National Institute of Laser Enhanced Sciences	11	2.49	15.73	2.51		1.43	
Total	441	100	625.48	100			

2006

Faculty	Count	%	TOT IF	%	Avg	Min IF	Max IF
Science	142	40.46	164.32	28.59	1.16	0.22	3.809
Agriculture	8	2.28	8.57	1.49	1.07	0.719	2.161
Veterinary Medicine	11	3.13	15.51	2.70	1.41	0.39	3.61
Statistical Studies and Research Institute	8	2.28					
Engineering	56	15.95	45.30	7.88	0.81	0.07	4.054
Computers and Information	2	0.57		0.00	0.00	0.816	0.816
Medicine	49	13.96	241.25	41.98	4.92	0.58	29.273
Oral and Dental Medicine		0.00		0.00			
Pharmacy	27	7.69	54.72	9.52	2.03	0.687	5.854
National Cancer Institute	9	2.56	28.47	4.95	3.16	0.55	11.81
Nursing		0.00					
Arts	7	1.99					
Archaeology	1	0.28					
Economics and Political Science	13	3.70				0.73	0.73
Commerce	4	1.14					
African Research and Studies Institute		0.00					
National Institute of Laser Enhanced Sciences	13	3.70	16.54	2.88	1.27	0.796	2.695
Dar Al-Oloum	1	0.28					
Total	351	100	574.67	100			

Publication From 2006-2009

Faculty	2006	2007	2008	2009	Total
Science	142	162	241	192	737
Agriculture	8	14	35	65	122
Veterinary Medicine	11	20	47	46	124
Statistical Studies and Research Institute	8	6	11	4	29
Engineering	56	79	109	112	356
Computers and Information	2	3	4	5	14
Medicine	49	64	124	129	366
Oral and Dental Medicine			1	14	15
Pharmacy	27	40	77	93	237
National Cancer Institute	9	16	16	20	61
Nursing			1	4	5
Arts	7	7	17	8	39
Archaeology	1	2	5	13	21
Educational Studies				4	4
Economics and Political Science	13	14	13	6	46
Commerce	4	2	1	4	11
Mass Communication			1		1
African Research and Studies Institute		1	2		3
National Institute of Laser Enhanced Sciences	13	11	9	15	48
Dar Al-Oloum	1				1
Total	351	441	814	734	2240

Cairo University

1- President

Prof. Hossam Kamel

**2- Vice-President for post-graduate
studies and research**

Prof. Hussein M. Khaled

**3- Vice-President for Social Services
and Environment Developments**

Prof. Heba A. Nassar

(تم التنازل عن قيمة المكافأة تشجيعاً لشباب الباحثين)

National Cancer Institute**Dept.** : Medical Oncology**Name** : **Hossam K. Mahmoud****Title** : Special Issues Related to Hematopoietic SCT in the Eastern Mediterranean Region and the First Regional Activity Report

M. D. Aljurf, S. Z. Zaidi, H. El Solh, F. Hussain, A. Ghavamzadeh, H. K. Mahmoud, T. Shamsi, T. Ben Othman, M.

Authors : M. Sarhan, D. Dennison, A. Ibrahim, S. Benchekroun, N. Chaudhri, B. Labar, M. Horowitz, D. Niederwieser and A. Gratwohl**Published In** : Bone Marrow Transplantation**ISSN:** 0268–3369**Impact Factor** : 3.40**Abstract** :

Although several centers are now performing allogeneic hematopoietic SCT (HSCT) in the Eastern Mediterranean (EM) region, the availability is still limited. Special issues including compatible donor availability and potential for alternative donor programs are discussed. In comparison to Europe and North America, differences in patterns of disease and pre-HSCT general status, particularly for patients with BM failure, are described. Other differences including high seropositivity for CMV, hepatitis B and C infection, and specific observations about GVHD and its relation to genetically homogeneous communities are also discussed. We report that a total of 17 HSCT programs (performing five or more HSCTs annually) exist in 9 countries of the EM region. Only six programs are currently reporting to European Group for Blood and Marrow Transplantation or Center for International Blood and Marrow Transplantation Research.

A total of 7617 HSCTs have been performed by these programs including 5701 allogeneic HSCTs. The area has low-HSCT team density (1.56 teams per 10 million inhabitants vs 14.43 in Europe) and very low-HSCT team distribution (0.27 teams per 10 000 sq km area vs 0.1–6 teams in Europe). Gross national income per capita had no clear association with low-HSCT activity. Much improvement in infrastructure and formation of an EM regional HSCT registry are needed.

Keywords :

HSCT programs; Eastern Mediterranean; Regional activity; Donor availability; Genetic issues; Pattern of infections.

National Cancer Institute

Dept. : Medical Oncology

Name : **Hossam K. Mahmoud**



Title : Kinetics of BCR-ABL Transcripts in Imatinib Mesylate Treated Chronic Phase CML (CPCML), A Predictor of Response and Progression Free Survival

Authors : Hossam K. Mahmoud, Yasser El Nahas, Mohamad Abdel Moaty, Raafat Abdel Fattah, Mohamad El Emary and Wafaa El Metnawy

Published In : International Journal of Biomedical Science

ISSN 00-00

Impact Factor 0.0

Abstract :

Purpose: To assess the kinetics of molecular response to Imatinib Mesylate (IM) therapy in predicting progression free survival (PFS), sustained hematological, and cytogenetic responses in CPCML. **Methods:** Ninety five newly diagnosed CPCML Egyptian patients were treated with IM 400 mg daily dose. Cytogenetic analysis was performed at diagnosis and every 6 months. Molecular monitoring by RT-QPCR was performed at diagnosis and every 3 months during a median follow-up period (FUp) of 26 months. Mutation detection of ABL domain was performed by ASO-PCR. **Results:** Hematological response was 98% after three months of IM therapy. Out of 95 patients 59 showed 2 log reduction of BCR-ABL/ABL ratio after 6 months of whom 49 (83%) had complete cytogenetic response (CCyR) and 42 (71%) had major molecular response (MMR) at 12 months. BCR-ABL transcripts remained undetectable in 22 patients (39%) at 26 months. Among the remaining 34 patients not achieving 2 log reduction at 6 months only 5 (15%) had CCyR and MMR by 12 months. ABL domain mutations were detected in 11/15 (73%) resistant and suboptimal responding patients. Achieving 2 log reduction after 6 months of IM therapy significantly correlated with sustained cytogenetic and molecular responses ($p < 0.0001$), with PFS at 2 years ($p < 0.03$) and inversely with ABL gene mutations ($p < 0.001$). **Discussion:** These data demonstrated the predictive value of early molecular response to IM in CPCML regarding disease course and PFS. A 2 log reduction at 6 months of IM treatment could be a cut off level predicting resistance, CCyR, or suggesting IM dose modification.

National Cancer Institute

Dept. : Medical Oncology

Name : **Hussein Mostafa Khaled**



Title : Analysis of RhoC expression and lymphovascular Emboli in Inflammatory vs non-inflammatory Breast Cancers in Egyptian Patients.

Authors : L. O. AC, Georgopoulos A., Kleer C. G, Banerjee M., Omar S., Khaled H., Eissa S., Hablas A., Omar H. G., Douglas J. A., Merajver S. D., Soliman A. S.

Published In : Breast

ISSN: 0960-9776

Impact Factor : 2.155

Abstract :

Understanding the molecular factors that distinguish inflammatory breast cancer (IBC) from non-IBC is important for IBC diagnosis. We reviewed the records of 48 IBC patients and 64 non-IBC patients from Egypt. We determined RhoC expression and tumor emboli and their relationship to demographic and reproductive characteristics. Compared with non-IBC patients, IBC patients had significantly lower parity ($P=0.018$) and fewer palpable tumors ($P<0.0001$). IBC tumors showed RhoC overexpression more frequently than non-IBC tumors (87% vs. 17%, respectively) ($P<0.0001$). Tumor emboli were significantly more frequent in IBC tumors than non-IBC tumors (Mean \pm SD: 14.1 \pm 14.0 vs. 7.0 \pm 12.9, respectively) ($P<0.0001$). This study illustrates that RhoC overexpression and tumor emboli are more frequent in tumors of IBC relative to non-IBC from Egypt. Future studies should focus on relating epidemiologic factors to molecular features of IBC in this population.

National Cancer Institute

Dept. : Medical Oncology

Name : **Hussein Mostafa Khaled**



Title : Detection of HER-2/neu, c-myc Amplification and p53
Inactivation by FISH in Egyptian Patients with Breast Cancer

Authors : Ismail M. F., Aly M. S., Khaled H. M. and Mohamed H. M.

Published In : Ger Med Sci

ISSN : 00-00

Impact Factor : 0.0

Abstract :

Breast cancer is a leading cause of cancer-related deaths in women worldwide. The clinical course of this disease is highly variable and clinicians continuously search for prognostic parameters that can accurately predict prognosis, and indicate a suitable adjuvant therapy for each patient. Amplification of the two oncogenes HER-2/neu and c-myc and inactivation of the tumor suppressor gene p53 are frequently encountered in breast carcinomas. The purpose of this study was to use the fluorescence in situ hybridization (FISH) for the assessment of HER-2/neu and c-myc amplification and p53 inactivation and to relate these molecular markers with the commonly used clinical and pathological factors. The study was conducted on 34 tissue samples obtained from 33 females and 1 male with breast carcinomas and 17 samples obtained from 16 females and 1 male with benign breast lesions. Results revealed that the level of HER-2/neu, c-myc and p53 in the malignant group was significantly increased as compared to the benign group. On relating the level of the molecular markers to clinicopathological factors, p53 was significantly associated with increased patient's age. The sensitivity of the investigated markers significantly increased with larger tumor size. Concerning tumor grade, HER-2/neu and p53 showed a significant increase in low-grade tumors whereas c-myc showed a highly significant increase in high-grade tumors. With regard to disease staging, HER-2/neu and c-myc were the only markers that showed significant increase at late stages of disease. p53 and HER-2/neu were significantly associated with positive lymph nodal status. A significant correlation was obtained between the levels of the three biomarkers to each other. Conclusively, the combination of HER-2/neu, c-myc and p53 can stratify patients into different risk groups.

Faculty of Economics & Political Science

Dept. : Economics

Name : **Heba A. Nassar**



Title : Migration and Financial Flows: Egypt in the MENA Region

Authors : NASSAR, Heba

Published In : Consortium for Applied Research on International Migration (CARIM)

ISSN : 00-00

Impact Factor : 0.0

Abstract :

This paper describes the evolution of the main financial inflows into the MENA region with a special focus on Egypt as an origin country for emigrants and migration remittances as a component of financial flows. The evolution of Foreign Direct Investments (FDI), Official Development Assistance and Official Aid (ODA/OA) and Remittances into the region have been described and compared to the same flows in other regions. The variation over time of the amount and share of flows by country/region of origin and destination have also been analysed in an attempt to identify the reasons behind any changes. Special attention was given to remittances as the most important financial flow related to migration, and the diverse uses that remittances are put to in Egypt. Résumé Cette article décrit l'évolution des principaux flux financiers vers la région MENA avec une concentration sur l'Egypte comme pays de départ des migrants et sur les transferts migratoires comme composante des flux financiers. L'évolution des investissements directs étrangers, de l'aide officielle et des transferts vers la région a été décrite et ces éléments ont été confrontés aux même flux destinés à d'autres pays/régions du monde. Les variations dans le temps de la quantité et de la structure des flux a été aussi analysée avec une tentative d'identifier les raisons derrière ces changements. Une attention particulière a été accordée à l'analyse des transferts financiers comme composante principale des flux financiers relatifs à la migration ainsi qu'à leurs divers usages.



**Engineering
Sciences Sector**

**Faculty of
Engineering**

Faculty of Engineering

Dept. : Aerospace Engineering

Name : Galal B. Salem



Title : Performance Analysis of Hypersonic Vehicle

Authors : Ahmed F. El-Sayed, Galal B. Salem and Ahmed Z. Alm-elDein

Published In : AIAA Journal

ISSN : 0001-1452

Impact Factor : 1.025

Abstract :

Optimizing the propulsion system for a hypersonic aircraft is examined. A combined cycle engine is selected; where the thrust is to be delivered by a turbine based combined cycle engine (TBCC). The engine cycle is analyzed and optimized to give the required thrust over the entire Mach envelope with minimum fuel consumption. The variation of cycle parameters versus the Mach number is the output of that study. It is to be used further in selecting the design point of each cycle.

Keywords :

Hypersonic Aircraft; Combined Cycle Engine; Mach Number; Required Thrust.

Faculty of Engineering

Dept. : Aerospace Engineering

Name : Mohammed K. Ibrahim



Title : The Role of Vortices in Side Jet/Blunt Body Interaction at Hypersonic Speed

Authors : Mohammed K. Ibrahim, Tetsuya Nakamura, Keiichi Kitamura, Koichi Mori and Yoshiaki Nakamura

Published In : Transaction of Japan Society for Aeronautical and Space Sciences, Aerospace Technology Japan

ONLINE ISSN : 1347-3840

Impact Factor : 0.1

Abstract :

A numerical investigation was carried out for a blunt body with a circular sonic air jet normally injected into a hypersonic flow from the body surface, where the angle of attack was changed up to 40°. Computed results were compared with the experimental data collected using the shock tunnel of Nagoya University. The aerodynamic interaction due to the jet creates complicated flow fields, which are rather difficult to analyze alone experimentally. The computed results show good agreement with the experimental data with regard to surface pressure distribution and schlieren visualization. It was found that at rather low angles of attack, two vortices, i.e., a separation vortex and a horseshoe vortex, are formed inside the separated boundary layer upstream of the jet. The location of these vortices corresponds to low-pressure regions in the pressure distribution. On the other hand, at a rather high angle of attack, the interaction produces a complex flow field, where vortices have little influence on the pressure distribution. Finally the jet interaction was found to enhance the jet reaction forces by about 35% - 45 % on the body surface, the value of which is close to the experimental data.

Keywords :

Hypersonic Flow; Side Jet; Aerodynamic Interaction; CFD.

Faculty of Engineering**Dept. :** Aerospace Engineering**Name :** Nabil A. B. Yehia**Title :** Fracture Mechanics Approach for Flexural Strengthening of Reinforced Concrete Beams**Authors :** N. A. B. Yehia**Published In :** Engineering Structures 31: 404-416 (2009)**ISSN :** 0141-0296**Impact Factor:** 1.102**Abstract :**

This paper reports on the experimental testing of 9 notched reinforced concrete specimens under four point bending. The beams comprise three beam sizes and three tension reinforcing steel ratios. All beams have constant span/depth ratio of 4, initial notch/depth ratio of 0.3. Two strengthening fiber laminates were used: Glass fiber for the two lower tension reinforcing steel ratios and Carbon fiber for the higher tension reinforcing steel ratio. The strengthening laminates were designed to enhance beam moment capacity by 15% to 150% depending on the beam size and reinforcement ratio. To simulate real life strengthening situations, beams were first loaded until the notch propagated to 0.5 the beam depth. The strengthening fiber laminate was then introduced to the tension side of the beam while the load was kept applied to the other side of the beam. The fracture moment for a given crack depth was calculated through an analytical algorithm which employs Linear Elastic Fracture Mechanics. The approach takes into consideration the previous loading history of the beam prior to introducing the strengthening laminate. Test measurements of crack extension and applied load were used to compare the fracture moment recorded experimentally to that one calculated analytically. The application of the solution algorithm to different specimen sizes _ cross-section dimensions, reinforcement ratio, and strengthening fiber laminate _ showed that the solution algorithm is able to effectively predict the behavior of larger beam size and/or reinforcement better than that of smaller beam size and/or reinforcement. A sensitivity analysis was conducted to explore this point.

Keywords :

Reinforced concrete; Fracture; Repair; Strengthening; Fiber laminates.

Faculty of Engineering

Dept. : Applied Engineering Mathematics and Physics

Name : **Ahmed G. A. Radwan**



Title : On the Generalization of Second-Order Filters to the Fractional-Order Domain

Authors : Ahmed G. Radwan, Ahmed S. Elwakil and Ahmed M. Soliman

Published In : Circuits, Systems, and Computers

ISSN : 0218-1266

Impact Factor : 0.099

Abstract :

This work is aimed at generalizing the design of continuous-time second-order filters to the non-integer-order (fractional-order) domain. In particular, we consider here the case where a filter is constructed using two fractional-order capacitors both of the same order α . A fractional-order capacitor is one whose impedance is $Z_c = 1/C (j\omega)^\alpha$, C is the capacitance and α ($0 < \alpha \leq 1$) is its order. We generalize the design equations for low-pass, high-pass, band-pass, all-pass and notch filters with stability constraints considered. Several practical active filter design examples are then illustrated supported with numerical and PSpice simulations. Further, we show for the first time experimental results using the fractional capacitive probe described in Ref. 1.

Keywords :

Circuit theory; Filter theory; Fractional calculus.

Faculty of Engineering

Dept. : Applied Engineering Mathematics and Physics

Name : **Ahmed G. A. Radwan**



Title : On the Stability of Linear Systems with Fractional-order Elements

Authors : Ahmed G. Radwan, Ahmed M. Soliman, Ahmed S. Elwakil and Abd-Elatif ElSedeek

Published In : Journal of Chaos, Solitons and Fractals

ISSN : 0960-0779

Impact Factor : 2.98

Abstract :

Linear integer-order circuits are a narrow subset of rational-order circuits which are in turn a subset of fractional-order. Here, we study the stability of circuits having one fractional element, two fractional elements of the same order or two fractional elements of different order. A general procedure for studying the stability of a system with many fractional elements is also given. It is worth noting that a fractional element is one whose impedance in the complex frequency s -domain is proportional to s^α and α is a positive or negative fractional-order. Different transformations and methods will be illustrated via examples.

Keywords :

Linear integer-order circuits; Fractional-order elements; Stability of circuits.

Faculty of Engineering

Dept. : Chemical Engineering

Name : Ibrahim M. A. Ismail



Title : Ammonium Hydroxide Decomposition of Ilmenite Slag

Authors : A. A. Nayl, I. M. Ismail and H. F. Aly

Published In : Hydrometallurgy

ISSN : 0304-386X

Impact Factor : 1.747

Abstract :

Ammonium hydroxide decomposition of ilmenite slag was studied as part of an improved process to obtain high purity titanium oxide. The kinetics of the decomposition reaction was investigated in terms of the slag particle size, NH_4OH concentration, NH_4OH /slag mass ratio and reaction temperature. It was found that digestion of the ground ilmenite slag in 4 M NH_4OH at a temperature of 150 °C decomposed the slag with the formation of ammonium titanate ($(\text{NH}_4)_2\text{TiO}_3$) which was readily hydrolyzed in hot water to high purity anatase ($\geq 99.8\%$ TiO_2). Analysis of the decomposition reaction kinetics found that the reaction was chemically controlled with an apparent activation energy of $27.8 \pm 1.6 \text{ kJ mol}^{-1}$. Based on the experimental results, a flow sheet was developed and tested.

Keywords :

Ilmenite slag; Ammonium hydroxide decomposition; Leaching; Anatase.

Faculty of Engineering**Dept. :** Chemical Engineering**Name :** Seif-Eddeen K. Fateen**Title :** Treatment of a Synthetic Solution of Galvanization Effluent via the Conversion of Sodium Cyanide into an Insoluble Safe Complex**Authors :** I. Ismail, N. Abdel Monem, S. Fateen and W. Abdelazeem**Published In :** J. Hazardous Materials**ISSN :** 0304-3894**Impact Factor :** 2.975**Abstract :**

Wastewater discharged from metal-finishing processes usually contains cyanide, a hazardous substance that is used extensively in the surface finishing industry. In the present study, a synthetic solution resembling the contaminated wastewater was chemically treated using ferrous sulfate. This simple one-step process was applied successfully to remove cyanide from metal finishing waste water. The experiments were carried out on a synthetic solution containing ions of cyanide and zinc. The effects of mixing velocity, ratio of ferrous ions to cyanide ions, ferrous ions concentration, initial cyanide concentration, pH of solution, temperature, mixing time and zinc ions concentration were studied. The results showed that the removal efficiency of cyanide increased as the mixing velocity increased, ferrous ion molar ratio to cyanide ions increased, temperature increased and time of mixing increased at an optimum of pH=8. The reduction of cyanide concentration reached the allowable limit for waste water discharge according to the Egyptian Environmental Law decree 44/2000, which is 0.2 mg/l. The formed complexes were analyzed and the stability of each complex was studied under different pH value solutions after 7 days of contact.

A typical example of electroplating waste water from a local company in the field of metal finishing, which contains 18 mg/l CN⁻ and 12 mg/l Zn²⁺, was treated according to the determined optimum conditions for the treatment process and the concentration of CN⁻ was reduced to 0.095 mg/l after 15 minutes of agitation.

Keywords :

Industrial wastewater treatment; Sodium cyanide; Ferrous Sulfate.

Faculty of Engineering**Dept.** : Chemical Engineering**Name** : **Omar El-Farouk Abdel-Salam****Title** : Performance of the PEM Fuel Cell with a Coated Aluminum Bipolar Plate**Authors** : A. M. Amin, S. A. Abo El-Enin, O. E. Abdel-salam and H. El-Abd**Published In** : Infinite Energy**ISSN** : 1081-6372**Impact Factor** : 0.0**Abstract** :

The development of suitable materials to fabricate small lightweight components for fuel cell application is of great importance, particularly for the future of PEM (proton exchange membrane) fuel cells. Aluminum is suitable as bipolar plate for PEM fuel cells since it is a lightweight and low cost metal and has a high electrical conductivity, but the rapid corrosion of aluminum in the PEM environment represents a great challenge for such application.

In this work, aluminum is used as a PEM bipolar plate to replace graphite after coating it with Ni-Mo-Fe-Cr alloy and then the matrix of the base alloy and the coating annealed at 400°C for 1 hr. The new metallic bipolar plate was tested for the suitability for PEM fuel cell applications, using different testing techniques including corrosion, coating thickness, hardness, and electrical conductivity. The new bipolar plate showed excellent durability and suitability for PEM environment. The new aluminum bipolar plate is used to build a PEM fuel cell to check its performance in a real PEM fuel cell and to compare its performance and durability with that of graphitic bipolar plate. Two identical PEM fuel cells were built for this reason, one for the new bipolar plate and the other one for graphite. The new aluminum bipolar plate showed a better performance than the graphite bipolar plate; for example, at 0.5 volt fuel cell voltage the output current was 1020 and 524 mA for the metallic bipolar plate and the graphite bipolar plate respectively. The power output was also higher in the case of the new metallic bipolar plate under the same conditions, 0.045 watt/cm² for the new metallic bipolar plate and 0.039 watt/cm² for the graphite bipolar plate. In addition, a 100 hr lifetime test was done for both bipolar plates at the same conditions without any decay or degradation in the voltage or power output throughout the entire test.

Keywords :

PEM Fuel Cell; Coated Aluminum; Bipolar Plate.

Faculty of Engineering

Dept. : Chemical

Name : **Magdi F. Abadir**



Title : Effect of the addition of Perlite on the Physical, Mechanical and Thermal Properties of Refractory Insulating Concrete

Authors : Magdi F. Abadir, Ossama A. Ibrahim, Hassan B. G. Ghazal and Sayed N. Nasr

Published In : Silicates Industriels 74 (3-4): 75-80 (2009)

ISSN : 0037 5225

Impact Factor: 0.071

Abstract :

The effect of the addition of perlite with four different particle sizes of grog on the properties of insulating refractory concrete (IRC) was investigated. Water absorption and porosity were found to increase with the increase in the perlite level and to decrease with the level of cement added. The bulk density, the mechanical strength and the thermal conductivity generally decreased with an increase of porosity. Thermal conductivity was correlated to the fraction of perlite and that of cement used. It was possible to design a mix that produces IRC having comparable properties to a locally produced brand, in Egypt, at a lower cost.

Keywords :

Insulating refractory concrete; Perlite; Thermal conductivity; Strength.

Faculty of Engineering

Dept. : Chemical

Name : **Magdi F. Abadir**



Title : Rheological characteristics of clay sewer pipes paste

Authors : Magdi F. Abadir, Kamel M. El Khatib and Shereen K. Amin

Published In : Industrial Ceramics

ISSN : 1121-7588

Impact Factor : 0.102

Abstract :

The present paper deals with optimizing different mix variables that affect the rheology of a clay sewer pipe paste. Investigated variables consist of percent water, percent grog and average particle size of clay. Shear stress and strain rates were calculated using an extrusion process through an orifice by means of compressed air. All pastes exhibited Bingham flow behaviour. The effect of percent water, percent grog and clay particle size on the following properties of paste were investigated: Plasticity of extruded paste, dry strength and drying shrinkage. It was found that the optimum parameters to be used are: 27% water (on dry basis), 30% grog mixed with clay of average particle size of 0.2 mm.

Keywords :

Rheology; Clay pastes; Plasticity; Strength.

Faculty of Engineering**Dept. :** Chemical Engineering**Name :** Nabil M. Abd El-monem**Title :** Long-term Performance of Zeolite Na A-X blend as backfill Material in Near Surface Disposal Vault**Authors :** R. O. Abdel Rahman, H. A. Ibrahim and N. M. Abdel Monem**Published In :** Chemical Engineering**ISSN :** 1385-8947**Impact Factor :** 2.813**Abstract :**

This study investigates the feasibility of using synthetic zeolite Na A-X blend prepared from fly ash as near surface disposal backfill material. Tests were conducted at laboratory scale to evaluate the physical and chemical properties of the prepared zeolite. The zeolite density, porosity, and particle size distribution were measured. The distribution coefficient (Kd) value of Cs ions was evaluated using batch sorption experiment in synthetic groundwater to simulate possible conditions for near surface disposal. The transient behavior of the batch sorption experimental data was analyzed using Lagergren, Ho and McKay, and Morris–Weber rate models to assess the controlling mechanism of the sorption process. It was found that the sorption process is chemi-sorption and controlled by diffusion mechanism. The dispersional behavior of Cs ions on the prepared material was studied using column experiment and the hydrodynamic dispersion coefficient was determined. To provide an overall functional performance of the proposed backfill material, the long-term behavior of the prepared zeolite has been evaluated using computer model. This model consists of two modules that has been developed to study the migration of Cs radio-nuclides from bare cementitious waste form through the backfill. The study compares the release rate from bentonite–crushed rock mixture to that from the prepared zeolite. The result demonstrates that synthetic zeolite Na A-X blend shows a better performance in terms of radionuclide containment.

Keywords :

Radioactive wastes; Backfill material; Synthetic zeolite; Mathematical models.

Faculty of Engineering

Dept. : Computer Engineering

Name : Amir F. Atiya



Title : A penalized Likelihood Based Pattern Classification Algorithm

Authors : George Eskander and Amir Atiya

Published In : Pattern Recognition 42: 2684-2694 (2009)

ISSN : 0031-3203

Impact Factor : 3.279

Abstract :

Penalized likelihood is a general approach whereby an objective function is defined, consisting of the log likelihood of the data minus some term penalizing non-smooth solutions. Subsequently, this objective function is maximized, yielding a solution that achieves some sort of trade-off between the faithfulness and the smoothness of the fit. Most work on that topic focused on the regression problem, and there has been little work on the classification problem. In this paper we propose a new classification method using the concept of penalized likelihood (for the two class case). By proposing a novel penalty term based on the K-nearest neighbors, simple analytical derivations have led to an algorithm that is proved to converge to the global optimum. Moreover, this algorithm is very simple to implement and converges typically in two or three iterations. We also introduced two variants of the method by distance-weighting the K-nearest neighbor contributions, and by tackling the unbalanced class patterns situation. We performed extensive experiments to compare the proposed method to several well-known classification methods.

These simulations reveal that the proposed method achieves one of the top ranks in classification performance and with a fairly small computation time.

Keywords :

K-nearest neighbor; Penalized likelihood; Pattern classification; Posterior probability; Class balancing; Weighted KNN.

Faculty of Engineering

Dept. : Computer Engineering

Name : Amir F. Atiya



Title : Novel Ensemble Techniques for Regression With Missing Data

Authors : Mostafa Hassan, Amir Atiya, Neamat El Gayar and Raafat El Fouly

Published In : New Mathematics and Natural Computation 5(3): 635-652 (2009)

ISSN : 1793-0057

Impact Factor : 0.00

Abstract :

In this paper we consider the problem of missing data, and develop an ensemble-network model for handling the missing data. The proposed method is based on utilizing the inherent uncertainty of the missing records in generating diverse training sets for the ensemble's networks. Specifically we generate the missing values using their probability distribution function. We repeat this procedure many times thereby creating a number of complete data sets. A network is trained for each of these data sets, thereby obtaining an ensemble of networks. Several variants are proposed, and we show analytically that one of these variants is superior to the conventional mean-substitution approach for the limit of large training set. Simulation results confirm the general superiority of the proposed methods compared to the conventional approaches.

Keywords :

Missing values; Missing value imputation; Ensemble networks; Regression.

Faculty of Engineering

Dept. : Computer Engineering

Name : Amir F. Atiya



Title : An Analytic Approximation of the Likelihood Function for the Heston Model Volatility Estimation Problem

Authors : Amir Atiya and Steve Wall

Published In : Quantitative Finance 9: 289-296 (2009)

ISSN : 1469-7688

Impact Factor : 0.892

Abstract :

Estimating the volatility from the underlying asset price history for the discrete observations case is a challenging inference problem. Yet it has attracted much research interest due to the key role of volatility in many areas of finance. In this paper we consider the Heston stochastic volatility model and propose an accurate analytic approximation for the volatility likelihood function. The model is based on considering the joint probability density of the asset and the volatility, and integrating out past volatility variables. The likelihood simplifies to a product of T terms, where T is the length of the past history considered. An extension to the problem of fixed parameter estimation is also presented. Simulation results indicate the effectiveness and accuracy of the proposed method.

Keywords :

Volatility; Volatility estimation; Heston model; Stochastic volatility; Particle filter.

Faculty of Engineering

Dept. : Computer Engineering

Name : **Amir F. Atiya**



Title : A New Bayesian Formulation for Holt's Exponential Smoothing

Authors : Robert Andrawis and Amir Atiya

Published In : J. Forecasting 28: 218-234 (2009)

ISSN : 0277-6693

Impact Factor : 0.00

Abstract :

In this paper we propose a Bayesian forecasting approach for Holt's additive exponential smoothing method. Starting from the state space formulation, a formula for the forecast is derived and reduced to a two-dimensional integration that can be computed numerically in a straightforward way. In contrast to much of the work for exponential smoothing, this method produces the forecast density and, in addition, it considers the initial level and initial trend as part of the parameters to be evaluated. Another contribution of this paper is that we have derived a way to reduce the computation of the maximum likelihood parameter estimation procedure to that of evaluating a two-dimensional grid, rather than applying a five-variable optimization procedure. Simulation experiments confirm that both proposed methods give favorable performance compared to other approaches.

Keywords :

Forecasting; Data mining; Computer engineering.

Faculty of Engineering

Dept. : Computer Engineering

Name : Amir F. Atiya



Title : Symbolic Function Network

Authors : George Eskander and Amir Atiya

Published In : Neural Networks 22: 395-404 (2009)

ISSN : 0893-6080

Impact Factor : 2.656

Abstract :

In this paper a model called symbolic function network (SFN) is introduced; that is based on using elementary functions (for example powers, the exponential function, and the logarithm) as building blocks. The proposed method uses these building blocks to synthesize a function that best fits the training data in a regression framework. The resulting network is of the form of a tree, where adding nodes horizontally means having a summation of elementary functions and adding nodes vertically means concatenating elementary functions. Several new algorithms were proposed to construct the tree based on the concepts of forward greedy search and backward greedy search, together with applying the steepest descent concept. The method is tested on a number of examples and it is shown to exhibit good performance.

Keywords :

Symbolic networks; Multilayer networks; Tree networks; Neural tree; Symbolic functions; Computer algebra; Tree propagation; Forward greedy search; Backward greedy search.

Faculty of Engineering

Dept. : Computer Engineering

Name : Hatem M. El-Boghdadi



Title : Power-aware Routing for Well-nested Communications on the Circuit

Authors : Hatem M. El-Boghdadi

Published In : J. Parallel and Distributed Computing

ISSN : 0743-7315

Impact Factor : 1.168

Abstract :

Although algorithms that employ dynamic reconfiguration are extremely fast, they need the underlying architecture to change structure very rapidly, possibly at each step of the computation. This increases the power requirement of such algorithms, which is not acceptable in current devices that strive to reduce the power requirements. This paper deals with the circuit switched tree (CST), an interconnect used to implement dynamically reconfigurable architectures. In this paper, we introduce a new technique called Power-Aware Dynamic Reconfiguration (PADR). Under this technique, we propose a power-aware algorithm for configuring the CST and scheduling a class of communications, called the well-nested communications on the CST. We show that the algorithm is power optimal. The algorithm requires only local information at processing elements (PEs), yet it correctly establishes paths between communicating PEs. We also show that the algorithm is optimal and efficient.

Keywords :

Power-aware routing; Scheduling; Circuit switched tree.

Faculty of Engineering

Dept. : Electrical Power and Machines

Name : **Hassan M. R. Emara**



Title : Using Ant Colony Optimization algorithm for solving project management problems

Authors : H. Abdallah, H. M. Emara, H. T. Dorrah and A. Bahgat

Published In : Expert Systems with Applications

ISSN : 0957-4174

Impact Factor : 2.596

Abstract :

Network analysis provides an effective practical system for planning and controlling large projects in construction and many other fields. Ant Colony System is a recent approach used for solving path minimization problems. This paper presents the use of Ant Colony Optimization (ACO) system for solving and calculating both deterministic and probabilistic CPM/PERT networks. The proposed method is investigated for a selected case study in construction management. The results demonstrate that – compared to conventional methods – ACO can produce good optimal and suboptimal solutions.

Keywords :

Ant colony optimization; PERT; Project management; CPM.

Faculty of Engineering**Dept.** : Electrical Power and Machines**Name** : **Hassan M. R. Emara****Title** : Wind energy conversion system regulation via LMI fuzzy pole cluster approach**Authors** : A. H. Besheer, H. M. Emara and M. M. Abdel Aziz**Published In** : Electric Power Systems Research**ISSN** : 0378-7796**Impact Factor** : 0.952**Abstract :**

This paper addresses the design of fuzzy state feedback controller that has not only the ability to stabilize the fuzzy model/system but also to control the transient behavior and closed loop poles location for wind energy conversion system (WECS) that presents interesting control demands and exhibits intrinsic nonlinear characteristics. The proposed fuzzy controller is employed to regulate indirectly the power flow in the grid connected WECS by regulating the DC current flows in the interconnected DC link. First, a Takagi–Sugeno fuzzy model is employed to represent the non-linear WECS. Then a model-based fuzzy controller design utilizing the concept of parallel-distributed compensation is developed. Satisfactory time response and closed loop damping over wide operating range are achieved by forcing the closed loop poles into a suitable sub-region of the complex frequency plane. Sufficient stability conditions are expressed in terms of linear matrix inequalities (LMI's) which can be solved very efficiently using convex optimization techniques. The design procedures are applied to a dynamic model of a typical wind energy conversion system to illustrate the feasibility and the effectiveness of the proposed control techniques via simulation example.

Keywords :

Fuzzy system; Pole cluster; WECS; T–S model; State feedback.

Faculty of Engineering

Dept. : Electric Power

Name : **Hussein I. Anis**



Title : Probabilistically-Based Risk of Exposure to Power Lines
Magnetic Fields

Authors : Ayman Aboud and Hussein Anis

Published In : Electric Power Components and Systems

ISSN : 1532-5008

Impact Factor : 0.376

Abstract :

Guidelines of exposure to power line magnetic fields are usually designed on deterministic basis making their validity and adequacy somewhat questionable. Based on an overall probabilistic approach, a method for risk assessment of exposure to over-head power lines magnetic field is presented. There are advantages to the probabilistic approach over conventional methods of developing the risk of exposure to over-head power line magnetic fields. A model is constructed in this paper to predict the randomness in power line magnetic field taking into account –in addition to line loading- the random nature of the parameters contributing to the temperature of the power line conductors which, in turn, influences the resulting conductor sag. Those parameters include line loading, ambient temperature, solar irradiation, and wind speed. The correlative nature of those parameters is also considered. The model enables taking into account the likelihood of the effects of those various operational and weather parameters (or, variables), thus avoiding inflated risk estimates produced by compounding single point worst-case values of the input variables, and consequently leading to an improved risk assessment.

Keywords :

Magnetic fields; Power lines; Risk assessment; Probabilistic analysis.

Faculty of Engineering

Dept. : Electrical Power and Machines

Name : **Adel Dia El-Din Shaltout**



Title : An Unsymmetrical Two-Phase Induction Motor Drive With Slip-Frequency Control

Authors : N. Abdel-Rahim and Adel Shaltout

Published In : IEEE Transaction on Energy Conversion

ISSN : 0885-8969

Impact Factor : 0.0

Abstract :

This paper proposes a closed-loop control strategy to operate an off-the-shelf single-phase induction motor (IM) as a symmetrical two-phase IM. The proposed control strategy employs the slip frequency control technique to independently control the stator currents of both the main and auxiliary windings and make them follow a predefined sinusoidal waveform. Simulation and experimental results show that the proposed scheme is successful in operating the conventional single-phase IM as a symmetrical two-phase IM with fast dynamic and transient responses. In addition, the proposed control system achieves cost-effectiveness in both initial and running costs.

Keywords :

Electric motor drive; Single-phase induction motor; Slip frequency control; Unsymmetrical 2-phase induction motor.

Faculty of Engineering

Dept. : Electric Power and Machines

Name : **Abdel-Latif M. R. Elshafei**



Title : LMI Static Output-feedback Design of Fuzzy Power System Stabilizers

Authors : M. Soliman, A. L. Elshafei, F. Bendary and W. Mansour.

Published In : Expert Systems with Applications

ISSN : 0957-4174

Impact Factor : 2.596

Abstract :

A new practical power system stabilizer (PSS) design based on static output feedback is proposed. The design guarantees robust pole-clustering in an acceptable region in the complex plane for a wide range of operating conditions. A power system design model is approximated by a set of Takagi–Sugeno (T–S) fuzzy models to account for nonlinearities, uncertainties and large scale power systems. The proposed PSS design is based on parallel distributed compensation (PDC). Sufficient design conditions are derived as linear matrix inequalities (LMI). The design procedure leads to a tractable convex optimization problem in terms of the stabilizer gain matrix. Simulations results of both single-machine and multi-machine power systems confirm the effectiveness of the proposed PSS design.

Keywords :

Power system stability; Robustness; Linear matrix inequalities; Fuzzy models; Static output feedback.

Faculty of Engineering**Dept.** : Electric Power and Machines**Name** : **Abdel-Latif M. R. Elshafei****Title** : Design of a Fuzzy Multi-objective Power System Stabilizer**Authors** : M. Soliman, A. L. Elshafei, F. Bendary and W. Mansour**Published In** : European Journal of Control**ISSN** : 0947-3580**Impact Factor** : 1.013**Abstract** :

The design of a model-free fuzzy power system stabilizer (PSS) lacks systematic stability analysis and performance guarantees. This paper provides a step towards the design of a model-based fuzzy PSS that guarantees not only robust stability but also robust performance of power systems. A new practical and simple design based on dynamic output feedback is proposed. The design model is approximated by a set of Takagi-Sugeno (T-S) fuzzy models to account for nonlinearities and uncertainties. The proposed stabilizer is based on parallel distributed compensation (PDC). Sufficient design conditions are presented as linear matrix inequalities (LMI). The design procedure leads to a tractable convex optimization problem in terms of the stabilizer gain matrices. The design guarantees robust pole clustering, in an acceptable region in the open left half of the complex plane, and robust performance in terms of H_2 and H_∞ measures, over a wide range of operating conditions. Simulations results of both single-machine and multi-machine power systems confirm the effectiveness of the proposed PSS design.

Keywords :

Power system dynamic stability; Mixed H_2/H_∞ control; Linear matrix inequality (LMI); Takagi-Sugeno fuzzy models; Parallel distributed compensation (PDC).

Faculty of Engineering

Dept. : Electric Power and Machines

Name : Abdel-Latif M. R. Elshafei



Title : Robust Adaptive Fuzzy Logic Power System Stabilizer

Authors : T. Hussein, M. Saad, A.L. Elshafei and A. Bahgat

Published In : Expert Systems with Applications

ISSN : 0957-4174

Impact Factor : 2.596

Abstract :

This paper introduces a robust adaptive fuzzy controller as a power system stabilizer (RFPSS) used to damp inter-area modes of oscillation following disturbances in power systems. In contrast to the IEEE standard multi-band power system stabilizer (MB-PSS), robust adaptive fuzzy-based stabilizers are more efficient because they cope with oscillations at different operating points. The proposed controller adopts a dynamic inversion approach. Since feedback linearization is practically imperfect, components that ensure robust and adaptive performance are included in the control law to compensate for modeling errors and achieve acceptable tracking errors. Two fuzzy systems are implemented. The first system models the nominal values of the system's nonlinearities. The second system is an adaptive one that compensates for modelling errors. A feedback linearization-based control law is implemented using the identified model. The gains of the controller are tuned via a particle swarm optimization routine to ensure system stability and minimum sum of the squares of the speed deviations. A bench-mark problem of a 4-machine 2-area power system is used to demonstrate the performance of the proposed controller and to show its superiority over other conventional stabilizers used in the literature.

Keywords :

Fuzzy logic system; Fuzzy identification; Feedback linearization; Particle swarm optimization.

Faculty of Engineering

Dept. : Electrical Power and Machines

Name : **Amr Amin Adly**



Title : Deducing Local Extremely Low Frequency Field Values From Large Sense Coil Fluxmeter Measurements

Authors : A. A. Adly, M. M. Abdel-Aziz and N. S. Hosny

Published In : J. Applied Physics

ISSN : 0021-8979

Impact Factor : 2.201

Abstract :

Great interest has been increasing in the precise measurements of extremely low frequency ambient magnetic fields which have been recently involved in numerous biological, noise, and compatibility problems. While fluxmeters equipped with sense coils are classified among the most convenient and cheap devices used in measuring such fields, they can never resolve spatially changing field distributions within their sense coil dimensions. This paper presents an approach, based on deconvoluting the sense coil response from spatial measurements, which can be used to infer local field distributions within the fluxmeter sense coil dimensions. Theoretical details as well as sample measurements and simulation results are given in the paper.

Keywords :

Electromagnetic field measurements; Fluxmeters; Deconvolution.

Faculty of Engineering

Dept. : Electrical Power and Machines

Name : **Amr Amin Adly**



Title : Utilizing Particle Swarm Optimization in the Field Computation of Nonlinear Media Subject to Mechanical Stress

Authors : A. A. Adly and S. K. Abd-El-Hafiz

Published In : J. Applied Physics

ISSN : 0021-8979

Impact Factor : 2.201

Abstract :

It is well known that applied mechanical stresses could have a strong adverse effect on the magnetic properties of ferromagnetic media. In power devices, mechanical clamping mechanisms of core lamination stacks could, thus, alter their overall performance. This paper presents an automated approach through which field computation of nonlinear media subject to mechanical stress may be performed. In this approach, clamped zones are assumed to possess zero strain and magnetization induced stresses are deduced from prohibited magnetostriction. Details of the approach as well as simulation results are given in the paper.

Keywords :

Electromagnetic field computation; Mechanical stress; Particle swarm optimization.

Faculty of Engineering

Dept. : Electrical Power and Machines

Name : **Amr Amin Adly**



Title : Incorporating Core Hysteresis Properties in Three Dimensional Computations of Transformer Inrush Current Forces

Authors : A. A. Adly and H. H. Hanafy

Published In : Applied Physics

ISSN : 0021-8979

Impact Factor : 2.201

Abstract :

It is well known that transformer inrush currents depend upon the core properties, residual flux, switching instant, and the overall circuit parameters. Large transient inrush currents introduce abnormal electromagnetic forces which may destroy the transformer windings. This paper presents an approach through which core hysteresis may be incorporated in three-dimensional computations of transformer inrush current forces. Details of the approach, measurements, and simulations for a shell-type transformer are given in the paper.

Keywords :

Power transformers; Inrush current forces; Magnetic hysteresis; Electromagnetic field computation.

Faculty of Engineering

Dept. : Electrical Power and Machine

Name : **Mohamed M. Abd El-Aziz**



Title : Sensitivity of Steady State Temperatures of SF₆ Gas Cooled-Insulated Power Transformers to Selected Parameters

Authors : M. M. Abd El-Aziz, M. M. Eteiba and J. H. Shazly

Published In : IEEE Transactions on Power Delivery

ISSN : 0885-8977

Impact Factor : 1.289

Abstract :

The effects of cooling methods, gas pressure, gas velocity, electrical loading, and environmental parameters on the steady state temperature distribution of SF₆ gas cooled-insulated power transformer are investigated using the finite element method. The contributions of both convection and radiation to the total heat transfer rate inside and outside the transformer are included. The results provide useful sensitivity information which can be accessed and manipulated by the transformer designers or operators. This sensitivity information reduces significantly the analysis and computations via identifying the important parameters that most affect the temperature distribution in this type of transformers.

Keywords :

SF₆ Power transformer; Finite element method; Heat conduction equation; Convection; Radiation.

Faculty of Engineering

Dept. : Electronics and Communications Engineering

Name : **Ahmed Ali Abouelsoud**



Title : Stabilising Output Feedback Controller of Bilinear Systems.

Authors : Ahmed A. Abouelsoud

Published In : Int. J. Modelling, Identification and Control

ISSN : 1746-6172

Impact Factor : 0.00

Abstract :

This paper proposes an output feedback controller to semi-globally stabilise bilinear systems based on algebraic Reccati equation (ARE). We consider multivariable bilinear systems with drift matrix critically stable. The proposed output feedback controller is bounded in magnitude. Semi-global asymptotic stability is proven using Lyapunov method and simulation results show effectiveness of the proposed controller.

Keywords :

Multivariable bilinear systems; Bounded control; Lyapunov function; Observer; Semi-global asymptotic stability.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Mos-C Tow-Thomas Filter Using Voltage Op Amp, Current Feedback Op Amp and Operational Transresistance Amplifier

Authors : Ahmed M. Soliman and Ahmed H. Madian

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.099

Abstract :

Several MOS-C realizations of the Tow-Thomas circuit using the commercially available voltage operational amplifier and the current feedback operational amplifier are reviewed in this paper. Additional MOS-C Tow-Thomas realizations using the operational transresistance amplifier and the differential current voltage conveyor are also included. MOS-C realizations of the Tow-Thomas circuit using CMOS operational amplifier, CMOS current feedback operational amplifier and CMOS operational transresistance amplifier are also given. Spice simulation results using 0.18 CMOS technology model from MOSIS are included together with detailed comparison tables to demonstrate the differences between MOS-C Tow-Thomas circuits using both of the commercially available active building blocks and CMOS integrated building blocks.

Keywords :

Tow-Thomas Filter; CFOA; OTRA; DCVC.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Bode-Type Equalizers Using Current Conveyors

Authors : Ahmed M. Soliman

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

New voltage mode and current mode active RC Bode-type variable equalizers using current conveyors are introduced. The proposed equalizers can operate at much higher frequencies than the classical operational amplifier-based variable equalizers. Spice simulation results are included to confirm the practicality of the proposed circuits.

Keywords :

Equalizers; Current conveyors.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Adjoint Network Theorem and Floating Elements in the Nam

Authors : Ahmed M. Soliman

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

Although the adjoint network theorem preserves all the circuit properties it does not, however, guarantee that the floating property of an element is maintained. In other words, the adjoint of a floating element may not be floating and vice-versa a nonfloating element may have an adjoint floating element as will be explained in this paper. An important and new property of the Nodal Admittance Matrix (NAM) is that it can identify any element as a floating or nonfloating. The four floating basic building blocks including the nullor are tabulated. It is shown that the nullor and the Voltage Mirror (VM)–Current Mirror (CM) pair are self adjoint. The other two floating elements namely Nullator–CM pair and the VM–Norator pair are adjoint to each other.

The NAM of the Op Amp family and Current Conveyor (CCII) family are also given. Two examples are given demonstrating the generation of two families of CCII filters from two known two-CCII filter circuits with demonstration of the floatation property in each of the two filters. Although the paper has a tutorial nature it also includes new important results.

Keywords :

Adjoint theorem; Nodal admittance matrix; Floating elements.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Active Circulator Circuits Using OA, CCII, CFOA and DVCC

Authors : Ahmed M. Soliman

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

A review of the two types of circulators using Operational Amplifiers (OA) with detailed comparison is given. Novel active circulator circuits using Current Conveyors (CCII) and Current Feedback Operational Amplifiers (CFOA) and Differential Voltage Current Conveyor (DVCC) are introduced. The proposed CCII circulator circuit uses six CCIIs and three floating resistors. Two different circulator types using the CFOA are given. A circulator circuit which uses three DVCCs and has the advantage of using three grounded resistors is also introduced.

Spice simulation results using 0.5 μm CMOS transistors are included to support the theoretical analysis and demonstrate comparisons among the different types of circulators.

Keywords :

Active circuits; Op amps; CCII; CFOA; DVCC; Active circulators.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Mos-C Khn Filter Using Voltage Op Amp, CFOA, OTRA and DCVC

Authors : Ahmed M. Soliman and Ahmed H. Madian

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

MOS-C realizations of the Kerwin–Huelsman–Newcomb (KHN) circuit using the commercially available Voltage Operational Amplifier (VOA) and the Current Feedback Operational Amplifier (CFOA) are reviewed in this paper. Additional MOS-C KHN realizations using the Operational Transresistance Amplifier (OTRA) and the Differential Current Voltage Conveyor (DCVC) are also included. MOS-C realizations of the KHN circuit using CMOS operational amplifier, CMOS current feedback operational amplifier and CMOS operational transresistance amplifier are also given.

Spice simulation results using 0.18 CMOS technology model from MOSIS are included together with detailed comparison tables to demonstrate the differences between MOS-C KHN circuits using both of the commercially available active building blocks and CMOS integrated building blocks. A comparison with the Gm-C KHN circuit is also included.

Keywords :

Kerwin; Huelsman; Newcomb filter; CFOA; OTRA; DCVC.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Generation of Oscillators Based on Grounded Capacitor Current Conveyors with Minimum Passive Components

Authors : Ahmed M. Soliman

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

In this paper, eight new Frequency Dependent Negative Resistance (FDNR) circuits using two current conveyors or inverting current conveyors or a combination of the twotypes are introduced. The proposed circuits are canonic and they use two grounded capacitors and one floating resistor. The generation of grounded capacitor minimum passive component oscillators from the FDNR circuits is also considered. It is found that two of the recently reported attractive oscillators are among the family of the generated oscillator circuits. Additional six new oscillator circuits based on the FDNR circuits are introduced in this paper. Spice simulation results using technology: SCN 05 feature size 0.5 μm , MOSIS Vendor: AGILENT to demonstrate the practicality of the proposed oscillators are included.

Keywords :

Oscillators; Current conveyors; Inverting current conveyors.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : On the Introduction of New Floating Current Conveyors

Authors : Ahmed M. Soliman and Ramy S. Ahmed

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

Two new types of floating current conveyors are introduced. Each type has four ports Y, X and two Z ports. The first type is the Floating Second Generation Current Conveyor (FCCII) and includes both CCII+ and CCII- as special cases. The second type is the Floating Inverting Second Generation Current Conveyor (FICCI) and includes both ICCII+ and ICCII- as special cases. The Nodal Admittance Matrix (NAM) stamp for the Nullator-Pathological Current Mirror is derived. Examples are given together with a CMOS circuit realizing both the FCCII and FICCI.

Keywords :

Current conveyor; Inverting current conveyor; Floating current conveyor.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : On the DVCC and the BOCCII as Adjoint Elements

Authors : Ahmed M. Soliman and Ramy S. Ahmed

Published In : Circuits Systems and Computers

ISSN : 0218-1266

Impact Factor : 0.1

Abstract :

The Differential Voltage Current Conveyor (DVCC) with its two polarities namely DVCC- and DVCC+ are reviewed together with their pathological element representations. Their two adjoint building blocks are the Balanced Output Current Conveyor (BOCCII) and the Balanced Output Inverting Current Conveyor (BOICCCII) are also discussed with their pathological element representations. The universal CMOS circuit realizing these four building blocks is also included.

The Nodal Admittance Matrix (NAM) stamp for the DVCC-, DVCC+, BOCCII and BOICCCII are also given. Among the four basic building blocks considered the DVCC- is the only floating building block.

Examples are given showing that some of the reported filters are related to each other by the adjoint network theorem.

Keywords :

Differential voltage current conveyor; Balanced output current conveyor and Inverting current conveyor.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Generation and Classification of Kerwin-Huelsman-Newcomb Circuits using the DVCC

Authors : Ahmed M. Soliman

Published In : Int. J. Circuit Theory and Applications

ISSN : 0098-9886

Impact Factor : 2.389

Abstract :

New circuits realizing the KHN and using three or four DVCC are generated from the basic KHN and inverted KHN block diagrams. The circuits are classified to two types, type A employs three DVCC and type B employs four DVCC. Each type includes four classes of circuits depending on the four possible integrator polarities. Each class can be realized by several circuits as will be demonstrated in the paper. All the eight possible sign combinations of the output voltages polarities are obtainable from the two types; four sign combinations from each type. The eight block diagrams are included to demonstrate the difference between each class of circuits. Spice simulation results demonstrating the practicality of the proposed filters are included.

Keywords :

Universal filters; Differential Voltage current conveyors; KHN circuit.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Low-voltage low-power CMOS RF low noise amplifier

Authors : Ahmed M. Soliman and Mohammed K. Salama

Published In : Int. J. Electronics and communication AEU

ISSN : 1434-8411

Impact Factor : 0.371

Abstract :

In this paper, a 1V, 2 GHz CMOS low-noise amplifier (LNA) was developed intended for use in the front-end receiver. The circuit is simulated in standard 0.25 μm CMOS MOSIS. The LNA gain is 25.675 dB, noise figure (NF) is 4 dB, reverse isolation (S_{12}) is -134.3 dB, input return loss (S_{11}) is -14.6 dB, output return loss (S_{22}) is -13.34 dB, and the power consumption is 5.13mA from a single 1V power supply. One of the features of the proposed design is using a three-component cascode limitation, one of it is a transistor, to reduce the supply voltage.

Keywords :

Low-noise amplifier; RF front-end; Global system for mobile communication (GSM); Global positioning system (GPS); Wireless local area network (WLAN).

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : A CMOS Differential Difference Operational Mirrored Amplifier

Authors : Ahmed M. Soliman and Ahmed Soltan

Published In : Electronics and communication AEU

ISSN : 1434-8411

Impact Factor : 0.371

Abstract :

The design of a high performance differential difference operational mirrored amplifier is presented. The proposed circuit is useful for continues – time analog signal processing. The circuit is developed using folded cascode amplifier and the floating current source. Several applications including grounded resistor, voltage amplifier, grounded inductor and oscillator circuit are presented. Simulation results for the DDOMA circuit and its applications are given.

Keywords :

Operational mirrored amplifier; Grounded resistor; Integrator; Simulated inductor; Oscillator.

Faculty of Engineering**Dept.** : Electronics and Communication Engineering**Name** : **Ahmed M. Soliman****Title** : New Current Mode Low-Pass Filter Using Identical Single Output Current Conveyors**Authors** : Ahmed M. Soliman**Published In** : Active and Passive Electronic Devices**ISSN** : 1555-0281**Impact Factor** : 0.371**Abstract** :

A new current mode low-pass filter using three single output inverting second generation current conveyors (ICCI) is introduced. The circuit uses three, ICCI+ and realizes an inverting low-pass response. The same circuit can also use three ICCI- and realizes a non-inverting low-pass response.

The proposed circuit employs four grounded resistors and two grounded capacitors and has independent control on Q and on the DC gain by varying a single grounded resistor. It is found that the proposed circuit can not be used with three CCII+ or with three CCII-. Two modified configurations using four identical single-output CCII and having very low input impedance are defined. It is found that the ICCI+ and the ICCI- are suitable for one of the two modified configurations. The CCII+ can be used with both of the modified configurations and the CCII- can not be used with any of the proposed circuits with the same conveyor numbers. Spice simulation results using 0.5 μm CMOS transistors are included to support the theoretical analysis.

Keywords :

Current mode filters; Current conveyors; Low-pass filters.

Faculty of Engineering

Dept. : Electronics and Communication Engineering

Name : **Ahmed M. Soliman**



Title : Current Mode Universal Filters with Grounded Passive Elements and Using Single Output Current Conveyors

Authors : Ahmed M. Soliman

Published In : Active and Passive Electronic Devices

ISSN : 1555-0281

Impact Factor : 0.00

Abstract :

Four current mode universal filters using single output current Conveyors are considered and compared in this paper. The circuits considered are those having independent control on the filter quality factor and using grounded resistors and capacitors. Important new results regarding the minimum number of circuit components of the filter to achieve these desirable features are given.

Keywords :

Current mode filters; Current conveyors.

Faculty of Engineering

Dept. : Electronics and Electrical Communications

Name : **Tamer M. Abuelfadl**



Title : Leaky Wave Antenna Realization by Composite Right/Left-Handed Transmission Line

Authors : A. F. Abdelaziz, T. M. Abuelfadl and O. L. Elsayed

Published In : Progress in Electromagnetics Research Letters

ISSN : 1937-6480

Impact Factor : 0.0

Abstract :

This paper presents a realization of composite right/left handed transmission lines using coupled microstrip lines. This structure exploits the advantages of the microstrip lines, while increases the coupling by a floating conductor at the ground plane. The performance of this composite right/left-handed line is demonstrated by both simulated and measured results, and they show good agreement. The designed line has broad bandwidth with low losses and small size. A novel dominant mode leaky wave antenna design, using the previous structure, is presented with backward to forward scanning capability.

Keywords :

Antennas; Frequency scanning; Metamaterial; Composite Right/Left-Handed transmission lines; Coupled lines; Microstrip coupled lines with slotted ground; Tight couplers.

Faculty of Engineering

Dept. : Electronics and Electrical Communications

Name : **Tamer M. Abuelfadl**



Title : Realization of Composite Right/Left-Handed Transmission Line Using Coupled Lines

Authors : Mostafa Hassan, Amir Atiya, Neamat El Gayar and Raafat El Fouly

Published In : Progress in Electromagnetics Research, PIER

ISSN : 1559-8985

Impact Factor : 4.735

Abstract :

This paper presents a method to construct composite right/left-handed transmission line using coupled lines. A general procedure to design a composite right/left-handed unit cell is presented. The procedure was used on a specific coupled line configuration, which is the coupled microstrip lines with slotted ground. It is shown that by proper design of the slotted ground, the coupling between the two microstrip lines can be increased dramatically keeping practical dimensions for the coupled line width and spacing. Moreover, with accurate slotted ground design, equal even and odd electrical lengths can be achieved. The performance of this composite right/left-handed line, which is characterized by backward waves with phase advance, is demonstrated by both simulated and measured results and they show good agreement. The realized composite right/left-handed transmission line has a broad bandwidth and small size.

Keywords :

Metamaterial; Composite Right/Left-Handed Transmission lines; Coupled lines; Microstrip coupled lines with slotted ground; Tight couplers.

Faculty of Engineering

Dept. : Electronics and Communication

Name : **Ragia I. Badr**



Title : Vertical Decomposition Approach for Optimization of Non-Quadratic Constrained Systems

Authors : Ragia I. Badr

Published In : The Mediteranian Journal of Measurement and Control

ISSN : 1743-931

Impact Factor : 0.027

Abstract :

In this paper, a well established control methodology is presented to handle the continuous demand of dealing with linear dynamic control problems with state and/or control constraints while optimizing a convex cost function, not necessarily quadratic. Through introducing coordinating variables, and under the assumption that the system is stabilizable, a well developed and systematic algorithm is presented and applied to several examples showing its efficiency in yielding the optimal solution while satisfying system constraints.

Keywords :

Constrained linear systems; Convex cost function; Optimization.

Faculty of Engineering**Dept.** : Electronics and Communications**Name** : **Serag Eldin E. Habib****Title** : Particle Swarm Optimization for HW/SW Partitioning**Authors** : M. B. Abdelhalim and S. E.-D. Habib**Published In** : Particle Swarm Optimization**ISBN** : 9789-53-7619-48-0 **Impact Factor** : 0.0**Abstract** :

Embedded systems typically consist of application specific hardware parts and programmable parts, e.g. processors like DSPs, core processors or ASIPs. In comparison to the hardware parts, the software parts are much easier to develop and modify. Thus, software is less expensive in terms of costs and development time. Hardware, however, provides better performance. For this reason, a system designer's goal is to design a system fulfilling all system constraints. The co-design phase, during which the system specification is partitioned onto hardware and programmable parts of the target architecture, is called Hardware/Software partitioning. This phase represents one key issue during the design process of heterogeneous systems. Some early co-design approaches [Marrec et al. 1998, Cloute et al. 1999] carried out the HW/SW partitioning task manually. This manual approach is limited to small design problems with small number of constituent modules. Additionally, automatic Hardware/Software partitioning is of large interest because the problem itself is a very complex optimization problem.

In this Chapter, we investigate the application of the Particle Swarm Optimization (PSO) technique for solving the Hardware/Software partitioning problem. The PSO is attractive for the Hardware/Software partitioning problem as it offers reasonable coverage of the design space together with $O(n)$ main loop's execution time, where n is the number of proposed solutions that will evolve to provide the final solution.

Keywords :

Embedded systems; Hardware/Software co-design; Hardware/ software partitioning; Particle swarm optimization; Re-excited PSO.

Faculty of Engineering

Dept. : Electronics and Communications

Name : **Essam A. Hashish**



Title : Design of Wideband Planar Absorbers Using Composite Materials

Authors : Essam A. Hashish, Saad M. Eid and Samir F. Mahmoud

Published In : ACES Journal 24 (4): 413-418 (2009)

ISSN : 1054-4887

Impact Factor : 0.333

Abstract :

Design of planar microwave absorbers usually incorporates the use of either magnetic or electric lossy materials. In this study, chiral materials are included in the design process to the structure of these absorbers. The genetic algorithm is used to obtain suitable solutions satisfying the design requirements. Wideband absorbers are designed using different configurations and presented in this papers. It is shown the inclusion of chiral materials in the design process leads to more efficient absorbers.

Keywords :

Electromagnetic absorbers; Chiral materials; Composite materials.

Faculty of Engineering

Dept. : Electronics and Communications

Name : **Essam A. Hashish**



Title : Dual-Band N-Shaped Patch Antenna Loaded by Lumped Elements

Authors : Asmaa H. Moustafa, Esmat A. Abdallah and Essam A. Hashish

Published In : Microwave and Optical Technology Letters 51(11): 2534-2537 (2009)

ISSN : 0895-2477

Impact Factor : 0.743

Abstract :

This article presents a dual-band circular N-shaped microstrip patch antenna loaded by a shorting pin and lumped R-C circuit, hence a resonant R-L-C circuit is introduced. Loading by shorting pin excites the zero fundamental mode of the circular patch antenna (TM₀₁₀), and it shifts the first fundamental mode (TM₁₁₀) to higher one. N-shaped microstrip patch antenna is used as a modified circular microstrip patch antenna with reduced size. The proposed antenna is designed and fabricated on two-layered substrate. A comprehensive parametric study has been carried out on values of R and C to optimize the antenna performance.

Keywords :

Microstrip antenna; N-shaped; Dual band; Shorting pin; Wideband.

Faculty of Engineering

Dept. : Electronics and Communications

Name : **Essam A. Hashish**



Title : Inversion of Lossy Dielectric Profiles Using Particle Swarm Optimization

Authors : A. M. Emad, E. A. Hashish and M. I. Hassan

Published In : Progress in Electromagnetics Research M 9: 93-105 (2009)

ISSN : 1937-8726

Impact Factor : 0.00

Abstract :

An electromagnetic inversion method is proposed for the reconstruction of lossy dielectric slabs. The inversion is done using particle swarm optimization hybridized with Quasi-Newton algorithm. The inversion process is applied to reconstruct dielectric slabs with discrete or continuous profiles. Accurate reconstruction of lossy dielectric slabs is obtained from inversion of reflection coefficient data of normally incident plane waves in the specified frequency range. The proposed algorithm is also tested using noisy data and showed satisfactory performance.

Faculty of Engineering

Dept. : Electronics and Communications

Name : **Emad K. Al-Hussaini**



Title : Performance of MIMO System Through Nakagami Fading Channel with Arbitrary Fading Parameters

Authors : Khodr A. Saaifan and Emad K. Al-Hussaini

Published In : Wireless Personal Communications

ISSN : 0929-6212

Impact Factor : 0.331

Abstract :

In this paper, the analytical and simulation results of the bit error rate (BER) performance for a multiple- input multiple-output (MIMO) system with an arbitrary number of transmit and receive antennas are developed for the uplink transmission. The fading channel is assumed to follow Nakagami-m distribution with correlation among branches. The BER is expressed in terms of Lauricella's multivariate hypergeometric function for both independent and correlated antenna branches for BPSK system.

Keywords :

MIMO systems; Correlated Nakagami fading channels; Space diversity; Space-time block code.

Faculty of Engineering**Dept.** : Electronics and Communications**Name** : **Mohsen A. A. Rashwan****Title** : Fassieh®; a Semi-Automatic Visual Interactive Tool for the Morphological, PoS-Tags, Phonetic, and Semantic Annotation of the Arabic Text Corpora**Authors** : M. Attia, Mohsen A. A. Rashwan and M. A. Al-Badrashiny**Published In** : IEEE Transactions on Audio, Speech, and Language Processing A Publication of the IEEE Signal Processing Society**ISSN** : 1558-7916**Impact Factor** : 1.848**Abstract** :

This paper introduces an Arabic text annotation tool called Fassieh®. Via a sophisticated interactive GUI application, Fassieh® makes easy to build structured large standard written Arabic corpora, then allows the production of fundamental linguistic analyses; i.e., language factorizations, at high coverage and accuracy rates over such corpora. Arabic morphological analysis, part-of-speech (PoS)-tagging, full phonetic transcription (diacritization), and lexical semantics analysis are the most significant Arabic language factorizations currently supported by Fassieh®. The high inherent ambiguity of these analyses is statistically resolved in Fassieh® which also affords a multitude of auxiliary features enabling a guided, normalized, and efficient proofreading of any part of the factorized corpus. The paper first reviews the highly inflective and derivative nature of Arabic language, our Arabic language factorization models, and the associated statistical disambiguation methodology. Afterwards, we present Fassieh® which is not only a text annotation tool, but is also an evaluation, demonstrative, and tutorial means of Arabic natural language processing (NLP).

Keywords :

Annotation; Arabic; diacritization; Interactive text annotation; Language factorization; Lexical analysis; Lexical semantics; Lexicon; Maximum a posteriori (MAP); Morphological analysis; Morphology; Natural language processing (NLP); Noisy channel model; Part-of-speech (PoS) tagging; Phonetic transcription; Phonology; Search trellis; Semantic analysis; Statistical disambiguation; Statistical language modeling (SLM); Stochastic modeling; text annotation tools; Written language processing.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Ehab Y. A. Digid**



Title : Efficient Combined Scheduling of Hard and Soft Real-Time Tasks in Multiprocessor Systems under Processing Power-Share Strategy

Authors : Ehab Y. A. Digid

Published In : Parallel Processing Letters

ISSN : 0129-6264

Impact Factor : 0.0

Abstract :

Real-time systems are being increasingly used in several applications which require predictable performance and contain tasks that have deadline to be met. Many complex real-time applications require modern operating systems capable of scheduling multiple classes of tasks in an integrated way. In addition, scheduling these applications needs high utilization of the available processing power on processors to accommodate as many tasks as possible while satisfying the required deadlines of these tasks. In this paper, we propose a combined heuristic approach to schedule a set of independent soft and hard real-time tasks in multiprocessor computing systems. Each of these tasks is characterized by its arrival time, deadline and the required processing power. The proposed approach distributes the total available processing power of any processor, if it is needed and possible, among more than one task, with higher priority and enough processing power to hard real-time tasks, to execute them on that processor simultaneously. Using this strategy can be used as a good tool to guide the scheduling process efficiently. In addition, it can help to optimize the processor utilization and maintains higher success ratio by maximizing the schedulability of soft tasks without jeopardizing the schedulability of hard tasks.

Keywords :

Real-time multiprocessor computing systems; Integrated scheduling; Soft and hard real-time tasks; Scheduling algorithms; Processing power utilization; Schedulability.

Faculty of Engineering**Dept.** : Engineering Mathematics and Physics**Name** : **Ehab Y. A. Digi****Title** : Interconnect Synthesis in High Speed Digital VLSI Routing**Authors** : Ehab Y. Abdel Maksoud and Moustafa A. Sayed**Published In** : Int. J. of Open Problems in Computer Science and Mathematics 2(3): 383-415 (2009)**ISSN** : 1998 - 6262**Impact Factor** : 0.00**Abstract** :

The advent of the nanotechnology has introduced new challenges and non-conventional problems to high speed digital Very Large Scale Integrated (VLSI) design. Moreover, the resultant progress of manufacturing technology is widening the gap between current Computer Aided Design (CAD) tools and VLSI technologies. This is reflected clearly in the IC design process where the Integrated Circuit (IC) flow has become very iterative, especially in the back end phase. These returns to the complexity of placement and routing phases, and the inadequate approximations used for interconnect modeling and characterization. In this paper, we introduce a new performance-wise approach that combines connection graphs with a basic area routing algorithm to complete the routing without or with minimal iterations. In this approach, the routing elements are ordered with respect to its space not with respect to their relative position, to modify its complexity and optimize memory requirements to fit the problem in hand. This can help to yield a time complexity of $O(n^2)$ and a memory complexity in worst case $O(n^2)$, where n is the size of the space. Instead of employing the traditional flow that uses inaccurate interconnect models and characterization techniques, and then analyze the output to point out errors in the resulting layout, we propose Interconnect Synthesis as a framework. Within this framework, we introduce an enhanced routing algorithm that outperforms traditional routers and present a more accurate interconnect modeling and signal characterization techniques for interconnect synthesis. Consequently, the output of the routing phase will no longer suffer from the error in the timing or the signal integrity constraints. Finally, the analysis phase will become merely a verification phase, not a process for re-iteration.

Keywords :

Detailed routing; Global routing; High speed digital VLSI design; Interconnect synthesis; Interval labeling scheme; Line search routers; Sequential routing.

Faculty of Engineering**Dept.** : Engineering Mathematics and Physics**Name** : **Ehab Y. A. Digi****Title** : A Semi-Markov Decision Algorithm for Optimal Maintenance of a Multistage Two-Unit Standby System**Authors** : Ehab Y. Abdel Maksoud and Magdi S. Moustafa**Published In** : Operational Research Int. J. 9(2): 167-182 (2009)**ISSN** : 1109 - 2858**Impact Factor** : 0.00**Abstract** :

The semi-Markov decision model is a powerful tool in analyzing sequential decision processes with random decision epochs for a multi-state deteriorating system subject to aging and fatal shocks. In this paper, we propose a model for a two-unit standby system where a cold standby unit is attached to an operating (active) one. For this model, the active unit goes through a finite number of states of successive degradation preceding the failure, while the other one is in cold standby state. At each deterioration state of the active unit, two types of maintenance are considered, minimal and major, depending on the degrading level. The minimal maintenance aims to improve the degradation of the unit by recovering it to the previous degradation stage. The maximum allowable number of minimal maintenances for all states of the active unit must not exceed a certain limit. On the other hand, the major maintenance is necessary when the active unit fails. Once this maintenance is completed, the unit is restored to as good as new. To make the system operate more time without any interruption, the standby unit can be switched online until the active unit finishes its minimal or major maintenance. The switch between the two units is perfect and switchover is instantaneous. After using the standby unit, it is serviced or overhauled to maintain it in as good as new state. We use an iterative numerical approach, based on the policy iteration method, to drive the optimal state-dependent maintenance policy that minimizes the long-run expected cost rate of the system. Finally, numerical examples are given to illustrate and evaluate the performance of the proposed policy.

Keywords :

Multistage semi-Markov deteriorating systems; Condition-based preventive maintenance; Continuous inspection; Minimal and major maintenances; Two-unit cold standby systems; Expected long-run cost rate.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Hatem Adel Fayed**



Title : Hyperspherical Prototypes for Pattern Classification

Authors: Hatem Fayed, Amir Atiya and Sherif Hashem

Published In : Pattern Recognition and Artificial Intelligence

ISSN : 0218-0014

Impact Factor: 0.66

Abstract :

The nearest neighbor method is one of the most widely used pattern classification methods. However its major drawback in practice is the curse of dimensionality. In this paper, we propose a new method to alleviate this problem significantly. In this method, we attempt to cover the training patterns of each class with a number of hyperspheres. The method attempts to design hyperspheres as compact as possible, and we pose this as a quadratic optimization problem. We performed several simulation experiments, and found that the proposed approach results in considerable speed-up over the k-nearest neighbor method while maintaining the same level of accuracy. It also significantly beats other prototype classification methods (Like LVQ, RCE and CCCD) in most performance aspects.

Keywords :

Pattern classification; Nearest neighbor; Hyperspherical prototypes.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Hatem Adel Fayed**



Title : A Novel Template Reduction Approach for the K-Nearest Neighbor Method

Authors: Hatem Fayed and Amir Atiya

Published In : Ieee Transactions on Neural Networks

ISSN : 1045-9227

Impact Factor: 3.726

Abstract :

The K-nearest neighbor (KNN) rule is one of the most widely used pattern classification algorithms. For large data sets, the computational demands for classifying patterns using KNN can be prohibitive. A way to alleviate this problem is through the condensing approach. This means we remove patterns that are more of a computational burden but do not contribute to better classification accuracy. In this brief, we propose a new condensing algorithm. The proposed idea is based on defining the so-called chain. This is a sequence of nearest neighbors from alternating classes. We make the point that patterns further down the chain are close to the classification boundary and based on that we set a cutoff for the patterns we keep in the training set. Experiments show that the proposed approach effectively reduces the number of prototypes while maintaining the same level of classification accuracy as the traditional KNN. Moreover, it is a simple and a fast condensing algorithm.

Keywords :

Condensing; Cross validation; Editing; K-nearest neighbor (KNN); Template reduction.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Hatem Adel Fayed**



Title : Inputs Selection for Artificial Neural Networks for Multivariate Time Series

Authors: Zeinab Ashour and Hatem Fayed

Published In : Material Science Research India

ISSN : 0973-3469

Impact Factor: 0.0

Abstract :

A new method in selecting the inputs of the neural networks for multivariate time series is proposed. The input and output time series are analyzed and suitable mathematical models are built in the input-output model parametric representation. The inputs to the best input-output models are chosen as the inputs to the neural network model. The estimates from different models are then combined to obtain an unbiased estimate of the output series. The resulting combined neural network model is used in forecasting the bench marking gas furnace multivariate time series. The new developed procedure outperformed previously used forecasting techniques.

Keywords:

Artificial neural networks; Inputs Selection; Multivariate time series.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Hanafi S. H. Elzoheiry**



Title : A Numerical Study of Adding an Artificial Dissipation Term for Solving the Nonlinear Dispersive Equations $K(N,N)$

Authors: Abassy T., El- Zoheiry H. and El-Tawil M.

Published In : Computational and Applied Mathematics

ISSN : 0377-0427

Impact Factor: 1.048

Abstract :

A linearized implicit finite difference method is devised for $K(n,n)$. The stability and accuracy of the proposed methods are discussed. A compacton wave solution of the equation $K(n,n)$ is used to examine the accuracy and efficiency of the proposed methods and study the effect of the added artificial dissipation term to solve the $K(n,n)$ equation using finite difference method. The dynamics of waves having various initial wavepackets are discussed.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Samia Ibrahim Mostafa**



Title : Analytical Study for the Ability of Nonlinear Transmission Lines to Generate Solitons.

Authors: Samia I. Mostafa

Published In : Chaos, Solitons and Fractals

ISSN : 0960-0779

Impact Factor: 2.98

Abstract :

The ability of the nonlinear transmission lines (NLTL) has been studied analytically, in this paper to generate solitons and to cause waveform spreading. This can be achieved by balancing nonlinearity and dispersion. A new technique of improved tanh method (ITM) and improved sech methods (ISM) is applied to the nonlinear partial differential equation that describes the NLTL. It is found that the parameters of the transmission line play an important role in controlling the shape of the soliton.

Keywords :

Nonlinear transmission lines (NLTL); Solitons; Improved tanh method (ITM); Improved sech methods (ISM).

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Samir Abohadima**



Title : Dynamic Analysis of Nonuniform Beams on Elastic Foundations

Authors: Samir Abohadima and Mohamed Taha

Published In : The Open Applied Mathematics Journal, Bentham Open

ISSN : 1874-1142

Impact Factor: 0.00

Abstract :

An analytical solution for the free vibration of a nonuniform flexural beam resting on an elastic foundation is obtained. The characteristics of the beam are assumed variable over the beam length while the soil is considered of Winkler type. A power distribution model is used to simulate the variations in the beam geometry, beam material and soil stiffness over the beam length. The fourth order differential equation of beam vibration under appropriate boundary conditions is transformed to the Bessel equation by factorization. Mode shapes and damped natural frequencies of the beam are obtained for wide range of beam-foundation system characteristics. Numerical comparison demonstrates that the present model results for uniform case agree with those found in literature. The present model analytical solutions may be used to verify the accuracy of other numerical and approximate solutions.

Keywords :

Damped vibration; Tapered beam; Differential equation; Variable coefficients; Series solution; Mode shapes and natural frequencies.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Tarek M. El-Mistikawy**



Title : Comment on: "the Three-Dimensional Flow past a Stretching Sheet and the Homotopy Perturbation Method", by P. D. Ariel, Computers and Mathematics with Applications 54 (2007) 920-925

Authors : Tarek M. El-Mistikawy

Published In : Computers and Mathematics with Applications

ISSN : 0898-1221

Impact Factor : 0.997

Abstract :

In his application of the homotopy perturbation (HP) method to the problem of the three-dimensional flow past a stretching sheet, P.D. Ariel [The three-dimensional flow past a stretching sheet and the homotopy perturbation method, Comput. Math. Appl. 54 (2007) 920-925] encountered secular terms in the second order approximation, which he could not avoid. It is shown here that these secular terms can be removed by coordinate straining. Moreover, the form of an HP solution, which is free from secular terms at all levels of approximation and which can be determined recursively, is indicated.

Keywords :

Homotopy perturbation method; Secular terms; Coordinate straining; Uniformly valid solution.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Tarek M. El-Mistikawy**



Title : Asymptotic Structure Incorporating Double and Triple Decks

Authors : Tarek M. El-Mistikawy

Published In : Zeitschrift für Angewandte Mathematik und Mechanik

ISSN : 0044-2267

Impact Factor : 0.6

Abstract :

The flow along a flat plate of finite length develops – near the trailing edge – into a double deck structure when it is a jet layer with quiescent outer flow and into a triple deck structure when it is a boundary layer with streaming outer flow. It is shown here that the transfer from one structure to another is singular; requiring matching of two main decks. The double deck structure is, in essence, a triple deck structure with collapsing upper deck.

Keywords :

Asymptotic structure; Double deck; Triple deck; Jet layer; Boundary layer; Trailing edge.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Tarek M. El-Mistikawy**



Title : Limiting Behavior of Micropolar Flow Due to a Linearly Stretching Porous Sheet

Authors : Tarek M. El-Mistikawy

Published In : European Journal of Mechanics-B/Fluids

ISSN : 0997-7546

Impact Factor : 1.379

Abstract :

The boundary layer flow of a micropolar fluid due to a linearly stretching sheet is studied in the limit of a vanishing coupling parameter. Asymptotic expansions of the stream function and the micro-rotation are sought after. The straightforward expansions involve secular terms. This singular behavior is removed by the novel approach of replacing the coordinate, measuring distances normal to the sheet, by two strained coordinates. This makes it possible to obtain exact (series) solutions for all levels of approximation. One can obtain results, as accurate as one would wish, by retaining enough terms of the expansions. Suction and injection through the sheet are included.

Keywords :

Micropolar flow; Stretching sheet; Suction and injection; Limiting behavior; Coordinate straining.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Tarek M. El-Mistikawy**



Title : Subsonic Triple Deck Flow Past an Eroding Hump on a Horizontal Flat Plate.

Authors : Tarek M. El-Mistikawy and Fayza M. El-Fayez

Published In : International Journal of Applied Mathematics and Physics

ISSN : 0974-8059

Impact Factor : 0.0

Abstract :

The problem of subsonic viscous flow above a horizontal flat plate, having a contamination spot in the form of a hump that erodes shedding its particles to the flow, is treated within the framework of the triple deck theory. The lower deck problem has several new features. It is intrinsically unsteady; i.e. the unsteadiness is due to the flow and not externally imposed on it. It has a moving boundary, as a result of the erosion of the hump both vertically and horizontally. It contains an additional variable, the concentration, together with its transport equation and abruptly changing surface conditions. It involves pressure variation across the lower deck, due to buoyancy. Numerical solutions are obtained starting from a steady hump flow till the complete removal of the hump and its particles from the computational domain. Typical results are presented, showing how the erosion of the hump progresses and how the contaminant spreads. The roles of diffusivity and buoyancy are also assessed.

Keywords :

Subsonic triple deck; Unsteady hump flow; Moving boundary; Numerical solution; Erosion; Contamination.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : The Average Solution of A Stochastic Nonlinear Schrodinger Equation Under Stochastic Complex Non-Homogeneity and Complex Initial Conditions

Authors : Magdy A. El-Tawil

Published In : Trans. on Comput. Sci III: 143-170 (2009)

ISSN : 1866-4733

Impact Factor : 0.0

Abstract :

In this paper, a stochastic nonlinear Schrodinger equation is studied under stochastic complex inhomogeneity in a limited time interval through homogeneous boundary conditions and complex initial conditions. The analytical solution for the linear case is introduced. The Wiener-Hermite expansion together with the the perturbation method, the WHEP technique, is used to get approximate ensemble average of the stochastic solution process. Using Mathematica, the solution algorithm is tested through computing the first order approximation of the solution ensemble average. The method of solution is illustrated through case studies and figures which demonstrate the effects of the initial conditions as well as the input inhomogeneities.

Keywords :

Stochastic nonlinear schrodinger equation; Perturbation; Eigenfunction expansion; WHEP technique; Wiener-Hermite expansion.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : On Perturbative Cubic Nonlinear Schrodinger Equations Under Complex Non-homogeneities and Complex Initial Conditions

Authors : Magdy A. El-Tawil and Maha A. El-Hazmy

Published In : Differential Equations and Nonlinear Mechanics

ISSN : 00-00

Impact Factor : 0.0

Abstract :

In this paper, a perturbing nonlinear Schrodinger equation is studied under general complex non-homogeneities and complex initial conditions for zero boundary conditions. The perturbation method together with the eigenfunction expansion and variational parameters methods are used to introduce an approximate solution for the perturbative nonlinear case for which a power series solution is proved to exist. Using Mathematica, the symbolic solution algorithm is tested through computing the possible approximations under truncation procedures. The method of solution is illustrated through case studies and figures.

Keywords :

Non-linear schrodinger equations; Eigenfunction expansion; Mathematica.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : Voting Systems as Linear Transformation Models

Authors : Magdy A. El-Tawil

Published In : The Open Applied Mathematics Journal 3: 53-67 (2009)

ISSN : 1874-1142

Impact Factor : 0.0

Abstract :

In this paper, a new voting system model is introduced as a linear transformation model. The size of compartmental populations in each political group corresponding to every voted subject, the population weights, the weighted votes policy against each political group, the “Yes” and “No” rates, the “No” rejection policy and the “Yes” increase policy are the inputs / outputs of the introduced linear models. Some parametric studies have been achieved concerning the answer of some interesting questions, for example: the effect of unfair election policy, the critical population size of the opposite political group and others. The inverse problem and a stochastic case are also introduced.

Keywords :

Voting system; Linear transformation; Matrices.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : Approximate Solution of a Mixed Nonlinear Stochastic Oscillator

Authors : Magdy A. El-Tawil and Amna S. Al-Johani

Published In : Computer and Applied Mathematics with Applications

ISSN : 0898-1221

Impact Factor : 0.997

Abstract :

In this paper, nonlinear oscillators under mixed quadratic and cubic nonlinearities with stochastic inputs are considered. Different methods are used to obtain second order approximations, namely; the Wiener-Hermite and perturbation (WHEP) technique and the homotopy perturbation method (HPM). Some statistical moments are computed for the different methods using mathematica 5. Comparisons are illustrated through figures for different case-studies.

Keywords :

Nonlinear stochastic differential equations; Wiener-Hermite expansion; WHEP technique; Homotopy perturbation; Mathematica.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : Solving Nonlinear Diffusion Equations without Stochastic Homogeneity using Homotopy Perturbation Method

Authors : Magdy A. El-Tawil and Noha A. Al-Mulla

Published In : International Journal of Nonlinear Sciences and Numerical Simulation 10(3): 687-698 (2009)

ISSN : 1565-1339

Impact Factor : 8.479

Abstract :

In this paper, the diffusion equations under square and cubic nonlinearities with stochastic no homogeneity are solved using the homotopy perturbation method (HPM). The solution average is computed up to fourth order approximation while the covariance is computed up to second order approximation only. The method of analysis is illustrated through case studies and figures.

Keywords :

Non-linear stochastic diffusion equations; Homotopy perturbation.

Faculty of Engineering

Dep. : Engineering Mathematics and Physics

Name : **Magdy A. El-Tawil**



Title : The approximate solution of a nonlinear diffusion equation using some techniques, a comparison study

Authors: Magdy A. El-Tawil and Noha A. Al-Mulla

Published In : Journal Applied Mathematics and Computing JAMC

ISSN 1598-5865

Impact Factor 0.0

Abstract :

In this paper, the diffusion equation under square nonlinearity is solved using the WHEP technique, the Homotopy perturbation method (HPM) and Pickard approximation technique. Only the first order approximation is considered with making corrections in the WHEP case. The methods of solution are illustrated through figures, comparisons among different methods and some parametric studies.

Keywords:

Non-linear stochastic diffusion equations, Homotopy perturbation, WHEP technique, Pickard approximation.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Mohamed S. A. El-Kader**



Title : Collision-induced Light Scattering Spectra and Pair-Polarizability Trace and Anisotropy of Gaseous Neon

Authors : M. S. A. El-Kader

Published In : Physics Letters A

ISSN : 0375-9601

Impact Factor : 2.174

Abstract :

New empirical pair-polarizability trace and anisotropy parameters, consistent with the spectroscopic measurements of neon gas at room temperature are obtained by fitting the calculated lineshapes and their first few even moments to the measured polarized and depolarized light scattering spectra. Good agreement with *ab initio* results in the literature is obtained and profiles calculated with these models are in excellent agreement with experiments.

Keywords :

Pair-polarizability trace and anisotropy of light scattering spectra / Neon.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Mohamed S. A. El-Kader**



Title : Isotropic and Anisotropic Collision-Induced Light Scattering Spectra from High Temperature Gaseous Mercury

Authors : M. S. A. El-Kader

Published In : Physics Letters A

ISSN : 0375-9601

Impact Factor : 2.174

Abstract :

With the help of damping functions, the long-range contributions to the pair polarizability trace and anisotropy needs to be suppressed at short interatomic distances in order to get the same profiles of the isotropic and anisotropic collision-induced light scattering spectra of mercury vapor at different temperatures as the experimental ones.

Keywords :

Collision-induced light scattering spectra; Mercury.

Faculty of Engineering**Dept.** : Engineering Mathematics and Physics**Name** : **Mohamed S. A. El-Kader****Title** : Contributions of Multipolar Polarizabilities to the Isotropic and Anisotropic Light Scattering Induced by Molecular Interactions in Gaseous Methane.**Authors** : M. S. A. El-Kader, S. El-Sheikh, T. Bancewicz and R. Hellmann**Published In** : Chemical Physics**ISSN** : 0021-9606**Impact Factor** : 3.149**Abstract** :

The binary isotropic and anisotropic collision-induced light scattering spectra of gaseous methane at room temperature are analyzed in terms of a recent *ab initio* intermolecular potential and interaction-induced pair polarizability trace and anisotropy models, using quantum line-shapes computations. The translational spectra at relatively low frequencies are determined largely by the effects of bound and free transitions. At intermediate frequencies the spectra are sensitive to both the attractive part of the potential and the short-range part of the polarizability trace and anisotropy. The high frequency wings are discussed in terms of the collision-induced rotational Raman effect and estimates for the dipole-quadrupole polarizability **A** and the dipole-octopole polarizability **E** are obtained and checked with recent *ab initio* theoretical values.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Mohamed M. Nassar**



Title : Analysis of Multiple Interfacial Cracks in an Orthotropic Bi-Material Subjected to Anti-Plane Shear Loading

Authors : M. S. Matbuly and M. M. Nassar

Published In : Engineering fracture mechanics

ISSN : 0013-7944

Impact Factor : 1.713

Abstract :

The present work concerns with the elasto-static problem of double interfacial cracks located between two dissimilar orthotropic plates. The dimensions of the bi-material composite, are assumed to be finite. The crack faces are subjected to anti-plane shear traction. Finite Fourier transforms are applied to reduce the problem to a triple series equations and then to a system of singular integral equations with Cauchy type singularity. That are solved numerically using Gauss–Chebyshev integration formulae. The stress intensity factors, are determined in a closed form expressions. The obtained results agreed with the previous analytical ones. Further, a parametric study is introduced to investigate the effects of the geometric and elastic characteristics of the composite on the values of the stress intensity factors.

Faculty of Engineering

Dept. : Engineering Mathematics and Physics

Name : **Mohamed M. Nassar**



Title : Natural Frequencies of a Functionally Graded Cracked Beam
Using the Differential Quadrature Method

Authors : M. S. Matbuly, O. Ragb and M. M. Nassar

Published In : Applied Mathematics and Computations

ISSN : 0096-3003

Impact Factor : 0.961

Abstract :

The present work is concerned with the free vibration analysis of an elastically supported cracked beam. The beam is made of a functionally graded material and rested on a Winkler–Pasternak foundation. The line spring model is employed to formulate the problem. The method of differential quadrature is applied to solve it. The obtained results agreed with the previous similar ones. Further, a parametric study is introduced to investigate the effects of the geometric and elastic characteristics of the problem on the values of natural frequencies and mode shape functions.

Faculty of Engineering**Dept.** : Engineering Mathematics and Physics**Name** : **Mohamed H. Farouk****Title** : A Comparison Study on Wavelet Sparsification for Solving Acoustic Scattering Problems over a Wide Frequency Range**Authors** : Maha Hassanein and M. H. Farouk**Published In** : Computational Methods in Engineering Science and Mechanics 10: 91-101 (2009)**ISSN** : 1550–2287**Impact Factor** : 0.0**Abstract** :

Solution of the integral equation of acoustic scattering problem results in an operator/matrix equation. The resulting matrices are complex and highly dense. The complexity of solving such equations exaggerates as the frequency of scattered acoustic wave increases. Wavelets can be used in sparsifying the problem matrix and accordingly reduce the solution complexity. In this work, two approaches to the sparsification process are used. The first one utilizes the properties of the discrete-wavelet transform (DWT) of a matrix while the other applies the expansion of an unknown function in terms of orthogonal wavelet bases within the method of moment. The matrix resulting from either technique is then thresholded to obtain a highly sparse matrix. The complexities of different forms of such sparsification operators are compared for the solution of the acoustic scattering from a hard sphere over a wide frequency range. A wavelet-based preconditioning is also employed to improve the accuracy of the sparsified system of equations.

The results show that the wavelet bases expansion gives a solution with lower complexity for low problem size. The use of DWT achieves higher accuracy than wavelet-bases method with larger complexity. DWT preconditioners reduces the error resulting from the sparsification process on a slight increase in the computational load. Tests on larger problem sizes show that the iterative solution enhances the complexity.

Keywords :

Acoustic scattering; Integral equation; Wavelet basis; Sparse matrices; Discrete wavelet transform.

Faculty of Engineering

Dept. : Irrigation and Hydraulics

Name : **Ahmed E. A. Hassan**



Title : Contaminant Transport in Groundwater in the Presence of Colloids and Bacteria: Model Development and Verification

Authors : Hesham M. Bekhit, Mohamed El-Kordy and Ahmed E. Hassan

Published In : J. Contaminant Hydrology

ISSN : 0169-7722

Impact Factor : 2.106

Abstract :

Colloids and bacteria (microorganisms) naturally exist in groundwater aquifers and can significantly impact contaminant migration rates. A conceptual model is first developed to account for the different physiochemical and biological processes, reaction kinetics and different transport mechanisms of the combined system (contaminant-colloids-bacteria). All three constituents are assumed to be reactive with the reactions taking place between each constituent and the porous medium and also among the different constituents. A general linear kinetic reaction model is assumed for all reactive processes considered. The mathematical model is represented by fourteen coupled partial differential equations describing mass balance and reaction processes. Two of these equations describe colloid movement and reactions with the porous medium, four equations describe bacterial movement and reactions with colloids and the porous medium and the remaining eight equations describe contaminant movement and its reactions with bacteria, colloids and the porous medium. The mass balance equations are numerically solved for two-dimensional groundwater systems using a third-order, total variance-diminishing scheme (TVD) for the advection terms. Due to the complex coupling of the equations, they are solved iteratively each time step until a convergence criterion is met. The model is tested against experimental data and the results are favorable.

Keywords :

Contaminant transport; Groundwater modeling; Colloid-associated transport; Bacteria-associated transport.

Faculty of Engineering**Dept.** : Irrigation and Hydraulics**Name** : **Ahmed E. A. Hassan****Title** : Using Markov Chain Monte Carlo to Quantify Parameter Uncertainty and its Effect on Predictions of a Groundwater Flow Model**Authors** : Ahmed E. Hassan, Hesham M. Bekhit and Jenny B. Chapman**Published In** : Environmental Modelling and Software**ISSN** : 1364–8152**Impact Factor** : 2.659**Abstract** :

A statistical Bayesian framework is used to solve the inverse problem and develop the posterior distributions of parameters for a density-driven groundwater flow model. This Bayesian approach is implemented using a Markov Chain Monte Carlo (MCMC) sampling method. Three sets of data pertaining to the location of the freshwater-seawater transition zone exist for the site, including chemistry data, hydraulic head data and newly collected magnetotelluric (MT) data. A sequential conditioning approach is implemented where the chemistry data and MT-converted salinity are combined as a single data set and are used to first condition the parameter distributions. The head data are subsequently used as a second conditioning data set where the posterior distribution developed by the first conditioning is used as a prior for this second conditioning. Results of this analysis indicate that conditioning on the available data sets yields dramatic reduction of uncertainty compared to unconditioned simulations, especially for the recharge-conductivity ratio. This ratio controls the location of the transition zone and the conditioning results in a smaller range of variability compared to the distribution used in previous modelling of the site. Using the conditioned distributions to solve the density-driven flow problem in a stochastic framework results in a range of output flow fields that is much narrower than the previous model. The ensemble mean of these solutions and the uncertainty bounds expressed by the mean \pm one standard deviation lie within the uncertainty bounds of the original model.

Keywords :

MCMC; Numerical modeling; Conditioning; Groundwater model calibration; Inverse problems.

Faculty of Engineering

Dept. : Irrigation and Hydraulics

Name : **Ahmed M. Abdel Sattar**



Title : A Wavelet-Galerkin Solution to the Water Hammer Equations

Authors : Ahmed M. Abdel Sattar, J. Dickerson and H. Chaudhry

Published In : Hydraulic Engineering

ISSN : 0733-9429

Impact Factor : 1.272

Abstract :

In this paper, a Wavelet-Galerkin method is utilized to solve the hyperbolic partial differential equations describing transient flow in a simple pipeline. Two wavelets (Haar and Daubechies) are utilized as bases for the Galerkin scheme. The governing equations are solved for the expansion coefficients, which are then used to reconstruct the signal at the downstream end of the pipeline; the computed results are in an excellent agreement with those calculated by using the MOC including laminar or linearized turbulent friction terms. Most importantly, the Wavelet-Galerkin approach allows the transient flow equations to be solved directly for the expansion coefficients at a certain level of resolution. This can be used to form the wavelet multiresolution framework that can be utilized for further analysis, such as feature extraction and signal identification.

Keywords :

Transient flow; Pipelines; Wavelet-Galerkin; Hyperbolic PDE; Water-hammer equations; Wavelet decomposition; Haar; Daubechies; Leak; Blockage.

Faculty of Engineering

Dept. : Mechanical Power Engineering

Name : Zeinab Saleh Safar



Title : Assessment of Particulate Matter and Lead Levels in the Greater Cairo Area for the Period 1998-2007

Authors : Zeinab S. Safar

Published In : J. Advanced Reserch

ISSN : 2090-1232

Impact Factor : 3.00

Abstract :

Health Risk Assessment study which was conducted in 1994 for the Greater Cairo (GC) area investigated that the environmental health risks to Cairo residents are lead and particulate matter and they are the area's major health hazards. In order to determine spatial and temporal trends in the concentration of these species, the Egyptian Environmental Affairs Agency (EEAA) decided to initiate a pollutant monitoring program. This was conducted with the help of USA and Denmark.

Numerous monitoring sites have been established in Egypt. These sites monitor ambient particulate matter (PM₁₀ and PM_{2.5}) and lead through Cairo Air Improvement Project (CAIP) funded by USAID. In addition, measurements of SO₂, NO₂, CO and O₃ are performed through the Egyptian Information & Monitoring Program (EIMP) funded by DANIDA. This paper describes the ambient particulate matter and lead, over a period from 1998 through 2007 for the all monitoring sites in the Greater Cairo (GC) in Egypt. In addition, discussions of the sources of the observed pollutants are presented.

Keywords :

Particulate matter (PM); Lead (Pb); Air quality monitoring; Air quality limits (AQL).

Faculty of Engineering**Dept.** : Mechanical Design and Production Engineering**Name** : **Said M. Megahed****Title** : Use of the Floating Frame of Reference Formulation in the Large Deformation Analysis: Experimental and Numerical**Authors** : A. A. Nada, B. A. Hussein, S M Megahed and A. A. Shabana**Published In** : IMechE Part K: Journal of Multi-body Dynamics**ISSN** : 1464-4193**Impact Factor** : 0.279**Abstract** :

The finite-element *floating frame of reference* (FFR) formulation is used, for the most part, in the small deformation analysis of flexible bodies that undergo large reference displacements. This formulation allows for filtering out systematically complex shapes associated with high frequencies that have no significant effect on the solution in the case of small deformations. The resulting low-order FFR models have been widely used to obtain efficient and accurate solutions for many engineering and physics applications. In this investigation, the use of the FFR formulation in the large deformation analysis is examined and it is demonstrated that large deformation FFR models can be accurate in applications, where the deformation can be described using simple shapes as it is the case in robot system manipulators. In these cases, the standard finite-element FFR formulation must be used with non-linear strain–displacement relationships that account for the geometric non-linearities. The results obtained using the large deformation FFR models are compared with the results obtained using the large deformation *absolute nodal coordinate formulation* (ANCF), which does not allow for the use of linear modes. The ANCF models are developed using two different methods for formulating the elastic forces: the basic *continuum mechanics approach* (ANCF-BC) and the *elastic line method* (ANCF-EL). While the explicit Adams method can be used to obtain the numerical solution of the FFR model, two implicit integration methods are implemented in order to be able to obtain an efficient solution of the FFR and ANCF models. These implicit integration methods are the RADAU5 method and the *Hilber–Hughes–Taylor* (HHT) method. In the case of simple large deformation shapes, the simulation results obtained in this study show a good agreement between the FFR and the ANCF solutions.

The results also show that, in the case of thin and stiff beams, the coupled deformation modes that result from the use of the ANCF-BC can be a source of

numerical and locking problems, as reported in the literature. These ANCF-BC numerical problems can be circumvented using the implicit HHT integration method. Nonetheless, the HHT integrator does not capture high-frequency FFR axial modes which are necessary in order to obtain accurate solutions for high-speed rotating beams. In addition to the comparison with the ANCF solutions, experimental results of a forward dynamics model are used in this study to validate the large deformation FFR numerical solutions. The experimental set-up used in the validation of the numerical solutions is also described in this investigation.

Keywords :

Floating frame of reference; Absolute nodal coordinate formulation; Flexible manipulators; Coupled deformation modes.

Faculty of Engineering

Dept. : Mechanical Design and Production

Name : **Chahinaz A. Saleh**



Title : Void Nucleation and Growth in Dual-Phase Steel 600 During Uniaxial Tensile Testing

Authors : G. Avramovic-Cingara, Ch. A. R. Saleh, M. K. Jain and D. S. Wilkinson

Published In : Metallurgical and Materials Transaction A

ISSN : 1073-5623

Impact Factor : 1.389

Abstract :

Commercial dual-phase (DP) steel in sheet form and comprised of ferrite, martensite and bainite was subjected to uniaxial tension up to fracture. The damage characteristics were studied through extensive quantitative metallography and scanning electron microscope (SEM) observations of polished sections and fracture surfaces of failed specimens. The observed void nucleation mechanisms include nucleation at the martensite/ferrite interface or triple junction (most predominant), nucleation due to the cracking of martensite particles and nucleation at the inclusions. The void characteristics in terms of area fraction, void density, void size ranges and void orientations were analyzed as a function of thickness strain from various regions of the different uniaxial tensile test specimens taken to fracture. The damage analysis suggests that the void nucleation occurs during the entire deformation process with an almost constant rate and this rate reduces before fracture. A nucleation strain of 0.15 has been estimated for this material.

Keywords :

Dual phase steel; Damage; Voids; Void nucleation; Void growth; Martensite; Automotive; Mechanical metallurgy.

Faculty of Engineering

Dept. : Mechanical Power

Name : **Adel Khalil H. Khalil**



Title : Road Map for Renewable Energy Research and Development in Egypt

Authors : A. Khalil, A. Mubarak and S. Kaseb

Published In : J. Advanced Research

ISSN : 2090-1232

Impact Factor : 3.0

Abstract :

Egypt possesses excellent potential for renewable energy (RE) including solar, wind and biomass energy. Renewable energy technologies (RETs) and systems have different needs for support in terms of research and development, demonstration and market development. For this purpose, the Energy Research Center (ERC) at Cairo University has carried out a study with the ultimate goal of formulating a national development strategy and action plan for the local manufacture of renewable energy systems (RESs) and components. The present study positions the different RETs and RESs and identifies the research and development needs for each technology. The study also suggests how to establish a competitive market for RET. For this purpose it builds and analyses a set of likely scenarios and proposes a practical development strategy and a detailed action plan for achieving it.

Keywords :

Renewable; Energy; Egypt; Plan; Manufacturing.

Faculty of Engineering**Dept.** : Mechanical Power Engineering**Name** : **Mohy S. A. Mansour****Title** : Experimental and Numerical Study of a Conical Turbulent Partially Premixed Flame**Authors** : B. Li, E. Baudoin, R. Yu, Z. W. Sun, Z. S. Li, X. S. Bai, M. Alden and M. S. Mansour**Published In** : Proceedings of the Combustion Institute 32: 1811-1818 (2009)**ISSN** : 1811–1818**Impact Factor** : 2.6**Abstract** :

The structure and dynamics of a turbulent partially premixed methane/air flame in a conical burner were investigated using laser diagnostics and large-eddy simulations (LES). The flame structure inside the cone was characterized in detail using LES based on a two-scalar flamelet model, with the mixture fraction for the mixing field and level-set G-function for the partially premixed flame front propagation. In addition, planar laser induced fluorescence (PLIF) of CH and chemiluminescence imaging with high speed video were performed through a glass cone. CH and CH₂O PLIF were also used to examine the flame structures above the cone. It is shown that in the entire flame the CH layer remains very thin, whereas the CH₂O layer is rather thick. The flame is stabilized inside the cone a short distance above the nozzle. The stabilization of the flame can be simulated by the triple-flame model but not the flamelet-quenching model. The results show that flame stabilization in the cone is a result of premixed flame front propagation and flow reversal near the wall of the cone which is deemed to be dependent on the cone angle. Flamelet based LES is shown to capture the measured CH structures whereas the predicted CH₂O structure is somewhat thinner than the experiments.

Keywords :

Partially premixed flame; Conical burner; Laser diagnostics; Large-eddy simulation.

Faculty of Engineering

Dept. : Mechanical Power Engineering

Name : Mohy S. A. Mansour



Title : Local Equivalence Ratio Measurements in Turbulent Partially Premixed Flames Using Laser-Induced Breakdown Spectroscopy

Authors : M. S. Mansour, H. Imam, K. A. Elsayed and W. Abbass

Published In : Spectrochimica Acta Part B 64: 1079-1084 (2009)

ISSN : 1079–1084

Impact Factor : 2.8

Abstract :

One of the most recently applied laser-based techniques in combustion environment is the laser-induced breakdown spectroscopy (LIBS). The technique has been extensively and successfully applied to elemental concentration measurements in solids and liquids. The LIBS signal is much weaker in gases and hence more work is required for quantitative measurements in flames. In the present work we used two orthogonal Nd: YAG lasers that operate at the fundamental wavelength with laser pulse energy of about 100mJ/pulse. A Princeton-Instruments IMAX ICCD camera attached to a PI-Echelle spectrometer was used for signal detection. The lasers are focused using two 5-cm lenses. Several calibration points have been collected in well defined and homogeneous mixtures of air and fuel in order to be used as references for the measurements in turbulent partially premixed flames. This work shows that the application of the LIBS technique in a turbulent combustion environment is feasible and signal is enhanced by applying an orthogonal dual-pulse arrangement for air–fuel.

Keywords:

LIBS; Mixture fraction; Equivalence ratio; Partially premixed flames.

Faculty of Engineering**Dept.** : Mining, Petroleum and Metallurgy**Name** : **Ayman A. El-Midany****Title** : Effect of Synthesis Conditions on the Preparation of YIG Powders Via Co- Precipitation Method**Authors** : M. M. Rashad, M. M. Hessien, A. El-Midany and I. A. Ibrahim**Published In** : J. Magnetism and Magnetic Materials**ISSN** : 0304-8853**Impact Factor** : 1.283**Abstract** :

Yttrium iron garnet (YIG) ($Y_3Fe_5O_{12}$) powders have been synthesized through a co-precipitation method in the presence of sodium bis(2-ethylhexyl sulfosuccinate), AOT as an anionic surfactant. The garnet precursors produced were obtained from aqueous iron and yttrium nitrates mixtures using 5M sodium hydroxide at pH 10. A statistical Box–Behnken experimental design was used to investigate the effect of the main parameters (i.e. AOT surfactant concentration, annealing time and temperature) on YIG powder formation, crystallite size, morphology and magnetic properties. YIG particles were investigated using X-ray diffraction (XRD), scanning electron microscopy (SEM) and vibrating sample magnetometer. XRD revealed that the formation of single cubic phase of YIG was temperature dependent and increased by increasing the annealing temperature from 800 to 1200 °C. SEM micrographs showed that the addition of AOT surfactant promoted the microstructure of YIG in crystalline cubic-like structure. The magnetic properties were sensitive to the synthesis variables of annealing temperature, time and AOT surfactant concentration. The maximum saturation magnetization (28.13 emu/g), remanence magnetization (21.57 emu/g) and coercive force (703 Oe) were achieved at an annealing temperature of 1200 °C, time 2h and 500 ppm of AOT surfactant concentration.

Keywords :

YIG synthesis; Statistical design; Surfactant; Microstructure; Magnetic properties.

Faculty of Engineering

Dept. : Mining, Petroleum and Metallurgy

Name : Ayman A. El-Midany



Title : Bubbles Growth and their Stability in Reactive Flotation Process

Authors : A. A. El-Midany, H. E. El-Shall and S. Svoronos

Published In : Chemical Engineering and Processing: Process Intensification

ISSN : 0255-2701

Impact Factor : 1.518

Abstract :

Reactive flotation is a process originally used to separate dolomite from phosphate. It depends mainly on the formation of CO₂ bubbles as a product of acid reaction with dolomite surface in presence of a polyvinyl alcohol (PVA) polymeric membrane. Elasticity of PVA membrane is one of the critical factors that affect the bubble stability at the interface. The dynamic surface tension (DST) at different CO₂ rates was used as a measure for the membrane elasticity. The DST, at different CO₂ rates, was used to simulate the bubbles formation at the interface due to the surface reaction of dolomite with acidic media. The results indicated that the high evolution of CO₂, due to vigorous reaction, negatively affects the membrane elasticity and leads to fast rupture of the formed bubbles.

Keywords :

Reactive flotation; Polyvinyl alcohol; Polymer coating; Dynamic surface tension; Bubble formation; Bubble stability.

Faculty of Engineering

Dept. : Mining, Petroleum and Metallurgy

Name : **Ayman A. El-Midany**



Title : Mechanisms Involved in Reactive Flotation of Dolomite

Authors : A. El-Midany, H. El-Shall and R. Stana

Published In : Minerals and Metallurgical Processing

ISSN : 0747-9182

Impact Factor : 0.224

Abstract :

Dolomite impurities are increasing in the currently mined phosphate deposits in Florida. Several research efforts have been conducted in various laboratories around the globe to find methods to economically removing the dolomite. However, a universal and cost-effective process is not now in commercial use. In this paper, a new process for dolomite/apatite separation is presented. The differential solubility of dolomite in slightly acidic solution is utilized to generate micro CO₂ bubbles at the dolomite/water interface. Particle (dolomite)/bubble aggregates float to the surface leaving phosphate concentrate with low MgO content. Interestingly, up to 6.0 mm particles can be floated by such micro-bubble/particle aggregates. Different surface-active agents were tested to stabilize the bubbles. Results of these tests are presented and the mechanisms involved are discussed.

Keywords :

Dolomite; Apatite; Surfactants; Polyvinyl alcohol; Reactive flotation.

Faculty of Engineering**Dept.** : Mining, Petroleum and Metallurgy**Name** : **Salah El-Din El-Mofty****Title** : Effect of Oleate/Bacteria Interactions on Dolomite Separation from Phosphate Ore**Authors** : A. M. Elmahdy, A. A. El-Midany, N. A. Abdel-Khalek and S. E. El-Mofty**Published In** : Tenside Surfactants Detergents**ISSN** : 0932-3414**Impact Factor** : 0.515**Abstract** :

In conventional flotation, the sodium oleate is used as a collector for phosphate separation from silica. However, most of the phosphate deposits contain carbonate impurities, which deteriorate the flotation selectivity using sodium oleate. In this paper, the amenability of carbonate separation from a sedimentary phosphate ore through bio-flotation process, as a one of various efforts to solve the carbonate problem, was tested. The interaction of two types of bacteria (*Corynebacterium-diphtheriae-intermedius*, CDI and *Pseudomonas aeruginosa*, PA) with sodium oleate was investigated. The interaction between collector and bacteria was explained by Fourier Transform Infra-Red (FTIR) measurements, zeta potential before and after adsorption of bacteria, as well as frothing power. The results showed that bio-flotation could produce a phosphate concentrate of 0.85% MgO and 30.2 % P₂O₅ with a recovery of 92% at pH 5.5, 1.25 Kg/t sodium oleate, $\geq 1 \times 10^8$ cells of CDI bacteria. The specification of such concentrate could not be obtained from the conventional flotation experiments, in absence of bacteria, under similar conditions. This means that bacteria could play a significant role as a surface modifier due to its selective adsorption onto the mineral surface as well as its interaction with collector.

Keywords :

Dolomite; Apatite; Sodium oleate; Bacteria; Bio-beneficiation; Bio-flotation; Carbonate minerals; Phosphate.

Faculty of Engineering

Dept. : Mining, Petroleum and Metallurgical
Engineering

Name : Abdel-Zaher M. Abouzeid



Title : Grinding of Mineral Mixtures in High-Pressure Grinding Rolls

Authors : D. W. Fuerstenau and A. Z. M. Abouzeid

Published In : Int. J. Mineral Processing

ISSN : 0301-7515

Impact Factor : 0.0

Abstract :

Attempts at improving comminution machines generally have been directed towards increasing the performance efficiency, particularly increasing throughput rate and decreasing energy consumption. The latest and most successful new comminution technology has been the high-pressure grinding rolls (HPGR), which have proved to be highly efficient in energy consumption and to have a relatively high throughput rate at low steel consumption. Already used extensively in cement plants worldwide, the first HPGRs in the mineral industry were installed in plants processing diamond ores. They are now finding their way into the large-scale base-metal mining industry. Since feed constituents in natural ores vary in their physical properties such as hardness, plasticity and brittleness, the present paper is concerned with an investigation of the behavior of a heterogeneous feed as it passes through the HPGR. The effect of feed composition on operational parameters, the energy efficiency of comminution and energy distribution among the feed components is addressed. Mineral particles with high hardness act as energy transfer agents in the roll gap and enhance the grinding of softer mineral particles in a mixed feed.

Keywords :

High pressure grinding rolls; Comminution; Grinding of mineral mixtures; Energy efficiency of grinding; Enhanced energy efficiency in comminution.

Faculty of Engineering

Dept. : Mining, Petroleum and Metallurgical
Enginrrting

Name : **Abdel-Zaher M. Abouzeid**



Title : Upgrading of Calcareous Phosphate Ores by Flotation: Effect of ore Haracteristics Non-Homogeneity and Complex Initial Conditions

Authors : A. Z. M. Abouzeid, A. T. A. Negm and D. A. W. Elgillani

Published In : Mineral Processing

ISSN : 0301-7515

Impact Factor : 0.0

Abstract :

Sedimentary phosphates contain-besides the phosphate minerals-, various associated gangue minerals such as: clays, silica, calcareous minerals (mainly calcite and dolomite), carbonaceous matter, iron oxides and/or pyrite. The common practiced flow-sheets for concentrating these types of phosphate ores consist of a combination of various mineral processing units such as: crushing and screening, attrition, washing, magnetic separation and/or flotation. However, none of these combinations was successfully efficient to upgrade the calcareous ores because of the close similarity of the physical properties (density, particle size, particle shape, etc.) as well as the surface physico-chemical properties of the carbonate and phosphate minerals. For the last five decades extensive efforts have been spent to adopt flotation for separating carbonates from phosphate ores. These efforts include thermodynamic analysis, modification of the technique, controlling the pulp environment and finding new reagents that can specifically differentiate between carbonates and phosphates.

This paper reviews some of the published work on the separation of carbonates from phosphate ores by flotation and presents the flotation results of phosphate ore samples different in their physical properties and mineralogical composition. The results obtained reflect the effect of ore nature on the flotation performance and the reagents consumption.

Keywords :

Flotation; Phosphate ores; Concentration; Upgrading; Ore characteristics.

Faculty of Engineering**Dept.** : Mining, Petroleum and Metallurgy**Name** : Eissa M. E. Shokir**Title** : Experimental and Numerical Investigation of Proppant Placement in Hydraulic Fractures**Authors** : E. M. El-M. Shokir and A. A. Al-Quraishi**Published In** : Petroleum Science and Technology**ISSN** : 1091-6466**Impact Factor** : 0.28**Abstract** :

In hydraulic fracturing treatments, a fracture is initiated by rupturing the formation at high pressure by means of a fracturing fluid. Slurry, composed of propping material carried by the fracturing fluid, is pumped into the induced fracture channel to prevent fracture closure when fluid pressure is released. Productivity improvement is mainly determined by the propped dimension of the fracture, which is controlled by proppant transport and proper proppant placement. Settling and convection (density driven flow) are the controlling mechanisms of proppant placement. In this study, proppant transport and placement efficiency of four non-Newtonian fluids with controlled density differences was experimentally investigated and numerically simulated. Small glass model was used to simulate hydraulic fracture and parameters such as slurry volumetric injection rate, proppant concentration and polymer type (rheological properties) were investigated.

It has been observed that small glass models easily and inexpensively simulated flow patterns in hydraulic fractures and the flow patterns observed are strikingly similar to those obtained by very large flow models used by previous investigators. Convection was observed to be significant flow mechanism even with small density contrast. As viscous to gravity ratio increases, due to increasing slurry injection rate or decreasing proppant concentration, convection settling decreases and proppant placement efficiency increases. Increasing non-Newtonian flow behavior index (n) by using different types of polymers shows more gravity underrunning and less proppant placement efficiency. Therefore, larger slurry volumes are needed to be injected to prop the entire fracture height. Experiments conducted were simulated and some of the simulated experiments were presented. The simulator quantitatively replicates the experimentally observed.

Keywords :

Fracture; Fluids; Hydraulic; Numerical; Proppant; Placement.

Faculty of Engineering

Dept. : Mining, Petroleum and Metallurgical Engineering

Name : **Mohamed H. Sayyoub**



Title : New Correlations Correlate Volatile Oil, Gas Condensate PVT Properties

Authors : K. A. Fattah, Ahmed H. El-Banbi and M. H. Sayyoub

Published In : Oil and Gas Journal

ISSN : 0030-1388

Impact Factor : 0.055

Abstract :

New correlations provide modified black-oil (MBO) pressure-volume-temperature (PVT) properties when fluid samples are unavailable.

One can use the correlations in generalized material balance calculations and MBO simulations. The new correlations match the fluid properties of a selected database and the authors also validated them with generalized material balance calculations.

To develop the new correlations, the authors modified existing solution gas-oil ratio and gas formation volume factor correlations to increase their accuracy when used with gas condensate and volatile oils.

The new correlations have an accuracy within 10.4% for gas condensate and 15% for volatile oil samples used in this study.

Keywords :

PVT Correlations; Volatile oil; Gas condensate and PVT Properties.

Faculty of Engineering**Dept.** : Structural Engineering**Name** : **Sameh S. F. Mehanny****Title** : A Broad-Range Power-Law Form Scalar-Based Seismic Intensity Measure.**Authors** : Sameh S. F. Mehanny**Published In** : Engineering Structures**ISSN** : 0141-0296**Impact Factor** : 1.102**Abstract** :

This paper aims at studying the efficiency and robustness of a proposed enhanced broad-range, spectrum shape-dependent, power-law form, scalar-based seismic Intensity Measure (IM). It is intended for estimation of structural performance for probability-based seismic assessment of structures. When traditional IMs are used, such as the peak ground acceleration or the first-mode spectral acceleration, the corresponding Engineering Demand Parameters (EDP) can display large record-to-record variability, forcing the use of many records to achieve reliable results. The ordinates of the elastic spectrum and the spectral shape of each individual record are found to significantly influence the seismic performance and they are shown to provide promising candidates for highly efficient IMs. The efficiency of the proposed broad-range IM in reducing the scatter in estimated peak lateral inelastic displacement and ductility demands is investigated herein through an extensive analytical program. The program considers a large database of 80 records and a broad spectrum of first mode-dominant structures encompassing a wide range of design-inherent inelastic displacement demands. Two different constitutive material models representing steel and concrete structures covering scenarios of non-degrading and degrading response are also studied. Statistical results show the versatility and efficiency of the proposed IM in satisfactorily – by minimizing the scatter of the resulting EDPs – dealing with structures designed to undergo various levels of inelastic displacement demands.

Keywords :

Elastic spectrum shape; Intensity measure; Ground motion; Power law; Scalar based.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : Application of Computer Simulation to Bridge Deck Construction: Case Study

Authors : Hisham Said, Mohamed Marzouk and Moheeb El-Said

Published In : Automation in Construction

ISSN : 0926-5805

Impact Factor : 1.664

Abstract :

Bridge deck construction is performed in a cyclic manner and it involves different types of interacted resources. This paper presents a case study that discusses how computer simulation is used to aid bridges' contractors in planning of bridges' decks, taking into consideration the interaction amongst involved resources. As such, total duration of deck execution and the associated total costs, including direct and indirect costs, can be estimated. El-Warrak Bridge, which is a part of the Ring Road of Cairo, Egypt, is analyzed in a step-by-step procedure to demonstrate the capability of computer simulation in modeling construction of bridges' decks using cast-in-place on falsework and cantilever carriage construction methods. The presented methodology proves its practicality to contractors in estimating the time and costs of the repetitive process of bridge deck construction, considering complex interdependencies between construction resources and the uncertainties associated with construction activities.

Keywords :

Cast-in-place on falsework construction; Cantilever carriage construction; Computer simulation; Case study.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : Framework for Multi-objective Optimization of Launching Girder Bridges

Authors : Mohamed Marzouk, Hisham Said and Moheeb El-Said

Published In : J. Construction Engineering and Management

ISSN : 0733-9364

Impact Factor : 0.564

Abstract :

A framework is presented for optimizing the construction of decks of bridges using launching girder systems. The framework assists contractors in performing a time-cost trade-off analysis to optimize the use of resources. The proposed framework consists of three main components which interact in a cyclic manner. These components are simulation, optimization and reporting modules. Processes and tasks of launching girder systems are described in order to illustrate the mechanism of the simulation module which utilizes STROBOSCOPE as a general purpose simulation language. The developments made in the optimization module are extensively detailed. The optimization module uses ant colony optimization and it accounts for seven optimization variables; location of casting yard, time lag, number of casting forms, number of preparation platform, curing method, number of yard reinforcement crews and number of stressing crews. Two optimization approaches are coded in the optimization module in two algorithms (ant colony multiobjective optimization I and II) to carry out multiobjective optimization. These are function-transformation and modified distance approaches. A numerical example is presented to illustrate the practical use of the developed framework.

Keywords :

Optimization; Bridges; Girder; Bridge decks.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : Assessment of Construction Workforce Skills Needs in Egypt

Authors : Mohamed Marzouk

Published In : International Journal of Project Organisation and Management

ISSN : 1740-2891

Impact Factor : 0.00

Abstract :

The shortage of skilled construction workers has a negative impact on contractors and owners due to delays in time schedule and rework of tasks. In the prequalification process, owners should assess contractors according to their overall company training programme and the investments they made in training as one of the evaluation criteria. Investing in capacity building and training of construction workforce would solve workforce skill crises. This research work attempts to address workforce skill-related problems in construction. It reviews Training Needs Assessment (TNA), considered the key issue in contributing to the success of the training programmes. The results of a survey that was conducted to identify the training needs in an Egyptian construction workforce are presented.

Keywords :

Training needs assessment; TNA; Workforce skills needs; Egyptian construction industry.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : A Framework for Estimating Negotiation Amounts in Construction Projects

Authors : Mohamed Marzouk and M. Moamen

Published In : Construction Innovation: Information, Process and Management

ISSN : 1471-4175

Impact Factor : 0.00

Abstract :

Purpose – Construction disputes can often be resolved using several techniques including: negotiation; mediation; dispute resolution boards; arbitration; and litigation. Negotiation is considered the most preferred technique due to the following facts: first it prevents litigation amongst project parties; and second it keeps a harmonious relationship between project participants. Further, negotiation saves the time, expenses and efforts that are associated with other resolutions techniques. The purpose of this paper is to provide a tool that is geared towards assisting construction contractors during negotiation process.

Design/methodology/approach – The framework consists of three modules; duration, certainty and intention. These modules capture the main characteristics of the negotiation process including: the expected claim duration in the case of litigation; certainty of litigation; and contractor's intention to make litigation. The paper also describes the characteristics of these three modules and their associated factors which have been determined based on interviews with claims' experts and questionnaire surveys. Analytical hierarchy process and utility theory are used to determine weights and utility values of attributes, respectively. Decision tree analysis is used to estimate the equivalent monetary value of litigation.

Findings – The framework calculates the lower threshold of a claim value with an average error of 12 percent. A case study is presented to illustrate the practical use of the proposed framework and its ability to determine the minimum acceptable claim amount. Research limitations/implications – The knowledge of the framework was retrieved from the Egyptian construction industry. However, the utilized methodology can be applied to capture local contraction practices, law and politics in other construction industries.

Originality/value – This paper presents a framework that is developed to assist contractors in calculating the lower threshold of a claim value, which can be considered, during negotiation process with owners.

Keywords:

Dispute resolutions; Negotiating; Utility theory; Decision trees; Construction works.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : A Computer Simulation Model for Cut and Cover Tunneling using Secant Pile Walls

Authors : Mohamed Marzouk, Moatassem Abdallah and Moheeb El-Said

Published In : Arab Construction World

ISSN : 1990-3936

Impact Factor : 0.00

Abstract :

Tunneling projects are essentially infrastructure projects which are characterized by long duration, sizable budget and complexity which lead to uncertainties. Several techniques have been introduced to construct tunnels with large cross-sectional area. This paper presents a model that utilizes computer simulation to model cut and cover tunneling using secant pile wall method. The paper describes the steps and assumptions used in the development of the model. The proposed simulation model utilizes STROBOSCOPE simulation engine to perform simulation runs. An actual case study is presented to demonstrate the practical use of the developed model.

Keywords :

Cut and cover tunneling; Secant pile walls; Computer simulation.

Faculty of Engineering

Dept. : Structural Engineering

Name : Mohamed M. M. Marzouk



Title : The State of Computer Simulation Applications in Construction

Authors : Mohamed Marzouk

Published In : Handbook of Research on Discrete Event Simulation
Environments: Technologies and Applications

ISBN : 978-1-60566-774-4 **Impact Factor :** 0.00

Abstract :

Construction operations are performed under different working conditions including (but not limited to) unexpected weather conditions, equipment breakdown, delays in procurement, etc. As such, computer simulation is considered an appropriate technique for modeling the randomness of construction operations. Several construction processes and operations have been modeled utilizing computer simulation such as earthmoving, construction of bridges and tunnels, concrete placement operations, paving processes and coordination of cranes operations. This chapter presents an overview of computer simulation efforts that have been performed in the area of construction engineering and management. Also, it presents two computer simulation applications in construction; earthmoving and construction of bridges' decks. Comprehensive case studies are worked out to illustrate the practicality of using computer simulation in scheduling construction projects, taking into account the associated uncertainties inherited in construction operations.

Keywords:

General purpose simulation; Special purpose simulation; Object-oriented modeling; Optimization.

Faculty of Engineering

Dept. : Structural Engineering

Name : Youssef F. Rashed



Title : Free Vibration of Structures with Trigonometric SIN(R) Function in the Dual Reciprocity Boundary Element Analysis

Authors : Morcos F. Samaan and Youssef F. Rashed

Published In : Applied Mathematical Modelling 33: (2009)

ISSN : 0307-904X

Impact Factor : 0.931

Abstract :

This paper presents a new boundary element formulation for free vibration analysis of two-dimensional elastic structures. The dual reciprocity method (DRM) is introduced using the multiquadric radial basis functions (MQ). The required particular solution kernels for displacement and traction are derived and smoothed using simple mathematical trick; hence the limiting values of these kernels are computed. The eigen-problem of displacement is formulated and solved to obtain the required frequencies of different vibration modes. Finally, several numerical problems are studied to demonstrate the validity and accuracy of the developed formulation. The results are compared to those obtained from other interpolation functions and finite element analysis to demonstrate the validity and superiority of the present formulation.

Keywords :

Multiquadric radial basis functions; Boundary element method; Dual reciprocity method; 2D Elastodynamics; Free vibration analysis.

Faculty of Engineering

Dept. : Structural Engineering

Name : Youssef F. Rashed



Title : A Dipole Method of Fundamental Solutions Applied to Reissner's Plate Bending Theory

Authors : Sherif W. Mohareb and Youssef F. Rashed

Published In : Mechanics Research Communications 36: (2009)

ISSN : 0093-6413

Impact Factor : 1.077

Abstract :

The method of fundamental solutions (MFS) is a mesh-less technique used to solve Boundary Value Problems (BVPs). Its idea is to represent the solution via superposition of fictitious source intensities multiplied by appropriate fundamental solutions. The method has been first developed in the work of Kupradze and Alkesidze (1964). Originally the sources used for the solution were assumed to have unknown intensities and places. This results in formation of nonlinear optimization problems. Later Mathon and Johnston (1977) followed by Bogomolny (1985) have developed alternative version of the MFS by assuming a priori known source places, resulting in linear system of equations. The MFS, since then, has been used in many applications, by Golberg and Chen (1998) for potential problems, by Patterson and Sheikh (1983) and Karageorghis and Faiweather (2000) for elasticity problems and by Antes (1984) for the ReISSN :er's plate bending problems (ReISSN :er, 1947). The dipole formulation has been previously developed for 2D potential and elasticity problems in the work of Fam and Rashed (2007).

In this work the dipole MFS formulation for ReISSN :er's plate bending theory is developed. New kernels required for such formulation are derived and given in explicit forms. The validity of the results is presented in numerical examples.

Keywords :

Method of fundamental solutions; Indirect BEM; Dipoles; Plates.

Faculty of Engineering

Dept. : Structural Engineering

Name : Youssef F. Rashed



Title : The Method of Fundamental Solutions Applied to 3D Elasticity Problems Using A Continuous Collocation Scheme

Authors : George S. A. Fam and Youssef F. Rashed

Published In : Engineering Analysis with Boundary Elements 33: (2009)

ISSN : 0955-7997

Impact Factor : 1.096

Abstract :

This paper presents a new formulation of the Method of Fundamental Solutions (MFS) for three-dimensional elasticity problems. The idea of the presented formulation is to integrate both sides of the Conventional MFS superposition equation over the body surface. This leads to the proposed ‘‘continuous collocation’’. Therefore, the surface of the analyzed body has to be discretised into boundary elements. In order to make use of the conventional MFS advantage of being a mesh less method, a mixed formulation, using the proposed continuous collocation formulation and the conventional mesh less formulation, is employed. The present formulation proved its validity and accuracy when analyzing problems with non-constant boundary conditions and when computing the tangential stress component on the boundary. It is also shown that the proposed formulation is suitable and accurate for the analysis of thin and slender bodies.

Keywords :

Method of fundamental solutions; Elasticity problems; Three-dimensional problems; Boundary element method; Continuous collocation.

Faculty of Computers and Information

Dept. : Decision Support

Name : **Nedaa M. E. E. Agami**



Title : A Neural Network based Dynamic Forecasting Model for Trend Impact Analysis

Authors: N.Agami, A.Atiya, M.Saleh and H.El-Shishiny

Published In : Technological Forecasting and Social Change

ISSN : 0040-1625

Impact Factor : 1.761

Abstract :

Trend Impact Analysis is a simple forecasting approach, yet powerful, within the Futures Studies paradigm. It utilizes experts' judgments to explicitly deal with unprecedented future events with varying degrees of severity in generating different possibilities (scenarios) of how the future might unfold. This is achieved by modifying a surprise-free forecast according to events' occurrences based on a Monte-Carlo simulation process. Yet, the current forecasting mechanism of TIA is static. This paper introduces a new approach for constructing TIA by using a dynamic forecasting model based on neural networks. This new approach is designed to enhance the TIA prediction process. It is expected that such a dynamic mechanism will produce more robust and reliable forecasts. Its idea is novel, beyond state of the art and its implementation is the main contribution of this paper.

Keywords :

Trend Impact Analysis, Forecasting, Neural Networks.

Faculty of Computers and Information

Dept. : Computer Science

Name : **Hesham A. Hassan**



Title : TextOntoEx: Automatic ontology construction from natural English text

Authors: Mohamed Yehia Dahab, Hesham A. Hassan and Ahmed Rafea

Published In : Expert Systems with Applications 34 (2008) 1474-1480

ISSN : 0957- 4174

Impact Factor : 2.596

Abstract :

Most of existing ontologies construction tools support construction of ontological relations (e.g., taxonomy, equivalence, etc.) but they do not support construction of domain relations, non-taxonomic conceptual relationships (e.g., causes, caused by, treat, treated by, has-member, contain, material-of, operated-by, controls, etc.). Domain relations are found mainly in text sources. TextOntoEx constructs ontology from natural domain text using semantic pattern-based approach. TextOntoEx is a chain between linguistic analysis and ontology engineering. TextOntoEx analyses natural domain text to extract candidate relations and then maps them into meaning representation to facilitate constructing ontology. The paper explains this approach in more details and discusses some experiments on deriving ontology from natural text.

Keywords :

Ontology; Semantic patterns; Ontology acquisition.

Faculty of Computers and Information

Dept. : Computer Science

Name : **Hoda M. Onsi**



Title : A new approach in content-based image retrieval using fuzzy

Authors: Heba Aboulmagd, Neamat El-Gayar and Hoda Onsi

Published In : Telecommunication Systems

ISSN : 1018- 4864

Impact Factor : 0.396

Abstract :

Finding an image from a large set of images is an extremely difficult problem. One solution is to label images manually, but this is very expensive, time consuming and infeasible for many applications. Furthermore, the labeling process depends on the semantic accuracy in describing the image. Therefore many Content based Image Retrieval (CBIR) systems are developed to extract low-level features for describing the image content. However, this approach decreases the human interaction with the system due to the semantic gap between low-level features and highlevel concepts. In this study we make use of fuzzy logic to improve CBIR by allowing users to express their requirements in words, the natural way of human communication.

In our system the image is represented by a Fuzzy Attributed Relational Graph (FARG) that describes each object in the image, its attributes and spatial relation. The texture and color attributes are computed in a way that model the Human Vision System (HSV). We proposed a new approach for graph matching that resemble the human thinking process. The proposed system is evaluated by different users with different perspectives and is found to match users' satisfaction to a high degree.

Keywords :

Content Based Image Retrieval; Fuzzy color feature; Fuzzy texture feature; Graph matching.

Faculty of Computers and Information

Dept. : Computer Science

Name : **Fatma A. Omara**



Title : Genetic algorithms for task scheduling problem

Authors: Fatma A. Omara and Mona M. Arafa

Published In : J. Parallel Distrib. Comput

ISSN : 0743- 7315

Impact Factor : 1.263

Abstract :

The scheduling and mapping of the precedence-constrained task graph to processors is considered to be the most crucial NP-complete problem in parallel and distributed computing systems. Several genetic algorithms have been developed to solve this problem. A common feature in most of them has been the use of chromosomal representation for a schedule. However, these algorithms are monolithic, as they attempt to scan the entire solution space without considering how to reduce the complexity of the optimization process. In this paper, two genetic algorithms have been developed and implemented. Our developed algorithms are genetic algorithms with some heuristic principles that have been added to improve the performance. According to the first developed genetic algorithm, two fitness functions have been applied one after the other. The first fitness function is concerned with minimizing the total execution time (schedule length), and the second one is concerned with the load balance satisfaction. The second developed genetic algorithm is based on a task duplication technique to overcome the communication overhead. Our proposed algorithms have been implemented and evaluated using benchmarks. According to the evolved results, it has been found that our algorithms always outperform the traditional algorithms.

Keywords :

Evolutionary computing; Genetic algorithms; Scheduling; Task partitioning; Graph algorithms; Parallel processing.

Faculty of Computers and Information**Dept.** : Information Technology**Name** : **Haitham S. Hamza****Title** : Optimizing Complexity in Benes-Type WDM Switching Networks**Authors** : Haitham S. Hamza**Published In** : Photonic Network Communication**ISSN** : 1387-974X**Impact Factor**: 0.0**Abstract** :

In this paper, we propose a new Benes-type wavelength division multiplexing (WDM) optical network with space-wavelength switching capability. Intuitively, adding wavelength switching capability to space Benes networks requires the use of additional hardware components (i.e., wavelength converters). However, in this paper, we show that a Benes network with full-permutation capability in both space and wavelength domains can be designed using a smaller number of hardware components but the same number of stages as that in a space-only Benes network. In addition, wavelength conversion in the proposed network occurs only between two pre-defined wavelengths, eliminating the need for any expensive wide-range wavelength converters. The proposed Benes network is based on the newly proposed concept of wavelength-exchangeable permutation networks. Wavelength-exchangeable networks implement single-step space and wavelength switching and hence reduce the number of hardware components. We show that, such wavelength exchangeable networks possess some interesting properties that can be used for designing routing algorithms to improve signal quality.

Keywords :

Optical switching, WDM switching networks, Benes networks, Wavelength exchangers , Wavelength converters.



**Medical
Sciences Sector**

Faculty of Medicine

Faculty of Medicine

Dept. : Andrology

Name : Osama K. Z. Shaeer



Title : Revealing the Buried Penis in Adults

Authors : Osama K. Z. Shaeer

Published In : Journal of Sexual Medicine

ISSN : 1743-6095

Impact Factor : 5.393

Abstract :

Introduction: Several surgical solutions have been proposed for resolving penile concealment with successful outcomes. Those include liposuction, adhesiolysis and suprapubic lipectomy through the abdominal crease. Nevertheless, some limitations exist and compromise the results of surgical correction.

Aim: This work presents our technique for revealing the hidden penis, addressing the limitations of existing methods for surgical correction.

Methods: Sixty-four adult males with buried penis were operated upon. The penis was revealed by the combination of adhesiolysis, suprapubic and lateral lipectomy, anchoring the penoscrotal and penopubic junctions and skin coverage by a local flap.

Main Outcome Measures: Penile length in the flaccid and erect states.

Results: Average postoperative length in the flaccid state was approximately 7 cm \pm 1.3 (a 293% increase) and in the erect state was 18.4 cm \pm 2.9 (185.7% increase), compared with preoperative length of 1.8 cm \pm 0.4 in the flaccid state and 6.4 cm \pm 1.6 in the erect state. Minor complications occurred. There was no deterioration in sexual function.

Conclusion: Revealing the concealed penis is a complicated procedure. The outcome may be improved by implementing a radical approach to tissue excision, providing adequate skin coverage and anchoring the penile shaft, skin and subcutaneous tissues in the revealed state to prevent relapse.

Keywords:

Buried penis; Concealed penis; Hidden penis; Suprapubic lipectomy; Short penis; Penile lengthening; Penile elongation.

Faculty of Medicine

Dept. : Andrology

Name : Osama K. Z. Shaeer



Title : Delayed Complications of Gel Injection for Penile Girth Augmentation

Authors : Osama K. Z. Shaeer

Published In : Sexual Medicine

ISSN : 1743-6095

Impact Factor : 5.393

Abstract :

Introduction: Penile girth augmentation is a domain of extensive controversy and debate. A variety of methods is available for the choice of the surgeon including dermal-fat grafts and flaps. The need for a simple procedure with minimal donor site has led to proposing injection therapy for penile augmentation, whether by fat or synthetic materials.

Aim: This work reports on a male patient suffering a deforming subcutaneous mass in the penis following penile girth augmentation by injection therapy using synthetic material and describes its management and pathologic analysis of the extracted tissue.

Methods: The mass was excised through a circumferential subcoronal incision while maintaining skin vascularity and integrity of the corpora. The excised tissue was microscopically examined.

Main Outcome Measures: Cosmetic and functional results of surgical correction.

Results: Cosmetic and functional outcome were acceptable. Pathology examination revealed features of foreign body granuloma.

Conclusion: Injection of fillers for girth augmentation of the penile shaft may result in delayed complications including migration, granulomatous reaction and resorption that may occur beyond the follow-up span of the currently available study that recommends its use.

Keywords:

Gel; Injection; Silicone; Penis; Augmentation.

Faculty of Medicine

Dept. : Andrology

Name : Osama K. Z. Shaeer



Title : Botulinum Toxin A (Botox) for Relieving Penile Retraction

Authors : Osama K. Z. Shaeer

Published In : Sexual Medicine

ISSN : 1743-6095

Impact Factor : 5.393

Abstract :

Introduction: The flaccid penis undergoes retraction upon contraction of the Dartos muscle. These contractions are most pronounced in the situations of cold, stress and upon exercising and can be the source of embarrassment to those who have a hyper active retraction reflex, especially when exposed to their partners or to others in showers and dressing rooms, despite a normal and satisfactory length in the erect state .

Aim: In this work, we propose an alternative to surgery and penile extenders for alleviating penile retraction, by injection of Botulinum toxin into the Dartos to induce muscle relaxation. This is the first report of the technique.

Methods: Ten male patients complaining of a short penis exclusively in the flaccid state, despite normal and satisfactory erect and outstretched lengths were selected for the study. 100 units of BOTOX® were injected into the Dartos muscle.

Main Outcome Measures: Frequency and amplitude of penile retraction, flaccid unstretched length and patient satisfaction.

Results: Seven out of ten cases (70%) subjectively reported a decrease in the frequency and amplitude of penile retraction, as well as improvement in flaccid length. Clinical measurements were less pronounced but still showed an improvement that was mainly in terms of less retraction rather than more length. No side effects were reported. Improvement faded completely by the 6th month.

Conclusion: This preliminary report of Botulinum toxin A (Botox) injection into the Dartos muscle shows that Botox may have a potential effect in temporarily decreasing penile retractions in terms of frequency and amplitude.

Keywords :

Botulinum; Botox; Retraction; Length; Elongation; Short Penis.

Faculty of Medicine**Dept.** : Andrology and STDs**Name** : **Ihab Ismail Kamel****Title** : Comparing Penile Measurements in Normal and Erectile Dysfunction Subjects**Authors** : Ihab Kamel, Amr Gadalla, Hussein Ghanem and Mohamed Orby**Published In** : Sexual Medicine**ISSN** : 1743-6095**Impact Factor** : 5.393**Abstract** :

Introduction: With the increase in penile augmentation procedures it becomes important to assess what is the normal erect penile size in both potent men and men with erectile dysfunction (ED). **Aim:** The aim of this work is to define the average stretched penile size in normal men and ED patients. **Main Outcome Measures:** Penile length and girth. **Methods:** This study included 1,027 adult men presenting to a university hospital outpatient clinic. Two groups of patients were included in this research work. Group I comprises normal adult men (949) and Group II, ED patients (78). There were no differences of race, age, height and weight. Penile length and girth were measured using a tape measure and rigid ruler in the fully stretched states in both groups. All penile measurements were performed by the same physician. **Results:** In normal men (Group I) the mean of the fully stretched length was 12.9 ± 1.9 cm and the mean of the fully stretched girth was 8.9 ± 0.9 cm. In ED patients (Group II), the mean of the fully stretched length was 11.2 ± 1.5 cm and the mean of fully stretched girth was 8.8 ± 0.8 cm. Comparing the mean of fully stretched penile lengths in both groups revealed statistical significant difference ($P < 0.001$) between them, whereas comparing the mean of fully stretched penile girths in both groups revealed statistical nonsignificant difference ($P = 0.474$) between them. There were significant positive correlations between fully stretched penile lengths and fully stretched penile girths in both groups. **Conclusion:** The average of fully stretched penile length in normal potent men is 12.9 cm, whereas the patients with ED tend to have significantly shorter penises (11.2 ± 1.5 cm)

Keywords :

Penis; Erectile Dysfunction Length; Human; Corporeal Tissue; Tunica Albugenia.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : **Taymour M. Ibrahim**



Title : Bilateral Testicular Tuberculomas: a Case Detection

Authors : Hassan A., El-Mogy S., Zalata K. and Mostafa T.

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.3

Abstract :

Genitourinary tuberculosis (TB) is the most frequent manifestation of extrapulmonary TB, where the epididymides, seminal vesicles and prostate are the commonly infected sites, followed by the testes. We report a 29-year-old man who presented with primary infertility since 2 years. He had a history of bilateral painful scrotal swelling with fever since 4 years, diagnosed as pyogenic scrotal abscess, which was managed by incision and drainage. At presentation, fever, weight loss and night sweats were absent. On examination, he had ovoid slightly tender, firm to hard irregular masses in the lower poles of both testes with no line of separation encroaching on both epididymes. Both testes were not felt distinctly and the overlying scrotal skin showed no signs of inflammation. Semen analysis revealed azoospermia. Scrotal colour coded duplex ultrasonography demonstrated moderately enlarged testes having well defined hypoechoic masses with foci of calcifications. Magnetic resonance imaging confirmed these findings. Biopsy and histopathology detected the presence of caseating granuloma and Ziehl-Neelsen staining of paraffin sections demonstrated acid-fast bacilli. The patient was treated with combination therapy. Tracing of the condition is discussed.

Keywords :

Swellings; Testis; Tuberculosis; Ultrasonography.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : **Taymour M. Ibrahim**



Title : Seminal Plasma Survivin in Fertile and Infertile Males

Authors : Roshdy N. and Mostafa T.

Published In : J. Urology

ISSN : 0022-5347

Impact Factor : 3.952

Abstract :

Purpose: We assessed survivin (an inhibitor of apoptosis) protein in the seminal plasma of infertile and fertile males.

Materials And Methods: Seminal plasma survivin was estimated by enzyme-linked immunosorbent assay in 23 healthy fertile volunteers, 22 men with oligo-asthenozoospermia, 37 with nonobstructive azoospermia and 12 with obstructive azoospermia. Histopathology and testicular sperm extraction were done in testicular tissue biopsies from obstructive azoospermia and nonobstructive azoospermia cases.

Results: Mean seminal survivin was highest in fertile controls, less in oligo-asthenozoospermic cases and low in nonobstructive azoospermia cases with significant differences. In obstructive azoospermia cases seminal plasma survivin was absent. Seminal survivin positively correlated with sperm concentration and total sperm motility and negatively correlated with the percent of sperm abnormal forms. Seminal survivin was detectable in nonobstructive azoospermia cases in which testicular sperm extraction was successful but absent in such cases when testicular sperm extraction was unsuccessful.

Conclusions: Seminal survivin is testicular in origin. It is related to spermatogenesis and sperm motility processes. Seminal survivin was related to successful testicular sperm extraction in nonobstructive azoospermia cases.

Keywords :

Testis; Sperm; Infertility, Male; BIRC5 protein, Human.

Faculty of Medicine**Dept.** : Andrology, Sexology and STDs**Name** : **Taymour M. Ibrahim****Title** : Putative role of carbon monoxide signaling pathway in penile erectile function**Authors** : Abdel Aziz MT, Mostafa T, Atta H, Wassef MA, Fouad HH, Rashed LA, Sabry D.**Published In** : J Sex Med**ISSN** : 1743-6095**Impact Factor** : 5.393**Abstract** :

Introduction: Erectile response depends on nitric oxide (NO) generated by NO synthase (NOS) enzyme of the nerves and vascular endothelium in the cavernous tissue. NO activates soluble guanylate cyclase (sGC), leading to the production of cyclic guanosine monophosphate (cGMP). cGMP activates cGMP-dependent protein kinase that activates Ca(2+)/ATPase pump that activates Ca²⁺/K efflux pump extruding Ca²⁺ across the plasma membrane with consequent smooth muscle cell relaxation. A role similar to that of NOS/NO signaling has been postulated for carbon monoxide (CO) produced in mammals from heme catabolism by heme oxygenase (HO) enzyme. **AIM:** To assess CO signaling pathway for erectile function by reviewing published studies. **Methods:** A systematic review of published studies on this affair based on Pubmed and Medical Subject Heading databases, with search for all concerned articles. **Main Outcome Measures:** Documentation of positive as well as negative criteria of CO/HO signaling focused on penile tissue. **Results:** The concept that HO-derived CO could play a role in mediating erectile function acting in synergism with, or as a potentiator for, NOS/NO signaling pathway is gaining momentum. CO/HO signaling pathway has been shown to partially mediate the actions of oral phosphodiesterase type 5 inhibitors. In addition, it was shown that the use of CO releasing molecules potentiated cavernous cGMP levels. However, increased CO production or release was reported to be associated, in some studies, with vasoconstriction. **Conclusion:** This review sheds a light on the significance of cavernous tissue CO signaling pathway that may pave the way for creation of therapeutic modalities based on this pathway.

Keywords :

Erectile dysfunction; Heme oxygenase; Carbon monoxide; Cavernous tissue; Nitric oxide; cGMP.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : **Taymour M. Ibrahim**



Title : Bilateral Epididymal Sarcoidosis

Authors : Hassan A., El-Mogy S., Zalata K. and Mostafa T.

Published In : Fertil Steril

ISSN : 0015-0282

Impact Factor : 4.167

Abstract :

Objective: To report a case of bilateral epididymal sarcoidosis. **Design:** Case report. Setting: University hospital. **Patient(S):** An azoospermic 29-year-old Caucasian male who had had an illness 2 years earlier with acute onset and progressive course of weight loss, fatigue and cough with painless subcutaneous nodules on the arms, upper thighs and eyelids. **Intervention(S):** Physical examination, scrotal ultrasonography, scrotal magnetic resonance imaging, chest x-ray and computed tomography (CT), urine and semen Ziehl-Neelsen stain and epididymal/testicular biopsies. **Main Outcome Measure(S):** Clinical, laboratory, radiologic and histopathologic data. **RESULT(S):** The patient had bilateral epididymal firm masses with normal sized testes and bilateral enlarged, firm, nonpainful inguinal lymph nodes. Scrotal ultrasonography showed diffuse, bilateral, epididymal enlargement with heterogeneous echo pattern and increased vascularity. Scrotal magnetic resonance imaging revealed diffuse, enlarged epididymis with no focal masses. The chest x-ray revealed prominent hilar shadows and the chest computed tomography showed mediastinal and hilar lymphadenopathy. Urine and semen Ziehl-Neelsen stains were negative for acid-fast bacilli. Epididymal histopathology revealed multiple noncaseating epithelioid granulomas with concentric arrangement of reticular fibers by reticulin stain. **Conclusion(S):** Scrotal involvement in sarcoidosis with its variable presentations should be considered.

Keywords :

Sarcoidosis; Epididymis; Swellings; Granuloma; Ultrasonography.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : **Taymour M. Ibrahim**



Title : Programmed Cell Death in Varicocele-bearing Testes

Authors : Hassan A., El-Nashar E. M. and Mostafa T.

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.3

Abstract :

Accelerated apoptosis is a significant factor in the pathophysiology of male infertility disorders associated with abnormal spermatogenesis. This study aimed to investigate apoptosis in varicocele-bearing testes. Sixty four men with varicocele (18 fertile and 46 infertile) were studied compared with eight men with obstructive azoospermic as controls. Apoptosis was assessed in testicular biopsy specimens using terminal deoxynucleotidyl transferase deoxyuridine triphosphate nick end labeling (TUNEL) method as well as electron microscopy. The results demonstrated that the occurrence of apoptotic changes comprised all types of germ cells but not affecting Sertoli cells. Mean tubular apoptotic indices of fertile or infertile men with varicocele were significantly higher than controls (mean \pm SD $4.55 \pm 1.03\%$, $6.29 \pm 1.82\%$ versus $2.71 \pm 0.45\%$, $P < 0.05$). Mean Leydig cells apoptotic indices of infertile men with varicocele were significantly higher than those of fertile men without varicocele as well as controls ($1.18 \pm 0.38\%$, $0.68 \pm 0.15\%$, $0.31 \pm 0.21\%$, $P < 0.05$). Apoptotic indices were nonsignificantly correlated with Johnsen score, testicular volume or varicocele grade. It is concluded that testicular apoptosis is increased in varicocele-associated men either fertile or infertile who may be implicated in associated spermatogenic dysfunction.

Keywords :

Apoptosis; Male infertility; Testis; TUNEL; Varicocele.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : Taymour M. Ibrahim



Title : Seminal Reactive Oxygen Species-Antioxidant Relationship in Fertile Males With and Without Varicocele

Authors : Mostafa T., Anis T., Imam H., El-Nashar A. R. and Osman I. A.

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.3

Abstract :

The aim of this study was to assess seminal reactive oxygen species (ROS)-antioxidants relationship in fertile and infertile men with and without varicocele. One hundred and seventy six males were studied; fertile healthy volunteers (n = 45), fertile men with varicocele (n = 45), infertile oligoasthenozoospermia (OA, n = 44) without varicocele and infertile OA with varicocele (n = 42). In their seminal plasma, two ROS parameters (malondialdehyde, hydrogen peroxide) and five antioxidants (superoxide dismutase, catalase, glutathione peroxidase, vitaminE, vitaminC) were estimated. Compared with fertile healthy men, in all other studied groups, estimated seminal ROS were significantly higher and estimated antioxidants were significantly lower. Infertile men with varicocele showed the same relationship as infertile men without varicocele. Sperm concentration, total sperm motility as well as sperm normal forms were negatively correlated with seminal malondialdehyde and were positively correlated with vitaminC. It is concluded that varicocele has an oxidative stress (OS) in fertile normozoospermic bearing conditions. This may allow understanding that, within men with varicocele, there is a threshold value of OS over which male fertility may be impaired.

Keywords :

Antioxidants; Male infertility; ROS; Semen; Varicocele.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : Taymour M. Ibrahim



Title : Seminal plasma cotinine and insulin-like growth factor-I in idiopathic oligoasthenoteratozoospermic smokers

Authors : Hassan A, Abo-Azma SM, Fayed SM and Mostafa T

Published In : BJU Int

ISSN : 1464-4096

Impact Factor : 2.704

Abstract :

Objective: To assess seminal plasma insulin-like growth factor-I (IGF-I) levels in cigarette smokers with idiopathic oligoasthenoteratozoospermia (iOAT). **Patients And Methods:** In all, 110 men were divided into fertile healthy non-smokers, fertile smokers, infertile non-smokers with iOAT and infertile smokers with iOAT. Semen was analysed and seminal cotinine and seminal IGF-I levels estimated. **Results:** There were significantly lower seminal IGF-I levels in the smokers and in men with iOAT than in controls and in both iOAT groups. Smokers, either fertile or with iOAT had significantly lower levels than in controls in mean semen volume, sperm production index, percentage of motile sperms, rapid linear forward progressive motility, linear velocity and sperm normal forms. Smokers with iOAT had significantly lower levels than non-smokers with iOAT in mean sperm production index, rapid linear forward progressive motility and linear velocity. In smokers, seminal cotinine was significantly and negatively correlated with both seminal IGF-I and sperm motility, while seminal IGF-I was positively correlated with the percentage of motile spermatozoa. **Conclusion:** Smoking effects on sperm variables could be mediated by decreased seminal IGF-I.

Keywords :

Male infertility; Smoking; IGF-I; Semen; Oligoasthenoteratozoospermia; Cotinine.

Faculty of Medicine**Dept.** : Andrology, Sexology and STDs**Name** : **Taymour M. Ibrahim****Title** : Soluble Fas and gonadal hormones in infertile men with varicocele**Authors** : Zedan H, El-Mekhlafi AW, El-Noweihi AM, Abd El-Azim NE and Mostafa T**Published In** : Fertil Steril**ISSN** : 0015-0282**Impact Factor** : 4.167**Abstract** :

Objective: To assess gonadal hormones in serum and semen as well as seminal antiapoptotic factor; soluble fibroblast associated (sFas) in infertile men associated with scrotal varicocele. **Design:** Prospective. **Setting:** Academic setting. **PATIENTS:** Eighty-eight males: fertile healthy controls (Gr1, n=12), fertile normozoospermia with varicocele (Gr2, n= 31) and infertile oligoasthenozoospermia with varicocele (Gr3, n = 45). **Main Outcome Measure(S):** Serum and seminal gonadal hormones: follicle stimulating hormone (FSH), luteinizing hormone (LH), prolactin (PRL) and testosterone (T), in addition to seminal sFas. **Results:** There were significant higher mean levels of serum FSH, serum and seminal LH with significant lower seminal T levels in cases of Gr3 compared with Gr2. Mean seminal sFas in Gr3 were significantly higher than its levels in Gr1 and 2 (mean \pm SE 8.34 ± 0.36 vs. 6.8 ± 0.53 and 6.06 ± 0.39 ng/mL, respectively). Nonsignificant differences between serum and seminal gonadal hormones were elicited between Gr2 and controls. Seminal sFas in various varicocele grades demonstrated nonsignificant differences. There were significant positive correlations between seminal sFas with serum FSH, serum LH, semen FSH, sperm abnormal forms percentage and significant negative correlations with sperm concentration and sperm motility. **Conclusion(S):** sFas could play a role in germ cell apoptosis in varicocele-associated cases.

Keywords:

Male infertility; Semen; Varicocele; Apoptosis; Fas; Sfas.

Faculty of Medicine

Dept. : Andrology, Sexology and STDs

Name : Taymour M. Ibrahim



Title : Effect of HO-1 cDNA-liposome Complex Transfer on Erectile Signalling of Aged Rats

Authors : Abdel Aziz M. T., Mostafa T., Atta H., Mahfouz S., Wassef M., Fouad H., Kamel M., Rashed L., Sabry D. and Mouhamed O.

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.3

Abstract :

This work aimed to assess the efficacy of haeme oxygenase-1 (HO-1) cDNA-liposome complex transfer as a mediator of erectile signalling in aged rats. One hundred and fifty aged white albino rats were equally divided into five groups: controls, rats receiving lipofectamine, rats receiving intracorporeal HO-1 cDNA-liposome complex, rats receiving HO-1 cDNA-liposome complex plus nitric oxide synthase (NOS) inhibitor and rats receiving HO-1 cDNA-liposome complex plus HO inhibitor. Six rats were killed from each group after 12, 24 and 48 h and after 1 and 2 weeks. In dissected cavernous tissues, the following were assessed: HO-1 gene expression, Western blot for HO-1, HO enzyme activity, cGMP and histopathology. The results showed that HO-1 cDNA-liposome complex transfer led to a significant increase in cavernous tissue HO-1 protein, HO-1 gene expression, HO enzyme activity and cGMP up to 1 week. NOS inhibition exhibited no effect on HO-1 gene enhancement of cavernous tissue HO enzyme activity or cGMP, whereas inhibition of HO significantly decreased these parameters. Histopathology of cavernous tissue demonstrated a significant dilatation of helicine arteries in HO-1 cDNA-liposome complex treated group after 48 h compared with the controls. It is concluded that HO-1 cDNA-liposome complex transfer augments cavernous tissue cGMP with subsequent sinusoidal relaxation.

Keywords:

Carbon monoxide; Cavernous tissue; Erectile dysfunction; Gene therapy; Haeme; Oxygenase.

Faculty of Medicine

Dept. : Andrology and Sexology

Name : Hussein Ghanem



Title : An Evidence-Based Perspective to the Medical Treatment of Male Infertility: A Short Review

Authors : S. Salah, H. M. Lotfy, S. M. Sabry, A. El Hamshary and H. Taher

Published In : Urologia Internationalis

ISSN : 0042-1138

Impact Factor : 0.891

Abstract :

Introduction: Currently there is no universally accepted gold standard diagnostic test to differentiate Evidence-based medicine (EBM) is the integration of best research evidence with clinical expertise and patient preferences and values. **Aim:** This narrative review aims to assist the physicians to make informed decisions based on the best available evidence in the area of male infertility and the patients' own preferences and values. **Methods:** In this review we present the current state of knowledge and uncertainties about the medical management of male infertility. We describe the best available evidence from systematic reviews, randomized controlled studies and observational studies where appropriate. **Results:** Data from the literature suggest that gonadotropin treatment of male infertility can lead to a significant increase in pregnancy rates, however larger studies are needed to confirm such findings. Studies including combinations of antiestrogens, antioxidants and androgens are promising but need confirmation with further research. **Conclusions:** Most current combination therapies consist of orphan medications without industry support. Andrology research centers and other dedicated departments and units need to conduct randomized controlled trials of sufficient duration, sample number and robust design for groups most likely to benefit from antiestrogens, L-carnitine, antioxidants and combination therapy. The ease of administration, low cost and mild side effects of antiestrogens justify their utility despite insufficient evidence of effect as monotherapies. Randomized controlled trials assessing other forms of medical therapy and combination therapy are available but are still in the preliminary stages.

Keywords :

Male infertility; Evidence-based medicine; Follicle-stimulating hormone.

Faculty of Medicine

Dept. : Andrology and Sexology

Name : **Rany Shamloul**



Title : Erectile Dysfunction, Cardiovascular Diseases and Depression:
Interaction of Therapy

Authors : Rany Shamloul

Published In : Expert Opinion on Pharmacotherapy

ISSN : 1465-6566

Impact Factor : 2.077

Abstract :

Several studies have revealed the intimate associations between erectile dysfunction (ED), ischemic heart disease (IHD) and depression. Whether the physicians should also screen for the other two components when a patient presents with one component of this triad is still an important question to be answered. These three components had been classified as independent medical conditions managed by unrelated medical services. Recently, the potential effect of medications of each condition on the other conditions had gained a lot of interest. The aim of the current review is to discuss the integrative view of association between cardiovascular diseases, erectile dysfunction and depression and to address the two direction impact of pharmacotherapy for IHD and depression on erectile function.

Keywords :

Cardiovascular diseases; Erectile dysfunctions; Psychological disorders; Therapy.

Faculty of Medicine

Dept. : Andrology and Sexology

Name : Rany Shamloul



Title : The Potential Role of the Heme Oxygenase/Carbon Monoxide System in Male Sexual Dysfunctions

Authors : Rany Shamloul

Published In : Journal of Sexual Medicine

ISSN : 1743-6109

Impact Factor : 6.199

Abstract :

Introduction: Recently there has been a growing interest regarding the role of carbon monoxide (CO) and its precursor, heme oxygenase (HO) in mediation of penile erection and their potential roles as molecular targets in treatment of erectile dysfunction. **AIM:** To review the available literature on the role of the HO/CO system in male sexual dysfunctions. **Methods:** This review will begin by a discussion of the physiology of the HO/CO system followed by a detailed assessment of the literature examining the role of HO/CO system in male sexual dysfunctions. **Main Outcome Measures:** The effect of HO/CO system on penile erection, ejaculation and priapism. **Results:** Most of the studies attempting to investigate the role of HO/CO in male sexual functions focused on penile erection. The majority of these studies did report a significant positive effect of the HO/CO system on penile erection. However, none of these studies examined the role of HO/CO system in aging animals; aging being considered the most important risk factor for ED. Furthermore, only one study tested the role of HO/CO system in erectile function. The important observation that HO-2 deficient mice have low bulbospongiosus muscle activity deserves extensive research on the value of HO inhibition in the treatment of premature ejaculation. Data from the only study on low-flow priapism and HO suggests that HO-1 is involved in the paradigm of low-flow priapism. **Conclusions:** The HO/CO system may have an important role in many male sexual functions. Extensive research is needed to precisely delineate the extent to which the HO/CO system plays in the physiology and pathophysiology of male sexual dysfunctions

Keywords :

Erectile dysfunction; Hemin; Carbon monoxide.

Faculty of Medicine

Dept. : Andrology

Name : Amr M. Gadalla



Title : Erectile Function in Men With Diabetes Type 2: Correlation With Glycemic Control

Authors : Awad H., Salem A., Gadalla A., El Wafa N. A. and Mohamed O. A.

Published In : Impotence Research

ISSN : 0955-9930

Impact Factor : 2.276

Abstract :

Men with diabetes have an increased risk for erectile dysfunction (ED) than those without diabetes. The diabetes control and complications trial clearly showed that better long-term control of blood glucose in diabetes type 1 is associated with decreased frequency and delayed the onset of microvascular complications. The aim of this study is to explore the role of glycemic control and its correlation to sexual function in patients with diabetes type 2. One hundred patients were selected for the study according to the following criteria: all the cases were presenting with diabetes type 2 as a single risk factor for ED, age being between 35 and 50 years and free of liver and kidney failure and blood dyscrasis. The selected patients were evaluated for sexual function by asking the patients to complete the abridged form of the International Index of Erectile Function (IIEF). The evaluation of glycemic control was based on the measurement of hemoglobin A_{1c} (HbA_{1c}) values. Our results showed that the level of HbA_{1c} is significantly higher with declining degrees of potency (P-value=0.003). Also, there is an association between potency degree and glycemic control (P=0.002). We conclude that glycemic control is independently and inversely associated with ED in men with diabetes type 2.

Keywords :

Erectile dysfunction; Diabetes mellitus type 2; Hemoglobin A.

Faculty of Medicine**Dept. :** Anesthesia**Name :** Ahmed M. Mukhtar**Title :** The Safety of Modern Hydroxyethyl Starch in Living Donor Liver Transplantation: A Comparison With Human Albumin**Authors :** Ahmed M. Mukhtar**Published In :** Anesthesia and Analgesia**ISSN :** 0003-2999**Impact Factor :** 2.214**Abstract :**

Methods: Forty patients undergoing living donor liver transplantation were prospectively randomized into two groups. Patients in the ALB group ($n = 20$) received 5% human albumin. Patients in the HES group ($n = 20$) received third generation HES (6% HES 130/0.4). Total colloid administration was limited to $50 \text{ mL} \cdot \text{kg}^{-1} \cdot \text{d}^{-1}$. The volume was given to maintain pulmonary artery occlusion pressure or central venous pressure between 5 and 7 mm Hg. If additional fluids were required, balanced crystalloid solution was used. Anesthetic and surgical techniques were standardized. Serum creatinine and cystatin C plasma levels were measured from arterial blood samples after induction of anesthesia, at the end of surgery and on the first 4 postoperative days.

Results: All 40 enrolled patients completed the study. Demographic and intraoperative variables were comparable in both groups. Postoperatively, the mean \pm sd volume was $6229 \pm 1140 \text{ mL}$ and $4636 \pm 1153 \text{ mL}$ in HES and ALB groups, respectively ($P = 0.003$). There was significantly larger net cumulative fluid balance in the ALB group $1100 \pm 900 \text{ mL}$ compared with the HES group $3047 \pm 2000 \text{ mL}$, $P = 0.029$. Serum creatinine, creatinine clearance and cystatin C plasma levels showed no significant differences between the two groups. One patient in each group developed acute renal failure requiring renal replacement therapy.

Conclusion: The use of HES 130/0.4 as an alternative to human albumin resulted in equivalent renal outcome after liver transplantation

Keywords:

Liver transplantation; HES 130/0.4; Albumin 5%; Renal function.

Faculty of Medicine

Dept. : Anesthesia

Name : **Ahmed M. Mukhtar**



Title : Comparison of Central Venous Oxygen Saturation and Mixed Venous Oxygen Saturation During Liver Transplantation

Authors : Ahmed M. Mukhtar

Published In : Anaesthesia

ISSN : 0003-2409

Impact Factor : 2.178

Abstract :

Central venous catheterisation is commonly performed during major surgery and intensive care and it would be useful if central venous oxygen saturation could function as a surrogate for mixed venous oxygen saturation. We studied 50 patients undergoing living related liver transplantation. Blood samples were taken simultaneously from central venous and pulmonary artery catheters at nine time points during the pre-anhepatic, anhepatic and postanhepatic phases. Four hundred and fifty sets of measurement were obtained. There was a good correlation between central venous oxygen saturation and mixed venous oxygen saturation. The mean (SD) difference (95% limit of agreement) was lowest at the first time point (1.06 (0.65)%,)1.94% to 2.7%) and then increased throughout the study but remained acceptable. The change in mixed venous oxygen and central venous oxygen saturations occurred mostly in parallel and as a result changes in mixed venous oxygen saturation were reflected adequately in the change in central venous oxygen saturation. The correlation between mixed venous oxygen saturation and cardiac output was poor.

Keywords :

Liver transplantation; SVO2; SCVO2.

Faculty of Medicine**Dept.** : Anesthesia**Name** : **Iman Saadawy****Title** : Effect of Dexmedetomidine on the Characteristics of Bupivacaine in a Caudal Block in Pediatrics**Authors** : Iman Saadawy**Published In** : Acta Anaesthesiol Scand**ISSN** : 0001-5172**Impact Factor** : 1.953**Abstract** :

Background: Dexmedetomidine (DEX) is a highly selective α_2 -adrenoceptor agonist that has been used increasingly in children. However, the effect of caudal DEX has not been evaluated before in children. This prospective randomized double-blinded study was designed to evaluate the analgesic efficacy of caudal DEX with bupivacaine in providing pain relief over a 24-h period.

Methods: Sixty children (ASA status I) aged 1–6 years undergoing unilateral inguinal hernia repair/orchidopexy were allocated randomly to two groups ($n = 30$ each). (Group B received a caudal injection of bupivacaine 2.5mg/ml, 1 ml/kg; Group BD received the same dose of bupivacaine mixed with DEX 1 μ g/kg during sevoflurane anesthesia. Processed electroencephalogram (bispectral index score), heart rate, blood pressure, pulse oximetry and end-tidal sevoflurane were recorded every 5min. The characteristics of emergence, objective pain score, sedation score and quality of sleep were recorded post-operatively. Duration of analgesia and requirement for additional analgesics were noted.

Results: The end-tidal sevoflurane concentration and the incidence of agitation were significantly lower in the BD group ($P < 0.05$). The duration of analgesia was significantly longer ($P < 0.001$) and the total consumption of rescue analgesic was significantly lower in Group BD compared with Group B ($P < 0.01$). There was no statistically significant difference in hemodynamics between both groups. However, group BD had better quality of sleep and a prolonged duration of sedation ($P < 0.05$).

Conclusion: Caudal DEX seems to be a promising adjunct to provide excellent analgesia without side effects over a 24-h period. It has the advantage of keeping the patients calm for a prolonged time. Implications statement: Caudally administered DEX (1 μ g/kg), combined with bupivacaine, was associated with an extended duration of post-operative pain relief.

Keywords :

Caudal anesthesia; Dexmedetomidine; Pediatrics.

Faculty of Medicine**Dept. :** Anesthesiology**Name :** **Mohammad Y. M. Ahmad****Title :** Perioperative Assessment of Coagulation in Paediatric Neurosurgical Patients Using Thromboelastography**Authors :** N. El Kady, H. Khedr, M. Yosry and S. El Mekawi**Published In :** European Journal of Anaesthesiology**ISSN :** 0265-0215**Impact Factor :** 1.55**Abstract :**

Background and objective Primary brain tumors may be associated with coagulation disorders which can pose intraoperative and postoperative management difficulties. Thromboelastography (TEG) is a useful technique for evaluating coagulability. In this study we evaluated the perioperative coagulation profile using both standard laboratory work and TEG in pediatric patients undergoing craniotomy for primary brain tumors.

Methods: 40 Pediatric patients were enrolled in the study. All patients received standard anesthesia. Blood was analyzed for both standard laboratory work and TEG at three points for each patient: preoperatively, intraoperatively and postoperatively. Post operatively patients were divided into two groups according to occurrence or not of postoperative haematomas.

GNH (non haematoma group) and GH (haematoma group). The standard blood work and TEG values for both groups were compared.

Results: Perioperative standard blood work was within normal limits for all patients with no significant difference between both groups. In GNH TEG values were indicative of a hypercoagulable state which started intraoperative and continued into the 1st postoperative day. In GH TEG values were indicative of a hypocoagulable state which was evident in the preoperative TEG values and continued into the intraoperative as well as post operative period.

Conclusion: TEG may be useful in the perioperative assessment and monitoring of coagulation in pediatric neurosurgical patients and helps in identifying patients at increased risk of bleeding or thromboembolic events.

Keywords :

Pediatric; Brain tumors; Craniotomy; Neurosurgery; Haemostasis; Thromboelastography; Hypocoagulability; Hypercoagulability.

Faculty of Medicine**Dept. :** Clinical Oncology**Name :** **Samy Abdel-Razek Alsirafy****Title :** Predictive Impact of Electrolyte Abnormalities on the Admission Outcome and Survival of Palliative Care Cancer Referrals**Authors :** Samy A. Alsirafy, Mahmoud Y. Sroor and Mohammad Z. Al-Shahri**Published In :** Palliative Medicine**ISSN :** 1096-6218**Impact Factor :** 1.9**Abstract :**

Background and Aim: Electrolyte abnormalities are common among patients with advanced cancer. Our aim was to estimate the prognostic significance of such abnormalities in a palliative care setting. **Methods:** A retrospective review of the medical records of inpatients with cancer referred to palliative care over a 25-month period. The five electrolytes studied were potassium, sodium, calcium, magnesium and phosphate. The prognostic impact of related abnormalities on admission outcome and overall survival was estimated in univariate analysis. **Results:** From 866 new cancer referrals, 259 (30%) were eligible for analysis. Abnormalities in sodium, calcium and magnesium levels were associated with a significant difference in inpatient death rates ($p = 0.004$, 0.001 and 0.04 , respectively) and overall survival ($p = 0.0008$ and 0.0008 and < 0.0001 , respectively). The status of potassium and phosphate had no significant impact on admission outcome or overall survival. The three electrolyte abnormalities associated with the highest inpatient death rate were hypercalcemia, hypernatremia and hypermagnesemia (69%, 68% and 62%, respectively). Patients with these abnormalities had the shortest median survival as well (12, 8 and 12 days, respectively). **Conclusion:** Some electrolyte abnormalities may be useful as prognostic indicators in the palliative care setting. However, their prognostic value needs to be investigated in prospective studies and adjusted against proven prognostic indicators.

Keywords :

Palliative care; Advanced cancer; Electrolyte abnormalities; Prognosis; Admission outcome.

Faculty of Medicine

Dept. : Clinical Oncology

Name : **Samy Abdel-Razek Alsirafy**



Title : Hypercalcemia in Advanced Head and Neck Squamous Cell Carcinoma: Prevalence and Potential Impact on Palliative Care

Authors : Samy A. Alsirafy, Mahmoud Y. Sroor and Mohammad Z. Al-Shahri

Published In : Supportive Oncology

ISSN : 1544-6794

Impact Factor : 0.0

Abstract :

Hypercalcemia is common in patients with advanced head and neck squamous cell carcinoma (HNSCC). In this study, hypercalcemia was detected in 46 (51%) of 90 eligible patients with HNSCC over 4 years. Compared with nonhypercalcemics, hypercalcemics were more likely to be referred to palliative care, while they were inpatients ($P = 0.004$). During the last 3 months of follow-up, hypercalcemic patients were more likely than nonhypercalcemics to be hospitalized for ≥ 14 days ($P = 0.01$) and to visit the emergency room more than once ($P = 0.04$). The median survival from the first hypercalcemic episode was 74 days (95% CI, 0–234). With data calculated from the date of referral to palliative care, hypercalcemics had a shorter survival than did nonhypercalcemics (43 vs 128 days, respectively; $P = 0.046$). Early detection and management of hypercalcemia in patients with HNSCC may improve the chance of preventing distressing symptoms and reducing unnecessary frequent emergency room visits and lengthy hospitalization.

Keywords :

Head and neck squamous cell carcinoma; Hypercalcemia; Prognosis; Palliative care.

Faculty of Medicine

Dept. : Clinical Oncology

Name : **Samy Abdel-Razek Alsirafy**



Title : For a Peaceful Cancer Death in Egypt: Palliative Care IS NOT

Authors : Samy A. Alsirafy

Published In : Hospice and Palliative Medicine

ISSN : 1049-9091

Impact Factor : 0.0

Abstract :

Misconceptions and lack of knowledge about palliative care (PC) amongst health care professionals are barriers to accessing PC by patients in need. Correction of misconceptions about PC is essential for the initiation and development of PC in Egypt where PC is still in the very early stage of development. This is the author's reply to misconceptions about PC expressed by Egyptian health care professionals while establishing the first specialist University hospital-based PC service in Egypt.

Keywords :

Egypt; Cancer; Palliative care; Barriers; Misconceptions.

Faculty of Medicine

Dept. : Clinical Pathology

Name : **Amani El Kholy**



Title : Diagnosis of Human Brucellosis in Egypt by Polymerase Chain Reaction

Authors : Amani El Kholy

Published In : Eastern Mediterranean Health Journal

ISSN : 1687-1634

Impact Factor : 0.0

Abstract :

This study aimed to establish an accurate and sensitive polymerase chain reaction (PCR) technique for the diagnosis of active human brucellosis in Egypt. We failed to extract Brucella DNA with a commercial kit, but an extraction kit designed in-house using 2 sets of primers [B4/B5 (223 bp) and JPF/JPR (193 bp)] was successful and more economical. The technique showed high sensitivity, specificity and accuracy. The PCR positivity increased significantly with increasing seropositivity titres by the standard tube agglutination test and showed 100% positivity in patients with positive blood cultures. We recommend using PCR as an alternative to culture for diagnosis of brucellosis.

Keywords :

Brucellosis; Egypt; PCR; Polymerase chain reaction.

Faculty of Medicine**Dept.** : Clinical Pathology**Name** : **Amani El Kholy****Title** : Acute Lower Respiratory Tract Infection Due to Chlamydia and Mycoplasma Spp. in Egyptian Children Under 5 Years of Age**Authors** : Amani El Kholy**Published In** : Tropical Pediatrics**ISSN** : 0142-6338**Impact Factor** : 1.112**Abstract** :

One hundred and eleven patients (57 males and 54 females) aged between 7 days and 59 months (mean \pm SD=11.8 \pm 13.2 months) were studied. The mean duration of symptoms at the time of enrollment was 5.67 \pm 5.14 days. Fourteen children (12.6%) were previously diagnosed with asthma, while contact with animals was reported for 26 patients (23.4%). Twenty-eight patients (25.2%) required hospitalization for a mean duration (\pm SD) of 4.5 \pm 2.63 days. IgM antibodies for Chlamydia were positive in 13 children (11.7%) and IgG in 6 (5.4%) while Mycoplasma IgM was positive in 5 (4.5%) and IgG in 3 (2.7%) cases. Four patients (3.6%) were positive for both. Children with previous episodes had a higher incidence of *Chlamydia* and *Mycoplasma* infections (RR=2.47, $p=0.07$ and RR=3.85, $p=0.006$ for all cases and those with more than two episodes, respectively). Seventy-six children (68.5%) had received antibiotics for the current episode before enrollment. Three children received macrolides (5.7%); none of whom was positive for Chlamydia or Mycoplasma. In conclusion, Chlamydia and Mycoplasma play a significant role in community-acquired pneumonia in preschool children of the age 1–5 years and are not appropriately covered by current antibiotic guidelines. Meanwhile, macrolides are warranted in patients with prolonged illness and those not responding to beta-lactams.

Keywords :

Lower respiratory infection; Pneumonia; Children; Mycoplasma; Chlamydia; Egypt.

Faculty of Medicine**Dept.** : Clinical Pathology**Name** : **Heba Abdelrazik****Title** : Mesenchymal Stem Cells (MSC) Inhibit Monocyte-Derived Dendritic Cell Maturation and Function by Selectively Interfering With the Generation of Immature Dendritic Cells. Central Role Of MSC-Derived Prostaglandin E2.**Authors** : G. M. Spaggiari, H. Abdelrazik, F. Becchetti and L. Moretta**Published In** : Blood**ISSN** : 0006-4971**Impact Factor** : 10.896**Abstract** :

Various studies analyzed the inhibitory effect exerted by mesenchymal stem cells (MSC) on cells of the innate or acquired immunity. Also dendritic cells (DCs) are susceptible to such inhibition. In this study, we show that MSCs strongly inhibit DC generation from peripheral blood monocytes. In the presence of MSCs, monocytes supplemented with GM-CSF and IL-4 did not acquire the surface phenotype typical of immature (CD14⁻, CD1a⁺) or mature (CD80⁺, CD86⁺, CD83⁺) DCs, failed to produce IL-12, and did not induce T cell activation or proliferation. Analysis of the molecular mechanism(s) responsible for the inhibitory effect revealed a major role of PGE₂. Thus, addition of the PGE₂ inhibitor NS-398 restored DC differentiation and function. Moreover, PGE₂ directly added to cultures of monocytes blocked their differentiation towards DCs in a manner similar to MSCs. Although IL-6 has been proposed to play a role in MSC-mediated inhibition of DC differentiation, our data indicate that PGE₂ and not IL-6 represents the key inhibitory mediator. Indeed, NS-398 inhibited PGE₂ production and DC differentiation with no effect on IL-6 production. These data emphasize the role of MSC in the inhibition of DC maturation and identify the molecular mechanisms responsible for the inhibitory effect.

Keywords :Mesenchymal stem cells; Dendritic cells; PGE₂.

Faculty of Medicine**Dept.** : Community Medicine**Name** : **Doa'a Ahmed E. Saleh****Title** : Prospective Cohort Study of Mother-to-Infant Infection and Clearance of Hepatitis C in Rural Egyptian Villages**Authors** : F. Sheb, S. El-Kamary, D. A. Saleh, M. Abdel-Hamid, N. Mikhail, A. Allam, H. El-Arabi, I. Elhenawy, S. El-Kafrawy, M. El-Daly, S. Selim, A. Abd El-Wahab, M. Mostafa, S. Sharaf, M. Hashem, S. Heyward, O. C. Stine, L. S. Magder, S. Stoszec and G. T. Strickland**Published In** : Medical Virology**ISSN** : 0146-6615**Impact Factor** : 2.576**Abstract** :

Although persistent transmission of hepatitis C virus (HCV) from infected mothers to their infants is reported in 4–8%, transient HCV perinatal infection also occurs. This prospective cohort study determined perinatal HCV infection- and early and late clearance-rates in 1,863 mother-infant pairs in rural Egyptian villages. This study found 15.7% and 10.9% of pregnant women had HCV antibodies (anti-HCV) and HCV-RNA, respectively. Among 329 infants born of these mothers, 33 (10.0%) tested positive for both anti-HCV and HCV-RNA 2 months following birth—29 (12.5%) having HCV-RNA positive mothers and 4 (with transient infections) having mothers with only anti-HCV. Fifteen remained HCV-RNA positive at one and/or 2 years (persistent infections), while 18 cleared both virus and antibody by 1 year (transient infections). Among the 15 persistent cases, 7 cleared their infections by 2 or 3 years. At 2- to 6- and at 10- to 12-month maternally acquired anti-HCV was observed in 80% and 5% of infants, respectively. Four perinatally infected and one transiently infected infant were confirmed to be infected by their mothers by the sequence similarity of their viruses. Viremia was 155-fold greater in mothers of infants with persistent than mothers of infants with transient infections. Maternal-infant transmission of HCV is more frequent than generally reported. However, both early and late clearance of infection frequently occurs and only 15 (4.6%) and 8 (2.4%) infants born of HCV-RNA positive mothers had detectable HCV-RNA at one and 2–3 years of age. Investigating how infants clear infection may provide important information about protective immunity to HCV.

Keywords :

Perinatal transmission; Hepatitis C virus; Risk factors; Viral clearance; Transient infection.

Faculty of Medicine**Dept.** : Dermatology**Name** : **Bakr M. El-Zawahry****Title** : Five-year Experience in the Treatment of Alopecia Areata with DPC**Authors** : B. M. El-Zawahry, D. A. Bassiuony, A. Khella and N. S. Zaki**Published In** : European Academy of Dermatology and Venereology**ISSN** : 0926-9959**Impact Factor** : 2.276**Abstract** :

Background The effectiveness of Diphencyprone (DPC) in alopecia areata (AA) was demonstrated in several studies with highly variable response rates ranging from 5% to 85%. **Objective** The response rate and variable factors affecting the prognosis were studied focusing on long-term follow-up with or without maintenance therapy. **Methods** A total of 135 cases of AA were treated with DPC. Patients were divided into five groups according to the area of scalp affected: Grade 1 AA: 25–49% scalp affection; Grade 2 AA: 50–74% scalp affection; Grade 3 AA: 75–99% scalp affection; alopecia totalis and alopecia universalis. An initial response was defined as appearance of new terminal hair within treated sites. Excellent response was defined as terminal hair covering >75% of the scalp. Relapse meant >25% hair loss. Maintenance therapy meant ongoing therapy once every 1–4 weeks after excellent response. Follow-up was performed to detect any relapse of AA. **Results** Ninety-seven patients continued therapy for ≥ 3 months. After an initial 3 month lag, cumulative excellent response was seen in 15 patients (15.4%), 47 patients (48.5%), 51 patients (52.6%) and 55 patients (55.7%) after 6, 12, 18 and 24 months respectively in a mean median time of 12 months. The only patient variable affecting the prognosis was baseline extent of AA. Excellent response was seen in 100%, 77%, 54%, 50% and 41% in Grade 1, Grade 2, Grade 3, AA totalis and AA universalis patients respectively. Side-effects were few and tolerable. Hair fall >25% occurred in 17.9% of patients on maintenance and 57.1% of patients without maintenance therapy (P-value = 0.025). **Conclusion** Diphencyprone is an effective and safe treatment of extensive AA. A long period of therapy is needed and will increase the percentage of responders especially in alopecia totalis and universalis. Maintenance therapy is recommended to reduce the risk of relapse.

Keywords :

Alopecia areata; Diphencyprone; Immunotherapy; Long-term follow-up.

Faculty of Medicine

Dept. : Dermatology

Name : Tahra Mohamed Leheta



Title : Role of the 585-nm Pulsed Dye Laser in the Treatment of Acne in Comparison With Other Topical Therapeutic Modalities

Authors : Tahra M Leheta

Published In : Cosmetic and Laser Therapy

ISSN : 1476-4172

Impact Factor : 0.0

Abstract :

Background: Acne vulgaris is a disease of the pilosebaceous unit characterized by the development of inflammatory and/or non-inflammatory lesions that may progress to scars. The increase of bacterial resistance and adverse effects, the teratogenicity of retinoids and lack of response to usual therapies has led to the investigation of new therapeutic alternatives. **Objective:** To evaluate the role of the pulsed dye laser in the treatment of acne in comparison with other topical therapeutic modalities. **Methods:** We studied 45 patients with mild to moderate acne. Patients were randomly divided into three groups: group A received treatment with pulsed dye laser therapy every 2 weeks, group B received topical preparations and group C was subjected to chemical peeling using trichloroacetic acid 25%. **Results:** At 12 weeks of treatment, there was a significant improvement of the lesions within each group with the best results seen in group A; however, no significant difference was detected between the three treatment protocols after the treatment period. Remission in the follow-up period was significantly higher in the first group. **Conclusions:** Pulse dye laser therapy mainly improves the inflammatory lesions of acne with few adverse effects.

Keywords :

Acne; Chemical peel; Topical agents.

Faculty of Medicine

Dept. : Dermatology

Name : Tahra Mohamed Leheta



Title : Comparative Evaluation of Long Pulse Alexandrite Laser and Intense Pulsed Light Systems for Pseudofolliculitis Barbae Treatment With one Year of Follow up

Authors : Tahra M Leheta

Published In : Indian Journal of Dermatology

ISSN : 0019-5154

Impact Factor : 0.0

Abstract :

Background: Existing remedies for controlling pseudofolliculitis barbae (PFB) are sometimes helpful; however the positive effects are often short lived. The only definitive cure for PFB is permanent removal of the hair follicle. **Aims:** Our aim was to compare the efficacy of the alexandrite laser with the intense pulsed light system in the treatment of PFB and to follow up the recurrence. **Methods:** Twenty male patients seeking laser hair removal for the treatment of PFB were enrolled in this study. One half of the face was treated with the long-pulse alexandrite laser and the other half was treated with the IPL system randomly. The treatment outcome and any complications were observed and followed up for one year. **Results:** All patients exhibited a statistically significant decrease in the numbers of papules. Our results showed that the alexandrite treated side needed seven sessions to reach about 80% improvement, while the IPL-treated side needed 10-12 sessions to reach about 50% improvement. During the one year follow up period, the alexandrite-treated side showed recurrence in very minimal areas, while the IPL-treated side showed recurrence in bigger areas. **Conclusions:** Our results showed that both systems might improve PFB but alexandrite laser was more effective at reducing PFB than IPL.

Keywords:

Intense pulsed light, Long-pulse alexandrite laser, Pseudofolliculitis barbae.

Faculty of Medicine**Dept. :** Dermatology**Name :** Omar Ahmed Azzam**Title :** Different Therapeutic Modalities for Treatment of Melasma**Authors :** Omar A. Azzam, Tahra M. Leheta, Noha A. Nagui, Eman Shaarawy, Rania M Abdel Hay and Rana F. Hilal**Published In :** Cosmetic Dermatology**ISSN :** 1473-2130**Impact Factor :** 0.0**Abstract :**

Background: Chemical peels and topical depigmenting agents have become a popular modality in the treatment of melasma. Aim: To compare the clinical efficacy of trichloroacetic acid peel 20% vs. Jessner's solution peel vs. the topical mixture of hydroquinone 2% and kojic acid. **Patients and methods:** Forty five patients with melasma were randomly assigned into three groups of fifteen patients each. Group A received Jessner's solution peel, group B received trichloroacetic acid peel 20% and group C received topical hydroquinone 2% and kojic acid. All patients were seen in follow-up period after 16 weeks; clinical evaluation using Melasma Area and Severity Index (MASI) score and photography were recorded before and after treatment and after 16 weeks. **Results:** There was a decrease in MASI score in all three groups after treatment and after follow-up period but after treatment MASI score was statistically significantly lower in group A than group C ($P = 0.01$) and it was also statistically significantly lower in group B than group C ($P < 0.001$) but there was no statistically significant difference between groups A and B. After the follow-up period, MASI score was statistically significantly lower in group A than group C ($P < 0.001$), statistically significantly lower in group B than group C ($P < 0.001$) and statistically significantly lower in group B than group A ($P = 0.035$). The statistical analysis was done through one-way anova followed by least significant difference (LSD). **Conclusion:** Trichloroacetic acid 20% showed better results than Jessner's solution as peeling agent and hydroquinone 2% with kojic acid as a topical agent in the treatment of melasma.

Keywords :

Melasma; Chemical peeling; TCA.

Faculty of Medicine

Dept. : Dermatology

Name : Omar S. El Safoury



Title : Treatment of Periocular Hyperpigmentation Due to Lead of Kohl (Surma) by Penicillamine: A Single Group Non-Randomized Clinical Trial

Authors : Omar S. El Safoury, Dina S. Abd El Fatah and Magdy Ibrahim

Published In : Indian Journal of Dermatology

ISSN : 0019-5154

Impact Factor : 0.0

Abstract :

Background: Periocular hyperpigmentation is a condition in which skin of eyelids become darker in color than the normal surrounding skin. Lead and other heavy metals produce increased pigmentation because of deposition of metal particles in the dermis and increased epidermal melanin production. **Aims:** This study was conducted to evaluate the dual effect of chelation therapy in treating periocular hyperpigmentation and lead toxicity. **Methods:** The study population consisted of nine females complaining from dark coloration of their eyelids. The nine females were continuously using kohl as eyeliner. Lead levels in conjunctiva and serum before and after D-penicillamine (D-PCN) oral administration were estimated in relation to vertical, horizontal length and degree of hyperpigmentation score. **Results:** Highly significant P values (0.000) were obtained as regard to the conjunctival lead levels, serum lead levels, horizontal length and degree of darkness score before and after D-PCN therapy. A less significant P value (0.040) was recorded as regard to the vertical length. **Conclusion:** Regardless other causes, this study spots the light on a new concept for periocular hyperpigmentation from lead toxicity in adult females using kohl and suggests D-PCN in a low divided dose (750 mg/day) for its treatment

Keywords:

D-Penicillamine; Eyelid cosmetics; Kohl; Lead toxicity.

Faculty of Medicine

Dept. : Dermatology

Name : **Omar S. El Safoury**



Title : Quantitation of Mast Cells and Collagen Fibers in Skin Tags

Authors : Omar S. El Safoury, Marwa M Fawzy, Zeinab M El Maadawa and Dalia H Mohamed

Published In : Indian Journal of Dermatology

ISSN : 0019-5154

Impact Factor : 0.0

Abstract :

Background: Skin tags are common benign skin tumors usually occurring on the neck and major flexors of elder people. **Aims:** The aim of this study is to perform quantitation of mast cells and collagen fibers in skin tags and normal skin in diabetics and nondiabetics, to find a possible correlation between mast cells and collagen fibers in the pathogenesis of skin tags. **Methods:** Thirty participants with skin tags were divided into two groups (15 diabetic and 15 nondiabetic). Three biopsies were obtained from one anatomical site: A large skin tag, a small skin tag and adjacent normal skin. Mast cells stained with Bismarck brown were counted manually in ten different fields of each section with magnification X1000 and the average count was correlated with the percentage of mean collagen area in five fields done by the image analyzer. **Results:** A statistically significant correlation between mast cell count and percentage of collagen mean area was detected in both studied groups (except in large skin tags of the nondiabetic group). **Conclusion:** The positive correlation between mast cell count and percentage of collagen mean area suggests the critical role of mast cells in the etiogenesis of skin tags through its interaction with fibroblasts.

Keywords :

Image analyzer; Mast cells; Mean collagen area%

Faculty of Medicine

Dept. : Dermatology

Name : Omar S. El Safoury



Title : A Study Comparing Chemical Peeling Using Modified Jessner's Solution and 15% Trichloroacetic Acid Versus 15% Trichloroacetic Acid in the Treatment of Melasma

Authors : O. S. Safoury, N. M. Zaki, E. A. El Nabarawy and E. A. Farag

Published In : Indian Journal of Dermatology

ISSN : 0019-5154

Impact Factor : 0.0

Abstract :

Background: Melasma is a symmetric progressive hyperpigmentation of the facial skin that occurs in all races but has a predilection for darker skin phenotypes. Depigmenting agents, laser and chemical peeling as classic Jessner«SQ»s solution, modified Jessner«SQ»s solution and trichloroacetic acid have been used alone and in combination in the treatment of melasma. **Objectives:** The aim of the study was to compare the therapeutic effect of combined 15% Trichloroacetic acid (TCA) and modified Jessner«SQ»s solution with 15% TCA on melasma. **Materials and Methods:** Twenty married females with melasma (epidermal type), with a mean age of 38.25 years, were included in this study. All were of skin type III or IV. Fifteen percent TCA was applied to the whole face, with the exception of the left malar area to which combined TCA 15% and modified Jessner«SQ»s solution was applied. **Results:** Our results revealed statistically highly significant difference between MASI Score (Melasma Area and Severity Index) between the right malar area and the left malar area. **Conclusion:** Modified Jessner«SQ»s solution proved to be useful as an adjuvant treatment with TCA in the treatment of melasma, improving the results and minimizing postinflammatory hyperpigmentation.

Keywords:

Classic jessner's; Chemical peeling; Melasma.

Faculty of Medicine

Dept. : Dermatology

Name : **Mohammad Ali El Darouti**



Title : Ligneous Conjunctivitis with Oral Mucous Membrane Involvement and Decreased Plasminogen Level

Authors : M. El-Darouti, A. A. Zayed, G. Y. El-Kamah and M. I. Mostafa

Published In : Pediatric Dermatology

ISSN : 0736-8046

Impact Factor : 1.039

Abstract :

Ligneous conjunctivitis (MIM 217090) is a rare autosomal recessive hereditary disorder .

We report a case with both ligneous conjunctivitis and ligneous periodontitis in association with plasminogen type I deficiency .

Diagnosis was based on the clinical and histological findings and most importantly, decreased serum level of plasminogen type I.

Keywords :

Ligneous conjunctivitis; Ligneous periodontitis; Plasminogen type I.

Faculty of Medicine

Dept. : Dermatology

Name : **Mohammad Ali El Darouti**



Title : The use of Sulfasalazine and Pentoxifylline (Low-Cost Antitumour Necrosis Factor Drugs) as Adjuvant Therapy for the Treatment of Pemphigus Vulgaris: A Comparative Study

Authors : M. El-Darouti, S. Marzouk, R. Abdel Hay, A. El Tawdy, M. Fawzy, T. Leheta, H. Gammaz and N. Al Gendy

Published In : British journal of dermatology

ISSN : 0007-0963

Impact Factor : 3.5

Abstract :

Background: Pemphigus vulgaris (PV) represents a potentially life-threatening autoimmune blistering disease in which IgG autoantibodies are directed against cell-cell adhesion molecules. Tumour necrosis factor (TNF)- α has been suggested to have a possible role in the mechanism underlying acantholysis.

Objectives: This comparative double-blinded study was carried out to estimate the use of both sulfasalazine (SSZ) and pentoxifylline (PTX) (low-cost anti-TNF drugs) as an adjuvant therapy for PV .

Methods: The study included 64 patients with PV: 42 patients received the full treatment regimen (with SSZ and PTX) and 22 patients followed the same regimen except they received placebo instead of PTX and SSZ. Five healthy subjects were included as controls. Serum samples were taken to measure TNF- α levels in the control group and before starting treatment in both the patient groups and this was repeated every 2 weeks for 8 weeks; a clinical assessment was made every week for all the patients.

Results: The serum level of TNF- α was statistically higher in both groups of patients than in the healthy individuals. There was a statistically significant decrease in the serum levels of TNF- α in patients in group 1 compared with those in group 2 at 6 and 8 weeks. There was also a significant clinical improvement in patients in group 1 compared with those in group 2.

Conclusion: The use of PTX and SSZ as adjuvant therapy in the treatment of PV induced a faster and more significant decrease in the serum level of TNF- α and this decrease was associated with rapid clinical improvement.

Keywords :

Pemphigus; Pentoxifylline; Sulfasalazine.

Faculty of Medicine

Dept. : Dermatology

Name : **Manal A. Bosseila**



Title : Topical Calcineurin Inhibitors in Atopic Dermatitis: A Systematic Review and Meta-Analysis

Authors : M. M. Y. El-Batawy, M. A.-W. Bosseila, H. M. Mashaly and V. S. G. A. Hafez

Published In : Dermatological Science

ISSN : 0923-1811

Impact Factor : 2.973

Abstract :

Objectives: To build a critical appraisal of the available literature to evaluate the effectiveness of topical calcineurin inhibitors in treatment of atopic dermatitis (AD), in comparison to topical corticosteroids (TCs) and/or placebo. **Review methods:** Design: systematic review and meta-analysis. Data sources: electronic search of MEDLINE Pubmed along the last 10 years (1997–2006). Study selection: randomized control trials of TCIs reporting efficacy outcomes, in comparison to TCs or vehicle (placebo) or both. Data synthesis: of **210** articles, 19 studies were included, 10 for tacrolimus and 9 for pimecrolimus, involving **7378** patients of whom **2771** applied tacrolimus, **1783** applied pimecrolimus and **2824** were controls. Both drugs were significantly more effective than a vehicle. However, two long-term trials comparing demonstrated the value of pimecrolimus in reduction of flares and steroid-sparing effect after 6 months. Compared to TCs, both 0.1% and 0.03% tacrolimus ointments were as effective as moderate potency TCs and more effective than a combined steroid regimen. Tacrolimus was more effective than mild TCs. **Conclusions:** TCIs in AD are more effective than placebo. Although less effective than TCs, pimecrolimus has its value in long-term maintenance and as a steroid-sparing agent in AD, whenever used early enough, at first appearance of erythema and/or itching. In treatment of moderate to severe AD, topical tacrolimus is as effective as moderately potent TCs and more effective than mild preparations. Chronic AD lesions of the face and flexures are the most justified indication for topical calcineurin inhibitors.

Keywords :

Topical calcineurin inhibitors; Tacrolimus; Pimecrolimus; Atopic dermatitis; Systematic review; Meta-analysis; Randomized control trials.

Faculty of Medicine**Dept.** : Dermatology**Name** : **Hesham Zaher****Title** : Serum and Tissue Expression of Transforming Growth Factor Beta 1 in Psoriasis**Authors** : Hesham Zaher, Olfat Shaker, Mohamed EL-Komy, Amira El-Tawdi, Marwa Fawzi and Dina Kadry**Published In** : European Academy of Dermatology and Venereology**ISSN** : 0926-9959**Impact Factor** : 2.276**Abstract** :

Background In psoriasis, keratinocyte hyperplasia may be explained by imbalance of growth factors responsible for epidermal proliferation and altered metabolism of their receptors. Transforming growth factor-beta 1 (TGF- β 1) implications in the pathogenesis of psoriasis can be attributed to several mechanisms besides keratinocyte cell cycle inhibition. Objectives To evaluate the relation between serum and tissue levels of TGF- β 1 in psoriasis and their correlation with disease parameters. Patients and methods Serum and punch biopsy of involved and non-involved skin of 22 patients with psoriasis vulgaris and 10 controls were collected for quantification of TGF- β 1 by enzyme-linked immunosorbent assay kit. Results Serum level of TGF- β 1 in psoriatic patients was higher than controls in a statistically non-significant manner. Correlations between serum level of TGF- β 1 and extent of the disease ($P = 0.007$) and Psoriasis Area and Severity Index (PASI) score ($P = 0.005$) were observed. Mean tissue levels of TGF- β 1 were highest in psoriatic lesions in contrast to normal skin of psoriatic patients and healthy controls, but not statistically significant. Correlation between tissue levels of TGF- β 1 in non-involved skin and extent of the disease ($P = 0.007$) and PASI score ($P = 0.013$) was detected. Correlation was detected between levels of TGF- β 1 in psoriatic plaques and serum of patients ($P = 0.035$), but not between levels of TGF- β 1 in non-involved skin and serum. Conclusions Tissue expression of TGF- β 1 in psoriasis may be affected by the stage of development of the lesion. The direct relation between TGF- β 1 in psoriatic plaques and serum imply that the mechanisms for TGF- β 1 production and release in both these compartments may be related.

Keywords :

keratinocyte; PASI; Psoriasis; Transforming growth factor beta1.

Faculty of Medicine

Dept. : Internal Medicine

Name : Amin Roshdy Soliman

Title : Sirolimus Therapy for Patients With Adult Polycystic Kidney Disease: A Pilot Study

Authors : A. R. Soliman, E. Ismail, S. Zamil and A. Lotfy

Published In : Transplantation Proceedings

ISSN : 0041-1345

Impact Factor : 1.055

Abstract :

A pilot study was performed on adult polycystic kidney disease patients (PCKD) to examine the effect of the anti-proliferative m-TOR inhibitor drug sirolimus, on growth of renal cysts. Eight consecutive PCKD patients were given sirolimus, (1 mg /d, PO) for 6 consecutive months, in addition to an angiotensin receptor blocker (ARB), namely telmisartan. Another 8 PCKD patients were served as control given telmisartan alone. All PCKD patients had serum creatinine less than 2 mg/dl with a negative urine culture before enrollment. All patients were diagnosed by a renal MRI study with measurement of renal volumes. After a follow-up of 6 months, patients were rescanned to measure the MRI volumes again. Renal function was stable in 5 out of 8 in the sirolimus group, improved in two cases and worsened in one with a rise of serum creatinine above 2mg/dl resulting in his exclusion after 5 months follow-up. On the other hand, serum creatinine was stable in three of control group, worsened in three and improved in 2. Four patients in the sirolimus group had infectious complications namely UT infection in 2; treated with antibiotics and monilial pharyngitis in 2 which were treated with topical antifungal and were cured. In the control group, only two developed UT infection and were treated. Hematological tests were normal in all patients. There was an insignificant rise in kidney volume measured by MRI in the sirolimus group (2845 ml vs 3221 ml after 6 months, p=NS) compared to a significant rise in the control group (2667ml vs 3590 ml after 6 months, p< 0.05). We can conclude that sirolimus, in addition to an ARB, might be of benefit for PCKD patients presenting early in their illness.

Keywords :

Sirolimus ; Polycystic kidney; MRI; Angiotensin blockers.

Faculty of Medicine**Dept.** : Industrial Medicine and Occupational Diseases**Name** : **Sahar Ali Farahat****Title** : Effect of Occupational Exposure to Elemental Mercury in the Amalgam on Thymulin Hormone Production Among Dental Staff**Authors** : S. A. Farahat, L. A. Rashed, N. H. Zawilla and S. M. Farouk**Published In** : Toxicology and Industrial Health**ISSN** : 0748-2337**Impact Factor** : 0.731**Abstract** :

Occupational exposure of dental staff to elemental mercury vapor released from dental amalgam is an issue of concern because of the possible immunological and neurological adverse outcomes. Recently, studies have reported that inorganic mercury induces immunosuppression by decreasing the production of thymus gland hormone (thymulin). This study aimed at investigating mercury body burden in dental staff and the relation of this burden to the potential impact of mercury on thymus gland hormone level (thymulin). Besides, the work aimed at verifying mercury effect on nitric oxide synthetase as a possible mechanism of its immunotoxicity. The study population consisted of a group of dental staff ($n = 39$) [21 dentists and 18 nurses] and a matched control group ($n = 42$). Each individual was subjected to detailed occupational and medical history taking and to estimation of urinary mercury (U-Hg) and blood mercury (B-Hg) as indicators of mercury body burden and exposure, respectively. Measurement of total thymulin hormone blood level and plasma level of nitrite and nitrate (indicators of nitric oxide) was also done. The study showed a significantly increased U-Hg and B-Hg levels in the dental staff compared to their controls. This elevation of mercury body burden was associated with significant reduction in thymulin hormone blood level and nitric oxide parameters. These results were more evident in the group of nurses compared to the dentists. In conclusion, our results show that dentists and dental nurses have significant exposure to mercury vapor and point to the negative impact of mercury on thymus gland functions and confirm the implication that the nitric oxide pathway is a possible mechanism for this impact. Moreover, the study raises attention to the importance of hygiene measures in reduction of exposure to mercury vapor released from dental amalgam.

Keywords :

Cell-mediated immunity; Dental amalgam; L-arginine nitric oxide pathway; Mercury vapor; Thymulin; Thymus gland.

Faculty of Medicine

Dept. : Internal Medicine

Name : **Salwa I. Mohamed**



Title : The Incidence of Biopsy-Proven Glomerulonephritis in Cairo University, Egypt: A 5-Year Study

Authors : Salwa Ibrahim and Ahmed Fayed

Published In : NDT Plus

ISSN : 1753-0784

Impact Factor : 0.0

Abstract :

The incidence of biopsy proven GN varies in different geographical areas and is affected by socio- economic conditions, race, differences in genetic susceptibility and environmental exposure. Recent studies suggested a changing pattern of incidence of GN in different parts of the world .

Our study aimed to obtain a comprehensive review of the incidence of biopsy proven GN in Cairo University, Egypt over the last 5 years. We analyzed the clinical and pathological data of all renal biopsy samples that were obtained during the period from July 2003 to 2008. Age, gender, indication of renal biopsy and the pathological findings were recorded for analysis .

Keywords:

Incidence; Glomerulonephritis; Egypt.

Faculty of Medicine

Dept. : Internal Medicine

Name : **Salwa I. Mohamed**



Title : Serum FGF23 Levels in Chronic Hemodialysis Patients

Authors : Salwa Ibrahim and Laila Rashed

Published In : Int Urol Nephrol

ISSN : 0301-1623

Impact Factor : 0.48

Abstract :

Background: Serum FGF23 level is increased in chronic kidney disease (CKD) patients as a compensatory mechanism to hyperphosphatemia. FGF23 directly signals in the parathyroid glands and can be used to predict future secondary hyperparathyroidism in dialysis patients .

Methods: FGF23 and the above mentioned characteristics were measured in 50 chronic Haemodialysis patients. We analyzed the correlation between FGF23 and the other characteristics by using the Pearson correlation coefficient and multiple regression analysis .

Results: FGF23 was significantly increased in Haemodialysis patients compared with healthy controls (1525 ± 373 vs. 37 ± 9 pg/ml, $P < 0.0001$). There was a significant negative correlation between log FGF23 and $1,25(\text{OH})_2 \text{D}_3$ ($R = -0.375$, $P = 0.009$) and a significant positive correlation between log FGF23 and log PTH values ($R = 0.287$, $P = 0.041$). In multiple regression analysis log PTH and $1,25(\text{OH})_2 \text{D}_3$ values were independent predictors of log FGF23 ($P = 0.037$ and 0.009 , respectively).

Conclusions: Our results revealed a marked increase in FGF23 levels in Haemodialysis patients. PTH and vitamin D3 were independent predictors of FGF23 in the study group. Serum phosphate did not correlate with or predict FGF23 level despite the high prevalence of hyperphosphatemia in the study group.

Faculty of Medicine**Dept.** : Internal Medicine**Name** : **Salwa I. Mohamed****Title** : Quality of Care Assessment and Adherence to the International Guidelines Considering Dialysis, Water Treatment and Protection Against Transmission of Infections in University Hospital-Based Dialysis Units in Cairo, Egypt**Authors** : Salwa Ibrahim**Published In** : Hemodialysis International**ISSN** : 1492-7535**Impact Factor** : 0.0**Abstract** :

In this retrospective study, we assessed the current practice patterns of care for HD patients in the Kaser El-Aini Nephrology and Dialysis Center in comparison with Dialysis Outcomes Quality Initiative Guidelines, European Best Practice Guidelines, Centers for Disease Control and Prevention guidelines for prevention of transmission of infections among HD patients and American Association for Medical Instrumentation (AAMI) standards for dialysis water quality. The mean percent of urea reduction was $63 \pm 8.8\%$ in prevalent HD patients. An arteriovenous fistula was the vascular access in 91% of prevalent HD patients, whereas a temporary catheter was used in 9% of cases mostly as a bridge till arteriovenous fistula creation/maturation. Bicarbonate was the base used in 80% of the cases. Ninety-seven percent patients had thrice-weekly sessions and 3% had two dialysis sessions/wk. The mean serum albumin was 4.19 ± 0.39 g/dL; 66.66% of prevalent patients had serum albumin level >4 g/dL. The mean serum calcium was 8.66 ± 1.4 mg/dL, phosphorus was 6.26 ± 2.54 mg/dL and approximately 60% of patients had a serum phosphorus level >5.5 mg/dL. Seventy percent of the patients were hepatitis C virus positive and 4% were hepatitis B surface antigen positive and all were negative for the human immunodeficiency virus serological test. The current audit revealed a reasonable quality of care for HD patients in the fields of vascular access care, dialysis adequacy and nutrition areas.

Faculty of Medicine

Dept. : Internal Medicine

Name : Manal M. El Menyawi



Title : Clinical Features of Behcet,s Disease in Egypt

Authors : Manal M. El Menyawi, Hala M. Raslan and Amr Edrees

Published In : Rheumatology International

ISSN : 000-00

Impact Factor : 0.0

Abstract :

Sixty-three patients with Behcet,s disease (BD)were studied. Sixty-one patients were men, ,two were women. The mean onset of disease varied between 17 and 37.4 years. The commonest manifestation was oral ulcers (100%) ,followed by genital ulcers (96.8%) ,vascularlesions (57.1%),cutaneous(55.5%),ocular (47.6%),joint (36.5%),neurological (34.9%),gastrointestinal(19%) and cardiac(6.3%).BD in Egyptians shows higher male-to-female ratio and higher incidence of vascular and neurological lesions.

Keywords :

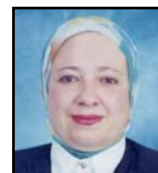
Behcet,s disease; Vasculitis; oral ulcers.

Faculty of Medicine**Dept.** : Medical Biochemistry and Molecular Biology**Name** : **Olfat G. Shaker****Title** : MxA Expression as Marker for Assessing the Therapeutic Response in HCV Genotype 4 Egyptian Patients**Authors** : O. Shaker, A. Ahmed, W. Doss and M. Abdel-Hamid**Published In** : Viral Hepatitis**ISSN** : 1365-2893**Impact Factor** : 3.326**Abstract** :

The prevalence of hepatitis C virus (HCV) infection varies across the world, with the highest number of infections reported in Egypt. Expression of the MxA gene has been found to be a reliable and sensitive marker for the induction of endogenous type I interferons (IFNs) during viral infections. This study examined the correlation of gene expression of MxA with the response to treatment with pegylated-IFN-alfa2b and ribavirin. Fifty patients with type 4 HCV and 20 healthy volunteers as controls were enrolled in a prospective study designed with strict inclusion criteria to nullify the effect of confounding variables and further minimize selection bias. Quantification of HCV-RNA and MxA gene by real-time PCR was performed for every patient and quantification of MxA gene was performed for controls. There was a statistically significant difference between patients and control group as regards the quantity of MxA gene expression ($P < 0.05$) (Mann-Whitney test) ($P = 0.004$). There was a statistically significant difference between responders and nonresponders ($P < 0.05$): responders showed a higher percentage of cases with initial MxA < 26 ($P < 0.05$). We conclude that MxA protein expression is a sensitive biological marker for ongoing virus replication and presence of type 1 IFN. These results highlight the importance of the detection of MxA expression at the start of therapy as a factor for assessing the likelihood of HCV genotype 4 patients to achieving a sustained virological response to treatment with IFN-a2 in combination with ribavirin.

Keywords :

Genotype 4; Hepatitis C virus; Interferon; MxA.

Faculty of Medicine**Dept.** : Medical Biochemistry and Molecular Biology**Name** : **Olfat G. Shaker****Title** : Glutathione Peroxidase, Superoxide Dismutase and Catalase Activities in Hepatic Tissue from Children With Glycogen Storage Disease**Authors** : N. A. Ismail, S. H. Okasha, A. Dhawan, A. M. O. Abdel Rahman, O. G. Shaker and N. A. Sadik**Published In** : Archives of Medical Science**ISSN** : 000-000**Impact Factor** : 0.772**Abstract** :

Introduction: The glycogen storage diseases are caused by inherited deficiencies of enzymes that regulate the synthesis or degradation of glycogen. The most common forms of glycogen storage disease (GSD) are types I, II, III and IV, which may account for more than 90% of all cases. The most common form is type I, or von Gierke's disease, which occurs in one out of every 100,000 births. Intracellular antioxidant defence is primarily provided by antioxidant enzymes, which catalyse decomposition of reactive oxygen species. To study the oxidative stress status in children with glycogen storage disease by determining activities of glutathione peroxidase, superoxide dismutase and catalase in liver tissue. **Material and methods:** Nine children suffering from glycogen storage diseases types I and III were studied. They were selected from the Hepatology Clinic, Cairo University and compared with children who happened to have incidental normal liver biopsy. Glutathione peroxidase (GPX), superoxide dismutase (SOD) and catalase (CAT) levels were measured in fresh liver tissue using ELISA. **Results:** Glycogen storage disease patients showed significant increases in SOD and GPX and there were significant correlations between SOD and both direct bilirubin and prothrombin concentration and between GPX activity and both ALT and AST. **Conclusions:** Oxidative stress could play a role in the pathogenesis of glycogen storage disease. These preliminary results are encouraging to conduct more extensive clinical studies using adjuvant antioxidant therapy.

Keywords :

Glutathione peroxidase; Superoxide dismutase; Catalase; Glycogen storage disease; Oxidative stress.

Faculty of Medicine

Dept. : Medical Biochemistry and Molecular Biology

Name : Olfat G. Shaker



Title : The Multiple Faces of Nicotine and its Implications in Tissue and Wound Repair

Authors : J. W. Martin, S. S. Mousa, O. Shaker and S. A. Mousa

Published In : Experimental Dermatology

ISSN : 1600-0625

Impact Factor : 3.259

Abstract :

Nicotine, one of the thousands of chemicals in cigarette smoke has a highly debated effect on cell proliferation and tissue healing. Recent studies documented its proangiogenesis effects by stimulating endothelial cell $\alpha 7$ -nonneuronal nicotinic acetyl choline receptors ($\alpha 7$ N-nAChR). It is well known that individuals who smoke or have diabetes experience impaired wound healing although for different reasons. This review evaluates several current studies relating to nicotine's ability to mediate cellular activation, migration and angiogenesis in attempts to correlate these data with nicotine's ability to repair wounds in ischaemic tissue. While its beneficial effects are still under investigation, important findings regarding nicotine's acceleration of atherosclerosis, tumor angiogenesis, cell proliferation and resistance to apoptosis put its systemic use into question. Based on the good and bad sides of nicotine, it is recommended to restrict its utility to local applications.

Keywords :

Angiogenesis; Growth factors; Integrin receptors; Intracellular signaling; Nicotine; Nicotinic receptors; Nonneuronal nicotinic acetyl choline receptors; Tissue repair; Wound healing.

Faculty of Medicine**Dept. :** Medical Biochemistry and Molecular Biology**Name :** **Olfat G. Shaker****Title :** Detection of Myxovirus Resistance Protein A in Lichen Planus Lesions and Its Relationship to Hepatitis C Virus**Authors :** O. G. Shaker, N. Hantar, S. El-Tahlawi, A. El-Tawdi, H. El-Hadidi, S. Hantar, A. El-Refai and R. William**Published In :** British Journal of Dermatology**ISSN :** 1365-2133**Impact Factor :** 3.489**Abstract :**

Background Lichen planus (LP) is an inflammatory disease of the skin and oral mucosa. Studies suggested that type I interferons (IFNs) could play an important role in the cytotoxic inflammation in LP. Type I IFNs stimulate the production of several IFN-induced proteins including myxovirus resistance protein A (MxA protein). The association of LP and chronic hepatitis C is well established, with variable prevalence rates among different populations. Many authors have considered hepatitis C virus (HCV) as a possible antigen for inducing cytotoxic immune response in LP. Objectives To investigate the role of type I IFNs in LP through the detection of MxA protein and to compare the expression of MxA protein between HCV-positive and HCV-negative patients with LP in an attempt to clarify the role of HCV in the pathogenesis of LP. Methods The study included 33 skin biopsies from patients with LP and 10 control biopsies. MxA mRNA was detected by reverse transcription-polymerase chain reaction. HCV-specific antibodies were detected in patient sera by enzyme-linked immunosorbent assay. Results Our analysis revealed a significantly higher level of MxA protein in all the LP skin biopsies compared with controls. The expression was significantly higher in HCV-positive patients than in HCV-negative patients. Conclusions Type I IFNs play a role in the pathogenesis of LP and HCV could induce LP through increasing the production of type I IFNs.

Keywords :

Hepatitis C virus; Lichen planus; Myxovirus resistance protein A; Type I interferons.

Faculty of Medicine

Dept. : Medical Biochemistry and Molecular Biology

Name : Olfat G. Shaker



Title : Possible Role of Telomerase and Sfas in Pathogenesis of Various Bladder Lesions Associated With Schistosomiasis

Authors : Olfat G. Shaker, Olfat Hammam, Abeya Salehd, Tarek El Leithy and Mohamed Wishahi

Published In : Clinical Biochemistry

ISSN : 0009-9120

Impact Factor : 1.926

Abstract :

Objectives: To find the role of telomerase and sFas in the pathogenesis of various bladder lesions associated with schistosomiasis and to correlate the results with clinicopathological parameters. **Design and methods:** One hundred bladder samples were taken, including 65 cases with bladder cancer, 25 cases with chronic cystitis and 10 samples from normal bladder tissue as control. Telomerase activity was measured using TRAP and hTERT techniques. Also, sFas was detected by ELISA technique in serum of all patients. **Results:** TRAP activity was detected in 78.5%; there was a significant increase in the number of positive cases in schistosomal urothelial carcinoma (TCC) and squamous cell carcinoma (SCC) compared to control and non-schistosomal urothelial carcinoma at (pb0.01 for each). TRAP activity was positive in 100% of high grade urothelial carcinoma compared to low grade and 92% positive in invasive tumors compared to non invasive tumors. hTERT protein was detected in 75.4% of bladder cancer cases; there was a significant increase in the number of positive cases in schistosomal urothelial carcinoma and SCC compared to control and non schistosomal urothelial carcinoma (pb0.01 for each). hTERT was positive in 100% of high grade and invasive TCC. sFas was detected in 64.6% in bladder cancer cases; there was a significant increase in the number of positive cases in SCC compared to control and non-schistosomal urothelial carcinoma. **Conclusion:** There is an increase in telomerase activity and over-expression of hTERT proteins in schistosomal associated bladder cancer (SABC) in comparison to non schistosomal associated bladder cancer (non SABC). Also, there is an increase in sFas level in SCC compared to other the groups. Both, telomerase activity by TRAP and hTERT and sFas may be of significance in the development of SABC.

They may also be useful markers to identify TRAP; Telomerase reverse transcriptase (hTERT) enzyme; sFas; Urothelial carcinoma; SCC; Schistosomiasis bladder carcinoma through telomerase inhibition..

Keywords:

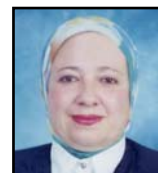
TRAP; Telomerase reverse transcriptase (hTERT) enzyme; SFas; Urothelial carcinoma; SCC; Schistosomiasis.

Faculty of Medicine**Dept.** : Medical Biochemistry and Molecular Biology**Name** : **Olfat G.Shaker****Title** : Low-dose Simultaneous Delivery Of adenovirus Encoding Hepatocyte Growth Factor and Vascular Endothelial Growth Factor in Dogs Enhances Liver Proliferation without Systemic Growth Factor Elevation**Authors** : H. M. Atta, A. Al-Hendy, S. A. Salama, O. G. Shaker and O. A. Hammam**Published In** : Liver International**ISSN** : 1478-3231**Impact Factor** : 2.908**Abstract** :

Background: Hepatocyte growth factor (HGF) and vascular endothelial growth factor (VEGF) gene transfer proved to enhance liver regeneration. However, elevation of their plasma levels may induce potentially serious distant effects such as tumorigenesis or proliferative retinopathy. **Aims:** This study was performed to examine whether simultaneous administration of low-dose adenovirus encoding HGF and VEGF genes in dogs will stimulate liver proliferation but without inducing liver toxicity or systemic elevation of HGF and VEGF levels. **Methods:** Adult dogs received an intravenous injection of low-dose adenoviral vectors encoding human HGF and VEGF (HGF/ VEGF), b-galactosidase (lacZ) or phosphate-buffered saline (PBS). Liver proliferation was measured using the proliferating cell nuclear antigen (PCNA) immunostaining labelling index. HGF and VEGF plasma concentrations and transaminases were repeatedly measured. Transgene expression was evaluated using reverse-transcription polymerase chain reaction. **Results:** Human HGF and VEGF expressions were detected only in the liver of HGF/VEGF dogs at day 2 after injection but declined at sacrifice (day 7). No expression was detected in the liver of the lacZ or PBS groups. Plasma levels of HGF and VEGF were not statistically different from those in the lacZ group ($P = 0.81$, $P = 0.22$ respectively). The PCNA labelling index was five-fold higher in the HGF/VEGF group compared with the lacZ group ($P < 0.01$). No immunostaining was detected in the PBS group. Transaminases were only elevated ($P < 0.01$) in the lacZ group compared with the other groups. **Conclusions:** We showed that simultaneous administration of low-dose adenoviral vectors encoding human HGF and VEGF genes can induce transgene expression and liver proliferation without liver toxicity or systemic growth factor elevation.

Keywords:

Adenovirus; Angiogenesis; Hepatocyte growth factor; Liver regeneration; Vascular endothelial growth factor.

Faculty of Medicine**Dept.** : Medical Biochemistry and Molecular Biology**Name** : **Olfat G. Shaker****Title** : The Anti-Angiogenic Activity of NSITC, a Specific Cathepsin L Inhibitor**Authors** : A. Rebbaa, F. Chu, T. Sudha, C. Gallati, U. Dier, E. Dyskin, M. Yalcin, C. Bianchini, O. Shaker and S. A. Mousa**Published In** : Anticancer Research**ISSN** : 1791-7530**Impact Factor** : 1.414**Abstract** :

Increased neovasculature and resistance to chemotherapy are hallmarks of aggressive cancer; therefore, the development of approaches to simultaneously inhibit these two processes is highly desirable. Previous findings from our laboratory have demonstrated that cathepsin L plays a key role in the development of drug resistance in cancer and that its inhibition reversed this phenomenon. The goal of the present study was to determine whether targeting cathepsin L would inhibit angiogenesis. For this, the effects of a specific cathepsin L inhibitor, Napsul-Ile-Trp-CHO (NSITC), were tested in vitro on endothelial cell proliferation and interaction with the extracellular matrix and also in vivo, by measuring its effect on angiogenesis in the chick chorioallantoic membrane (CAM) and mouse matrigel models. The results indicated that NSITC readily inhibits the proliferation of endothelial cells by inducing cell cycle arrest at the G0/G1 phase and suppresses cell adhesion to different substrates. Investigation of the underlying mechanism(s) indicated that NSITC was able to reduce expression of the adhesion molecule $\alpha V\beta 3$ integrin, inhibit cathepsin L mediated degradation of the extracellular matrix and disrupt secretion of the pro-angiogenic factors fibroblast growth factor (FGF) and vascular endothelial growth factor (VEGF). NSITC demonstrated potent efficacy in inhibiting growth factor- and tumor mediated-angiogenesis in the CAM and in mouse matrigel models of angiogenesis. The antiangiogenic effects of NSITC resulted in inhibition of tumor growth in the CAM and in nude mouse xenograft models. Together, these findings provide evidence that cathepsin L plays an important role in angiogenesis and suggest that NSITC represents a potential drug for the treatment of aggressive cancer.

Keywords :

N/A.

Faculty of Medicine

Dept. : Medical Biochemistry and Molecular Biology

Name : Olfat G. Shaker



Title : Effects of Statins on Insulin-Like Growth Factor-1 Gene Expression in Fructose Induced Metabolic Syndrome in Rats

Authors : Olfat G. Shaker, Doaa A. Sourour and Mohamed Taha

Published In : The Open Endocrinology

ISSN : 1874-2165

Impact Factor : 0.0

Abstract :

Background and Purpose: Insulin-like growth factor-1 (IGF-1) was found to have a role in both glucose homeostasis and cardiovascular disease. The present study was designed to compare the effects of fluvastatin and metformin on IGF-1 mRNA expression within the liver and on other individual components of the metabolic syndrome induced in rats by high fructose feeding. **Experimental Approach:** Rats fed 60% fructose in diet for 6 weeks were treated daily with fluvastatin (3.75mg/kg/day) or metformin (200mg/kg/day) during the last 2 weeks and compared with untreated fructose fed group. Fasting levels of plasma cholesterol, triglyceride, glucose, insulin, nitric oxide products, IGF-1 and IGF-1 mRNA within the liver as well as systolic blood pressure and body weight were determined. **Results:** Compared to control rats, the fructose fed group developed hypertension, hyperlipidemia, hyperinsulinemia, hyperglycemia and endothelial dysfunction as well as decreased levels of plasma IGF-1 and its mRNA within the liver. Fructose fed rats treated with fluvastatin or metformin for 2 weeks showed significant decrease in plasma cholesterol, triglyceride, insulin and glucose levels compared to untreated fructose fed group. Also, both drugs increased significantly plasma levels of nitric oxide products and IGF-1 together with significant increase in IGF-1 mRNA within the liver. However, only metformin treated rats showed significant decrease in systolic blood pressure compared to fructose fed group. **Conclusions:** This study showed that in a rat model of insulin resistance, fluvastatin improves the metabolic profile and increases plasma level of IGF-1 and its gene expression as effective as metformin.

Keywords :

IGF-1; Metabolic syndrome; Statins; Metformin; Fructose fed rats.

Faculty of Medicine

Dept. : Medical Biochemistry and Molecular Biology

Name : Olfat G. Shaker



Title : Apoptotic Markers in Childhood Nephrotic Syndrome

Authors : Y.H. Kamel, H.M. Bazaraa, A.E. Elwan, N.A. Fahmy and O. Shaker

Published In : Biological Sciences

ISSN : 1727-3048

Impact Factor : 0.0

Abstract :

In order to investigate the status and role of serum MMP-9 and urinary annexin V in steroid resistant nephrotic syndrome, 60 children aged between 2 and 15 years were enrolled in this study. Serum MMP-9 and urinary annexin V excretion were measured. N patients were examined for apoptotic bodies by DNA in situ. Serum MMP-9 was significantly higher in patients than controls (189.1 ± 150.6 and 87 ± 53.7 pg mL⁻¹, respectively, $p < 0.0001$). Urinary annexin V was also significantly higher (4.5 ± 0.3 compared to 2.7 ± 0.6 ng g⁻¹ creatinine, $p < 0.0001$). Apoptosis by DNA in situ was positive in 29 children (48%) and positive cases tend to have higher MMP-9 levels ($p = 0.05$). Those with focal segmental glomerulosclerosis had the highest apoptosis rates (69%) and the lowest response to CPA (29%). Responders had higher urinary annexin V ($p = 0.03$) and biopsy evidence of apoptosis ($p = 0.003$) than non-responders. Negative apoptosis by DNA in situ predicted response with a likelihood ratio of 2.47. These data confirm the role of annexin V and MMP-9 in apoptosis in nephrotic syndrome. The role of MMP-9 in disease progression and that of TIMPs as adjunctive therapy need further elucidation.

Keywords :

Apoptosis; Annexin V; Focal segmental glomerulosclerosis; Matrix Metalloproteinases; Steroid resistance nephritic syndrome.

Faculty of Medicine

Dept. : Neurology

Name : Sherif Hamdy



Title : Botulinum Toxin: Could it Be Effective Treatment for Chronic Tension Type Headache?

Authors : Hamdy S. M., Samir H., El-Sayed M., Adel N. and Hasan R.

Published In : Headache and Pain

ISSN : 1129-2377

Impact Factor : 1.875

Abstract :

Several clinical trials suggest that botulinum toxin type-A (BTX-A) may be an effective treatment option for patients with chronic tension-type headache (CTTH); however, controversy remains as to how the botulinum toxin optimally should be used for treating headache and which patient's profile fits this treatment. The objective of this study was to evaluate the efficacy and tolerability of BTX-A for the prophylactic treatment of CCTH in Egyptian patients. This was a randomized, single-blind, placebo-controlled study of BTX-A for the treatment of patients aged 25–50 years old with CCTH. Following a 30-day screening, headache parameters and severity assessed by the standard visual analogue scale (VAS) and the 25-item Henry Ford Hospital Headache Disability Inventory (HDI) were recorded as a baseline. Then, injection was done with either BTX-A or with saline by a combination of two methods for detecting injection sites (the fixed-site approach and follow-the-pain approach). Our study showed significant improvement after 1 month of BTX-A injection regarding headache days/month, severity measured by VAS and HDI in headache severity. There was significant reduction of prophylactic medications and there were minor complications, but these reversed spontaneously without further treatment. BTX-A was an effective and well-tolerated prophylactic treatment in Egyptian patients with CCTH.

Keywords:

Botulinum toxin; Chronic tension-type headache; Prophylactic treatment.

Faculty of Medicine**Dept.** : Neurology**Name** : **Sherif M. Hamdy****Title** : Genetic of Stroke Syndrome**Authors** : Sherif M. Hamdy**Published In** : Neurological Sciences**ISSN** : 0022-510X**Impact Factor** : 0.0**Abstract** :

Background: Stroke represents a complex trait which usually assumed to be multi-factorial and polygenic. To design appropriate genetic studies we need to understand epidemiology of stroke. Race-ethnicity address Egypt as distinct North African culture rooted in the Nile Valley and on Sahara. Egyptians are considered Nilotic race (Nile River) and Semitic Speakers with varying physical features, light to dark skin, various hair characters and craniofacial characters. **Material and Methods:** It is difficult for the clinician to establish the level of applicability of genetic study, this review is aiming to discuss the epidemiological studies of strokes and case/control genetic studies including genotype Apo E in normal Egyptians, genetic polymorphism of acute strokes genes ACE, B-Fibrinogen, CRP and PAI-1 in Egypt. **Results:** The results showed that the incidence of stroke in upper Egypt was 1.8/1000 in year 1992 and 2.1/1000 year 2006, the prevalence in upper Egypt was 5.08/1000 in year 2006. Male to female ratio 1.42:1 in year 2006. Family history in other study was 46% compared to controls 6.7% ($P < .0001$) in year 2004. The most common genotype Apo E in Egyptian was E3/E3 (49.1%). ACE polymorphism was significant in acute stroke. B-fibrinogen showed no significant association with acute stroke but significant associated with family history and hypertension. There was no association of CRP polymorphism but high sensitivity CRP was significant as a predictor of stroke outcome and large size stroke. PAI-1 was significant in acute ischemic and hemorrhagic strokes. **Conclusion:** Family history is regarded as important risk factor for the development of acute stroke. The genetic studies in Egypt have included both ischemic and hemorrhagic strokes. Studies needs to consider epidemiological needs when planning to genetic studies, to include large numbers of patients, to assess stroke subtypes and lastly to take in consideration account for intermediate phenotype like hypertension and diabetes.

Keywords:

Stroke; Genetic polymorphism; B-Fibrinogen gene; PAI-1; ACE gene; CRP gene; APOE gene.

Faculty of Medicine

Dept. : Neurosurgery

Name : Omar Mamdouh El Falaky



Title : Relationship of Aggressive Monitoring and Treatment to Improved Outcomes in Severe Traumatic Brain Injury

Authors : Sherman C. Stein, Patrick GeorGoff, Sudha Meghan, Kasim L. Mirza, and Omar M. El FaLaky

Published In : Neurosurgery

ISSN : 00 - 00

Impact Factor : 0.0

Abstract :

Object. Despite being common practice for decades and being recommended by national guidelines, aggressive monitoring and treatment of patients with severe traumatic brain injury (TBI) have not been supported by convincing evidence.

Methods: The authors reviewed trials and case series reported after 1970 in which patients were treated for severe closed TBI and mortality rates and favorable outcomes at 6 months after injury were analyzed. The patient groups were divided into those with and without intracranial pressure (ICP) monitoring and intensive therapy and the authors performed a meta-analysis to assess the effects of treatment intensity on outcome.

Results: Although the mortality rate fell during the years reviewed, it was consistently ~ 12% lower among patients in the intense treatment group ($p < 0.001$). Favorable outcomes did not change significantly over time and were 6% higher among the aggressively treated patients ($p = 0.0105$).

Conclusions: Aggressive ICP monitoring and treatment of patients with severe TBI is associated with a statistically significant improvement in outcome. This improvement occurs independently of temporal effects.

Keywords :

Traumatic brain injury; Head injury; Meta-analysis; Intracranial pressure monitoring.

Faculty of Medicine

Dept. : Neurosurgery

Name : **Nasser El-Ghandour**



Title : Endoscopic Treatment of Third Ventricular Colloid Cysts: A Review Including Ten Personal Cases

Authors : Nasser El-Ghandour

Published In : Neurosurgical Review

ISSN : 0344-5607

Impact Factor : 0.0

Abstract :

The surgical treatment of colloid cysts has been traditionally difficult with high rate of postoperative complications. The variety of surgical options reflects the technical difficulty in removing these benign lesions with low morbidity. Microsurgical removal has for years been considered the “gold standard” of treatment, with the use of either a transcortical–transventricular or a transcallosal approach. Neuroendoscopic management is emerging as a safe, effective alternative to microsurgery. The present review discusses the role of endoscopy in the surgical treatment of third ventricular colloid cysts focusing on some factors, which might influence the outcome. The results have been presented from the literature and supplemented by the results of treating ten personal cases of third ventricular colloid cysts who were operated endoscopically in the Neurosurgical Department, Cairo University. This study aims at evaluating the endoscopic approach as a surgical line of treatment in the management of third ventricular colloid cysts and to see if it has already become superior over microsurgery.

Keywords :

Colloid cyst; Endoscopy; Third ventricle.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Saeed M. A. Thabet****Title** : Reality of the G-spot and its Relation to Female Circumcision and Vaginal Surgery**Authors** : Saeed M. A. Thabet**Published In** : Gynecol Obstet Invest**ISSN** : 1341-8076**Impact Factor** : 0.915**Abstract :**

Aim: To clarify the reality of the G-spot anatomically, functionally and histologically and to determine the possible effect of female circumcision and anterior vaginal wall surgery on the integrity and function of the G-spot. **Methods:** A controlled descriptive and comparative cohort prospective study was conducted at Kasr El Aini School of Medicine, Cairo University, Cairo, Egypt, of 50 uncircumcised and 125 circumcised women with small to moderate anterior vaginal wall descent. Preoperative sexual examination was performed to map the site of the G-spot and other anatomical landmarks on the anterior vaginal wall and to verify the associated circumcision state. Pre- and postoperative sexual assessment and histological examination of different mapped sites in the anterior vagina were also conducted. **Results:** Histological findings, results of the anatomical and sexual mapping of the anterior vaginal wall and sexual scores were recorded. The G-spot was proved functionally in 144 (82.3%) of women and anatomically in 95 (65.9%). The latter appeared as two small flaccid balloon-like masses on either side of the lower third of the urethra and were named 'the sexual bodies of the G-spot'. These bodies were significantly detected in all histo-positive cases in the circumcised women and in the uncircumcised women who had small or average clitorises. The G-spot was also proved histologically in 47.4% of all cases and was formed of epithelial, glandular and erectile tissue. Sex scores were significantly higher in the histo-positive cases with sexual bodies but significantly dropped after anterior vaginal wall surgery. In contrast, female circumcision rarely alters the scores. **Conclusion:** The G-spot is functional reality in 82.3% of women, an anatomical reality in 54.3% and a histological reality in 47.4%. Anterior vaginal wall surgery usually affects the G-spot and female sexuality, but female circumcision rarely affects them.

Keywords :

Clitoral size; Female circumcision; Female sexuality; G-spot.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Saeed M. A. Thabet****Title** : Reduction Clitorio-Labioplasty versus Clitorio-Labiectomy in Managing Adult Onset Clitorio-Labiomegaly**Authors** : Athmar H. Ali and Saeed M. A. Thabetb**Published In** : Gynecol Obstet Invest**ISSN** : 0378-7346**Impact Factor** : 1.417**Abstract** :

Objectives: To compare a new procedure of reduction clitorio-labioplasty to clitorio-labiectomy in the management of adult onset clitorio-labiomegaly and to show the disadvantages of the latter procedure that produces female genital mutilation and sexual dysfunction. **Methods:** This controlled, descriptive, comparative and prospective cohort study was performed at Kasr El-Aini School of Medicine, Cairo University, Egypt. 47 cases of clitorio-labiomegaly, 12 with known causes of intersex, were diagnosed and treated by reduction clitorio-labioplasty. In addition, a control group of 53 more cases, 6 with known causes of intersex, were followed after treatment by clitorio-labiectomy. Clitorio-labioplasty was performed by excision of the anterior part of the fused corpora after separation at the glans-corporal junction and a reduction in the size of the remaining part of the corpora to reform a normal clitoral size. The neurovascular bundles were essentially preserved during this procedure. The protruded parts of the labia minora are then excised to preserve their normal dimensions. The main outcome measures were the postoperative anatomical result, patient's satisfaction, the pre- and postoperative sex scoring and sexuality. **Results:** Restoration of normal anatomy was successfully obtained after clitorio-labioplasty compared to partial or complete loss of these sensitive parts after clitorio-labiectomy. In addition, significant operative and postoperative complications were recorded in 27 cases with clitorio-labiectomy compared to none of the clitorio-labioplasty cases. The sex scores and sexuality improved significantly after the clitorio-labioplasty operation compared to clitorio-labiectomy ($p < 0.005$). Normalization of the sex scores and sexuality was found to be significantly related to preservation of critical clitoral length necessary for producing clitoral orientation and interest in sexuality. **Conclusion:** The new clitorio-labioplasty technique is able to preserve proper clitoral and labial anatomy and restore normal sexuality. Therefore it must be considered an essential line of treatment for clitorio-labiomegaly.

Keywords:

Clitro labiomegaly; Clitro labioplasty; Clitro labiectomy; Sexuality female; Genital mutilation female.

Faculty of Medicine

Dept. : Medical Biochemistry

Name : **Hanan Hassan F. Ahmed**



Title : Effects of Losartan, HO-1 Inducers or HO-1 inhibitors on Erectile Signaling in Diabetic rats .

Authors : M. T. Abdel Aziz, M. F. El Asmer, T. Mostafa, H. Atta, S. Mahfouz, H. Fouad, L. Rashed, D. Sabry, A. Hassouna, A. T. Abdel Aziz, A. Senbel and A. Demery

Published In : Sexual Medicine

ISSN : 1743 - 6109

Impact Factor : 5.39

Abstract :

Introduction: Activation of the renin-angiotensin system which is common in diabetes mellitus might affect heme oxygenase (HO-1) gene expression.

Aim: Assessment of the effects of administration of angiotensin II (Ang II) receptor antagonist (losartan) with HO-1 inducer or inhibitor on erectile signaling in diabetic rats.

Materials and Methods: Seventy male rats were divided equally into seven groups; healthy controls, streptozotocin-induced diabetic rats, rats on citrate buffer, diabetic rats on losartan, diabetic rats on HO-1 inducer (cobalt protoporphyrin [CoPP]), diabetic rats on losartan and CoPP and diabetic rats on losartan and HO-1 inhibitor (stannous mesoporphyrin [SnMP]).

Main: Outcome Measure. HO enzyme activity, HO-1 gene expression, cyclic guanosine monophosphate (cGMP) assay, intracavernosal pressure (ICP) and cavernous tissue sinusoids surface area.

Results: HO-1 gene expression, HO enzymatic activity and cGMP were significantly decreased in the cavernous tissue of diabetic rats. These parameters were significantly elevated with the use of CoPP that restored the normal control levels of HO enzyme activity. Administration of losartan exhibited a significant enhancing effect on these parameters compared with the diabetic group, but not restored to the control levels, whereas administration of CoPP combined with losartan led to the restoration of their normal levels. ICP demonstrated significant decline in diabetic rats. The use of CoPP and/or losartan led to its significant improvement compared with diabetic rats. Administration of either losartan and/or CoPP led to a significant increase in the cavernous sinusoids surface area of diabetic rats. Administration of losartan with SnMP significantly decreased the enhancing effect of losartan on the studied parameters.

Conclusion: The decline in erectile function in diabetes mellitus could be attributed to the downregulation of HO-1 gene expression. HO-1 induction added to Ang II receptor antagonist could improve erectile function.

Keywords:

Losartan; HO-1 inducers; HO-1 inhibitors; Erectile signaling.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Manal Kamal****Title** : Evaluation of Trace Elements and Malondialdehyde Levels in Type II Diabetes Mellitus**Authors** : Manal Kamal, Mona Salem, Naglaa Kholousi and Khadega Ashmawy**Published In** : Diabetes and Metabolic Syndrome**ISSN** : 1871-4021**Impact Factor** : 0.0**Abstract** :

Background: There are so many factors contributing to the pathophysiology of type II DM, some of these factors are trace elements and Malondialdehyde (MDA). Their increase or decrease may affect control of diabetes and delay the complications.

Aim: Zinc (Zn), copper (Cu), magnesium (Mg), chromium (Cr), selenium (Se) and MDA were studied in this work to clarify their role in the pathogenesis and complications of type IIDMaiming at preventing or delaying its complications.

Materials and methods: The present study was conducted on 50 patients with type II DM divided into 2 groups: group I (controlled diabetic patients), n = 20 and group II which comprised 30 uncontrolled diabetic patients complicated with diabetic nephropathy, neuropathy and retinopathy. Their results were compared to 15 age and sex matched healthy group. Patients and controls were subjected to full history taking, complete clinical examination and laboratory investigations which included measuring fasting serum glucose, cholesterol, triglycerides, HDL-c and LDL-c. HbA1c was measured by column chromatography. MDA was assayed using colorimetric technique. The trace elements were measured in blood by means of atomic absorption spectrometer.

Results: The mean levels of Zn, Mg, Se were significantly lower in the diabetic groups than the control group ($P < 0.001$), while MDA was significantly higher in the diabetic groups ($P < 0.001$). MDA showed significant positive correlation with HbA1c ($r = 0.301$), cholesterol ($r = 0.394$), triglycerides (0.315) and LDL-c ($r = 0.354$) and negative correlation with HDL-c ($r = -0.315$). Significant negative correlation was found between each of Zn, Mg and Se and each of HbA1c and cholesterol. Copper positively correlated with HbA1c, cholesterol and LDL-c. MDA positively correlated with copper ($r = 0.307$) and negatively correlated with Zn, Mg and Se ($r = -0.356, -0.282, -0.513$, respectively).

Conclusion: Trace elements and MDA could have a role as cofactors in the pathogenesis of type II DM. They could be used as markers to evaluate the glycemic control as well as showing the lipid status of diabetic patients. Trace elements supplementations as zinc, magnesium and selenium might have utility in the treatment of the complex disorder in type II DM and may help in control of blood glucose and lipid levels, thus preventing or delaying serious clinical events in these patients.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Hesham G. Al-Inany****Title** : Gonadotrophins for Idiopathic Male Factor Subfertility**Authors** : Attia A. M. and Al-Inany H. G.**Published In** : Cochrane Library**ISSN** : 1464-780X**Impact Factor** : 5.10**Abstract** :

Background Male factor infertility accounts for 50% of infertility. The treatment of idiopathic male infertility is empirical. Urinary, purified and recombinant gonadotrophins have been used to improve sperm parameters in idiopathic male infertility with the goal of increasing pregnancy rates. Research addressing pregnancy rates in partners of men treated with gonadotrophins has had conflicting results and needs to be analysed.

Objectives To determine the effectiveness of gonadotrophin administration to men with idiopathic subfertility on spontaneous pregnancy rate and in assisted reproductive techniques (ARTs). Search strategy We searched the Cochrane Menstrual Disorders and Subfertility Group trials register (31May 2007), the Cochrane Central Register of Controlled Trials (The Cochrane Library, issue 2, 2007), MEDLINE (1966 toMay 2007), EMBASE and Biological Abstracts (1980 to Week 21 2007). Searches were not limited by language. The bibliographies of included, excluded trials and abstracts of major meetings were searched for additional trials. Authors and pharmaceutical companies were contacted for missing and unpublished data. Selection criteria Truly randomised controlled trials where gonadotrophins were administered for the treatment of idiopathic male subfertility with reporting of pregnancy rates were included in the review.

Data collection and analysis Two reviewers independently assessed trial quality and extracted data. Study authors were contacted for additional information. Adverse effects information was collected from the trials. We analysed data regarding pregnancy occurring within 3months after gonadotrophin therapy.

Main results Four RCTs with 278 participant were included in the analysis. None of the studies had an adequate sample size and they had variable follow-up periods. None of the studies reported live birth or miscarriage rates.

Compared to placebo or no treatment, gonadotrophins showed a significantly higher pregnancy rate per couple randomized within 3 months of completing therapy (OR 3.03, 95% CI 1.30 to 7.09). Pregnancy rate was 13.4% (19/142) in the gonadotrophin group and 4.4% (6/136) in the control group.

Authors' conclusions The number of trials and participants is insufficient to draw final conclusions. A largemulticenter study with adequate power is needed.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Hesham G. Al-Inany****Title** : Recombinant Versus Urinary Human Chorionic Gonadotrophin for Ovulation Induction in Assisted Conception**Authors** : Attia A. M. and Al-Inany H. G.**Published In** : Cochrane Library**ISSN** : 1464-780X**Impact Factor** : 5.10**Abstract** :

Background For the last few decades urinary human chorionic gonadotrophin has been used to induce final follicular maturation and for triggering ovulation in assisted conception. Recombinant technology has allowed the production of two drugs that can be used for the same purpose: to mimic the endogenous luteinizing hormone (LH) surge. This would allow commercial production to be adjusted according to market requirements. In addition all urinary contaminants would also be removed. Hence, this would allow the safe subcutaneous administration of a compound with less batch-to-batch variation. However, prior to a change in practice, the effectiveness of the recombinant drugs should be known, compared to the currently used urinary human chorionic gonadotrophins .

Objectives To assess the safety and efficacy of subcutaneous rhCG and high dose rLH compared with intramuscular uhCG for inducing final oocyte maturation and triggering ovulation.

Search strategy We searched the Cochrane Menstrual Disorders and Subfertility Group trials register (27 August 2003), the Cochrane Central Register of Controlled Trials (CENTRAL on The Cochrane Library, issue 4, 2003), MEDLINE (1966 to Feb 2004) and EMBASE (1980 to Feb 2004). Searches were not limited by language. The bibliographies of included, excluded trials and abstracts of major meetings were searched for additional trials. Authors and pharmaceutical companies were contacted for missing and unpublished data .

Selection criteria Two reviewers independently scanned titles and abstracts and selected those that appeared relevant for collection of the full paper. Only truly randomised controlled trials comparing rhCG or high dose r-LH with urinary hCG for triggering ovulation in assisted conception for treatment of infertility in normogonadotrophic women were included.

Data collection and analysis insufficient to draw final conclusions. A largemulticenter study with adequate power is needed. Assessment of inclusion/exclusion, quality assessment and data extraction were performed independently by at least two reviewers. Discrepancies were discussed in the presence of a third reviewer and a consensus reached. Quality assessment included method of randomisation, allocation concealment, blinding of participants and assessors, reporting of a power calculation, intention to treat analysis and handling of dropouts. Data extraction included characteristics of participants, the intervention and control procedures and outcomes.

Main results Seven RCTs were identified, four comparing rhCG and uhCG and three comparing rhLH and uhCG. There was no statistically significant difference between rhCG vs uhCG regarding the ongoing pregnancy/ live birth rate (OR 0.98, 95% CI 0.69 to 1.39), pregnancy rate, miscarriage or incidence of OHSS. There was no statistically significant difference between rhLH vs uhCG regarding the ongoing pregnancy/ live birth rate (OR 0.94, 95% CI 0.50 to 1.76), pregnancy rate, miscarriage or incidence of OHSS. The manufacturer of rhLH has decided not to further develop this product. rhCG was associated with a reduction in the incidence of local site reactions and other minor adverse effects (OR 0.47, 95% CI 0.32 to 0.70) .

Authors' conclusions There is no evidence of difference in clinical outcomes between urinary and recombinant gonadotrophins for induction of final follicularmaturation. Additional factors should be considered when choosing gonadotrophin type, including safety, cost and drug availability.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Hesham G. Al-Inany****Title** : Post-Embryo Transfer Interventions for in Vitro Fertilization and Intracytoplasmic Sperm Injection Patients**Authors** : Abou-Setta A. M, D'Angelo A., Sallam H. N., Hart R. J. and Al-Inany H. G.**Published In** : Cochrane Library**ISSN** : 1464-780X**Impact Factor** : 5.10**Abstract** :

Background Techniques for embryo transfer (ET) are being developed, optimized and standardized to provide the best outcomes. This includes methods to reduce the risk of embryo loss following ET.

Objectives To systematically locate, analyse and review the best available evidence regarding the effectiveness of post-ET techniques for women undergoing in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI).

Search strategy We searched electronic databases; reference lists of primary studies, review articles and relevant publications; and conference abstracts. No language restrictions were applied.

Selection criteria Screening and selection of 2436 possible trial citations were performed independently by two review authors. Four prospective, truly randomised trials met the inclusion criteria. The trials compared two competing post ET interventions or an intervention versus no treatment in women undergoing IVF and ICSI.

Data collection and analysis Two review authors independently collected data and assessed risk of bias using a standardized data extraction form. Individual outcome data were extracted to support an intention-to-treat analysis.

Main results The primary outcome, live birth rate, was not reported in any of the included trials. The ongoing pregnancy rate was only available for one trial that compared immediate ambulation with 30 minute bed rest, with no evidence of an effect with bed rest (OR 1.00; 95% CI 0.54 to 1.85). Secondary outcomes were sporadically reported with the exception of clinical pregnancy rate, which was reported in all of the included trials. There was no significant difference between less bed rest and more rest (OR 1.13; 95% CI 0.77 to 1.67). Nor was there any significant difference between the use of a fibrin sealant and control (OR 0.98; 95% CI 0.54 to 1.78). Even so, there was a significantly higher probability of pregnancy following mechanical closure of the cervix compared with no

intervention (OR 1.92; 95% CI 1.40 to 2.63). The risk of bias of the included studies was variable. The reporting of a proper method of randomisation and allocation concealment was demonstrated in the majority of trials, while only one trial was reported to be blinded.

Authors' conclusions There is insufficient evidence to support a certain amount of time for women to remain recumbent following ET, or to support the use of fibrin sealants. Finally, there is limited evidence to support the use of mechanical closure of the cervical canal following ET. Further well-designed and powered studies are required to determine the true effect, if any, of these and other post ET techniques for women undergoing IVF and ICSI.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Hesham G. Al-Inany****Title** : Levonorgestrel-releasing Intrauterine Device (LNG-IUD) for Symptomatic Endometriosis Following Surgery**Authors** : Abou-Setta A. M., D'Angelo A., Sallam H. N., Hart R. J. and Al-Inany H. G.**Published In** : Cochrane Library**ISSN** : 1464-780X**Impact Factor** : 5.10**Abstract** :

Background Various options exist for treating endometriosis, including ovarian suppression therapy, surgical treatment or a combination of these strategies. Surgical treatment of endometriosis sets out to remove visible areas of endometriosis and restore anatomy by division of adhesions. The aim of medical therapy is to inhibit growth of endometriotic implants by suppression of ovarian steroids and induction of a hypo-estrogenic state. Postoperative treatment with a hormone-releasing intrauterine system, using levonorgestrel (LNG-IUS), has been suggested.

Objectives To determine if postoperative use of an LNG-IUS in women with endometriosis improves pain symptoms associated with menstruation and reduces recurrence compared with treatment with surgery only, placebo or systemic hormones. Search strategy The following databases were searched: (1) Cochrane Menstrual Disorders and Subfertility Group Specialised Register of controlled trials; (2) Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2006, Issue 1); (3) MEDLINE (1966 to January 2006) and EMBASE (1980 to January 2006); (4) National Research Register (NRR). (5) The citation lists of relevant publications, review articles, abstracts of scientific meetings and included studies were also searched.

Selection criteria Trials were included if they compared women undergoing any type of surgical treatment for endometriosis with uterine preservation then randomised to LNG-IUS insertion within two to three months versus no treatment, placebo (inert IUD) or systemic treatment. Diagnostic laparoscopy alone was excluded. Data collection and analysis Two review authors (AM Abou-Setta and HG Al-Inany) independently selected studies for inclusion and extracted data. Statistical analysis was performed in accordance with the statistical guidelines developed by the Cochrane Menstrual Disorders and Subfertility Group. Data extracted from the trials was analyzed on an intention-to-treat basis.

For binary data, the overall common odds ratio (OR) (that is, the odds of having clinical symptoms) and the risk difference with 95% confidence interval (CI) were calculated using the Mantel-Haenszel fixed-effect method.

Main results In one small randomised controlled trial (RCT) there was a statistically significant reduction in the recurrence of painful periods in the LNG-IUS group compared with the control group receiving a gonadotrophin-releasing hormone (GnRH) agonist (OR 0.14, 95% CI = 0.02 to 0.75). The proportion of women who were satisfied with their treatment was higher in the LNG-IUS group than in the control group but this difference did not reach statistical difference (OR 3.00, 0.79 to 11.44) .

Authors' conclusions One small study has shown that postoperative use of the LNG-IUS reduces the recurrence of painful periods in women who have had surgery for endometriosis. There is a need for further well-designed RCTs of this approach

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : Hesham G. Al-Inany



Title : Randomized Controlled Study Comparing A Modified Antagonist Protocol to the Conventional Long Agonist Protocol for Infertile Patients With PCOS Undergoing ICSI

Authors : M. Eid, A. Shohayeb, A. Shaltout, S. Abbas and H. Al-Inany

Published In : Middle East Fertility Society

ISSN : 1110-5690

Impact Factor : 0.0

Abstract :

Objective: to compare the value of a modified Gn-RH antagonist protocol against the conventional long Gn-RH agonist protocol for women with polycystic ovarian syndrome (PCOS) undergoing ICSI.

Design: randomized controlled trial

Setting: tertiary care center

Materials and Methods: Women undergoing ICSI were randomized to two groups : Group A (n= 79) received GnRH antagonist 0.25 mg on day 1,2 then day 8 till day of hCG. Group B (n= 79) received GnRH agonist long protocol 0.5 mg daily as standard. In all women, recombinant FSH was used as low fixed dose (150 i.u.) till day of hCG.

Results: There was no statistically significant difference between both groups regarding clinical pregnancy rate, ongoing pregnancy rate, serum LH day 3, cancellation rate and number of embryo transferred. However, there was significant reduction in rate of severe OHSS, reduction of number of ampoules and lower number of oocytes retrieved in Group A.

Conclusion: the modified antagonist protocol is a safer option to PCOS women undergoing ICSI with comparable pregnancy rate to the standard GnRH agonist long protocol.

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : Hesham Al-Inany



Title : The Accuracy of Clinical Presentation in Cases of Adenomyosis

Authors : Eman A. El Kattan, Khaled Abdel Malek and Hesham Al Inany,

Published In : Middle East Fertility Society

ISSN : 1110-5690

Impact Factor : 0.0

Abstract :

Objective: to investigate the prevalence of adenomyosis in histopathological examinations of patients who had undergone hysterectomy due to various indications and to detect the accuracy of the clinical presentation in diagnosing adenomyosis.

Study design: a prospective study.

Setting: Cairo University hospital

Materials and Methods: 352 women who were scheduled for hysterectomy for various indications underwent preoperative clinical evaluation. All the results were then correlated with histopathological results after hysterectomy.

Results: Adenomyosis was detected in 37/352 (10.5 %) patients at the histopathological examination .48 participants were ultrasonographically diagnosed as having adenomyosis from which 37 patients were histologically confirmed.Both groups were comparable in age, but adenomyosis tend to occur in multiparas. Adenomyosis was also significantly more associated with menometrorrhagia (p = 0.03), menorrhagia (p < 0.001), dysmenorrhea (p = 0.018) and tender pelvic examination (p= 0.004) but not with dyspareunia (p = 0.75) or postmenopausal bleeding (P=0.41.)

Conclusion: adenomyosis tends to occur in multipara. Menometrorrhagia ,menorrhagia , dysmenorrhea and tender pelvic examination are clinically correlated with adenomyosis.

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : **Hesham G. Al-Inany**



Title : Reproductive Medical Conferences: is it Time for More
Virtuality and Less Reality?

Authors : Ahmed Abousetta and Hesham Al-Inany

Published In : Middle East Fertility Society

ISSN : 1110-5690

Impact Factor : 0.0

Abstract :

Today, with the passing of a new millennium and in the context of a new era, technological advances of the modern Information Age have forever altered every aspect of our lives. Profound changes have occurred in society and are slowly entering the field of medicine. Every aspect of healthcare, except for the way that medical education, knowledge and ideas are passed down from one generation to the next, have opted-in to this new world order. The education of healthcare professionals, both in the past and present, has been largely modeled on the 100-year-old apprenticeship motto "see once, do once and teach once" (1). Continuing medical education has shown even slower advances over time, being minimal to none for most physicians worldwide. Even though, physicians all over the world are expected to keep up-to-date concerning new medical technologies, techniques and discoveries. In addition, since the half-life of medical information is less than 5 years and the average physician practices for at least 30 years, a form of continuing medical education must be incorporated in order to fill this gap.

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : Hesham Al-Inany



Title : The Role of the Follicle Stimulating Hormone Receptors
Genotype in the Response to FSH in Women Undergoing
Controlled Ovarian Stimulation

Authors : Y. Waffa, A. Roshdy, E. El Gindy, M. El hamshary, K. Kasim and H.
Al-Inany

Published In : Middle East Fertility Society

ISSN : 1110-5690

Impact Factor : 0.0

Abstract :

Objective: to investigate the role of follicle stimulating hormone receptor (FSHR) genotype, in response to FSH in women undergoing controlled ovarian stimulation.

Design: prospective clinical trial

Setting: tertiary fertility care center

Materials and Methods: The frequency distributions of FSHR allelic variants were 20 patients (37%) for the allelic variant (aa), 20 patients (37%) for allelic variant (ss) and 14 patients (26%) for the allelic variant (as) patients.

Results: The mean number of HMG ampoules given to the studied patients was 24.6 ± 5.1 in allelic (aa) patients, 41.3 ± 4.8 in allelic (ss) patients and 37.5 ± 6.3 in allelic (as) patients and showed statistically significant difference ($p < .0001$). In patients belonging to allelic variant (aa), the larger the HMG dose, the less the oocytes number will the patient develop, the more the E2HCG will the patient produce and the more the MII oocytes that will develop. In patients belonging to allelic variant (ss), the larger the dose of HMG, the more the oocytes number will the patient develop, the more the E2HCG will the patient produce and the more the MII oocytes that will develop. In patients belonging to allelic variant (as), the results are roughly similar to that observed in allelic (aa) group.

Conclusion: it seems that a different ovarian response to FSH stimulation do occur, depending on the FSHR genotype.

Faculty of Medicine**Dept. :** Obstetrics and Gynecology**Name :** Hesham Al-Inany**Title :** IVF Outcomes with Either Highly Purified FSH vs. Recombinant FSH in Down-Regulated Normogonadotrophic Women: A Prospective Comparative Study in a Developing Country and Meta-Analysis**Authors :** M. K. Moustafa, A. R. Abdelwahed, I. Abosekena, S. Abdelazim, A. M. Abou-Setta and H. G. Al-Inany**Published In :** The Open Women's Health**ISSN :** 1874-2912**Impact Factor :** 0.0**Abstract :**

Objective: In order to compare the use of highly purified (HP) follicle stimulating hormone (FSH) with recombinant FSH (recFSH) in a developing country, research should not only focus on clinical data, but also on the evidence available in the literature from previous trials.

Study Design: We performed a prospective clinical trial with 118 infertile females undergoing IVF: HP-FSH (n = 59); recFSH (n = 59). In addition, we performed a meta-analysis of RCTs comparing currently available HP-FSH vs. recFSH. The primary outcomes for both studies were live-birth rate and rate of ovarian hyperstimulation.

Results: In the clinical trial, the response to ovarian hyperstimulation was similar in both groups including the number of oocytes retrieved and the number of ampoules of gonadotrophins. The live birth rate per woman was 30.51% vs. 35.59% in the HP-FSH and recFSH treated groups respectively (P = 0.70). The rate of OHSS was 5.09% in the HP-FSH compared to 6.78% in the recFSH treated groups (P = 1.00). Regarding the meta-analysis, the live-birth (O.R= 1.30, 95% CI= 0.92 to 1.84) and OHSS rates (O.R= 1.14, 95% CI= 0.32 to 4.04) were not significantly different between the two groups. There was significantly less treatment days and total dose (IU) in the HP-FSH group compared with the rFSH group.

Conclusion: HP-FSH yields similar clinical outcome to recFSH in terms of oocytes retrieved and live-birth rate.

Faculty of Medicine**Dept. :** Obstetrics and Gynecology**Name :** Hesham G. Al-Inany**Title :** Luteal phase Clomiphene Citrate for Ovulation Induction in Women With Polycystic Ovary Syndrome: A Novel Protocol**Authors :** A. Badawy, H. Inany, A. Mosbah and M. Abulatta**Published In :** Fertility and Sterility**ISSN :** 0015-0282**Impact Factor :** 4.1**Abstract :**

Objective: To test a novel protocol of luteal phase administration of clomiphene citrate (CC) for ovulation induction in women with polycystic ovary syndrome (PCOS)

Design: Prospective, randomized, controlled trial.

Setting: University teaching hospital and private practice settings.

Patient(s): The study comprised a total of 212 women (438 cycles) with PCOS.

Intervention(s): Patients in the early CC group received 100 mg of CC daily starting the next day after finishing medroxyprogesterone acetate (MPA) for 5 days (110 patients, 227 cycles), whereas the patients in the late CC group received 100 mg of CC daily for 5 days starting on day 3 of the menses (102 patients, 211 cycles). Main Outcome Measure(s): Number of growing and mature follicles, serum E2 (in picograms per milliliter), serum P (in nanograms per milliliter), endometrial thickness (in millimeters), occurrence of pregnancy and miscarriage.

Result(s): There were more ovulating patients in the early CC group (59.1% vs. 51.9%), without significant differences. The total number of follicles and the number of follicles R14 mm and R18 mm during stimulation were significantly greater in the early CC group. The endometrial thickness at the time of hCG administration was significantly greater in the early CC group (9.1 ± 0.23 vs. 8.2 ± 0.60 mm). Serum E2 and P were not significantly different between the two groups. Pregnancy occurred in 23/110 cycles in the early CC group (20.9%) and 16/102 cycles (15.7%) in the late CC group; the difference was not statistically significant. The miscarriage rate was similar in the two groups .

Conclusion(s): Early administration of CC in patients with PCOS will lead to more follicular growth and endometrial thickness, which might result in a higher pregnancy rate (PR).

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : **Hesham G. Al-Inany**



Title : Evaluation of the use Vs Nonuse of Urinary Catheterization During Cesarean Delivery: A Prospective, Multicenter, Randomized

Authors : A. M. Nasr, A. F. ElBigawy, A. E. Abdelamid, S. Al-Khulaidi, H. G. Al-Inany and E. H. Sayed

Published In : Perinatology

ISSN : 0743-8346

Impact Factor : 0.0

Abstract :

Objective: To prospectively investigate the effects on urinary tract infection (UTI) of indwelling urinary catheter placement during cesarean delivery .

Study Design: Randomized controlled trial.

Result: There were no significant differences between the two groups regarding patient demographics. There was, however, a statistically significant increase in women using general anesthesia in the catheterized group (CG). Even so, the incidence of UTI was significantly greater in the CG ($P < 0.001$). In addition, mean time to patient ambulation, first postoperative voiding, oral rehydration, intestinal

movement and duration of hospital stay were significantly less in the uncatheterized group (UG; $P < 0.001$), with most patients (95.3%) selfvoiding

without any intervention. Moreover, no intraoperative complications were recorded in the UG.

Conclusion: Non-placement of indwelling urinary catheter during cesarean was more convenient to women with no increase in intraoperative complications, or urinary retention. Indwelling catheter placement in hemodynamically stable patients proved not to be beneficial in this study.

Faculty of Medicine**Dept.** : Obstetrics and Gynecology**Name** : **Hesham G. Al-Inany****Title** : Highly Purified Hmg Achieves Better Pregnancy Rates in IVF Cycles but not ICSI Cycles Compared With Recombinant FSH: A Meta-Analysis**Authors** : H. G. Al-Inany, A. M. Abou-Setta, M. A. Aboulghar, R. T. Mansour and G. Serour**Published In** : Gynecologic Endocrinology**ISSN** : 0951-3590**Impact Factor** : 1.35**Abstract** :

Objective: Human menopausal gonadotropin (hMG) was demonstrated to be superior to recombinant FSH (rFSH) regarding clinical outcomes. It is not clear whether this change in the evidence was due to the introduction of highly purified (HP) hMG.

Design. Systematic review of properly randomised trials comparing HP-hMG vs. rFSH in women undergoing in vitro fertilisation (IVF) and/or intracytoplasmic sperm injection (ICSI). A meticulous search was performed using electronic databases and hand searches of the literature.

Results: Six trials (2371 participants) were included. Pooling of the trials demonstrated that the probability of clinical pregnancy following HP-hMG administration was higher than rFSH and reached borderline significance (odds ratio (O.R) 1.21, 95% confidence interval (CI) 1.00 to 1.45), but the ongoing pregnancy/live-birth rate was not statistically

different between the two drugs, although it showed strong trends towards improvement with HP-hMG (O.R 1.19, 95% CI 0.98 to 1.44). Subgroup analysis comparing both drugs in IVF cycles demonstrated a statistically significant better ongoing pregnancy/livebirth rate in favour of HP-hMG (O.R 1.31, 95% CI 1.02 to 1.68). On the other hand, there was almost an equal ongoing pregnancy/live-birth rate in ICSI cycles (OR 0.98, 95% CI 0.7 to 1.36).

Conclusions: HP-hMG should be preferred over rFSH in women undergoing assisted reproduction, especially if IVF is the intended method of fertilisation.

Faculty of Medicine

Dept. : Obstetrics and Gynecology

Name : Walid S. M. El-Sherbiny



Title : Effect of Intra-Abdominal Instillation of Lidocaine During Minor Laparoscopic Procedures

Authors : W. El-Sherbiny, W. Saber, A. N. Askalany, A. El-Daly and A. A. A. Sleem

Published In : International Journal of Gynecology and Obstetrics

ISSN : 0020-7292

Impact Factor : 1.228

Abstract :

Objective: To assess the effect of intraperitoneal instillation of lidocaine on postoperative pain after minor gynecological laparoscopic surgery.

Method: A prospective, double-blind, placebo-controlled clinical trial of 75 patients undergoing gynecological laparoscopy randomized to receive intraperitoneal instillation of either 120 mg of lidocaine (n=60) or normal saline (n=15) at the end of surgery. Postoperative pain was evaluated by Wong-Baker Faces Pain Rating Scale (WBFS) score at 15 minutes and at 1, 2, 4, 12 and 24 hours postoperatively.

Results: The WBFS score was lower for the lidocaine group than for the control group at 1, 2 and 4 hours after surgery (P=0.023). There was no difference in WBFS scores between the 2 groups at 15 minutes (P=0.46), 12 hours (P=0.13) and 24 hours (P=0.07) after surgery.

Conclusion: Intraperitoneal instillation of lidocaine was effective in reducing postoperative pain after minor gynecological laparoscopic procedures.

Keywords :

Intraperitoneal lidocaine; Laparoscopy; Postoperative pain.

Faculty of Medicine**Dept. :** Oncology**Name :** Ahmed Y. A. Abo-Madyan**Title :** A Fast Radiotherapy Paradigm for Anal Cancer With Volumetric Modulated Arc Therapy (VMAT)**Authors :** A. El-Feel, M. A. Abdel-Hakim, H. Abouel-Fettouh and A. M. Abdel-Hakim**Published In :** Radiation Oncology**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Background/Purpose: Radiotherapy (RT) volumes for anal cancer are large and of moderate complexity when organs at risk (OAR) such as testis, small bowel and bladder are at least partially to be shielded. Volumetric intensity modulated arc therapy (VMAT) might provide OAR-shielding comparable to step-and-shoot intensity modulated radiotherapy (IMRT) for this tumor entity with better treatment efficiency. **Materials and methods:** Based on treatment planning CTs of 8 patients, we compared dose distributions, conformity index (CI), homogeneity index (HI) number of monitor units (MU) and treatment time (ITT) for plans generated for VMAT, 3D-CRT and step-and-shoot-IMRT (optimized based on Pencil Beam (PB) or Monte Carlo (MC) dose calculation) for typical anal cancer planning target volumes (PTV) including inguinal lymph nodes as usually treated during the first phase (0-36Gy) of a shrinking field regimen.

Results: With values of 1.33 ± 0.21 / 1.26 ± 0.05 / 1.3 ± 0.02 and 1.39 ± 0.09 , the CI's for IMRT (PB-Corvus/PB-Hyperion/MC-Hyperion) and VMAT are better than for 3D-CRT with 1.00 ± 0.16 . The HI's for the prescribed dose (H136) for 3D-CRT were 1.06 ± 0.01 and 1.11 ± 0.02 for VMAT **respectively** and 1.15 ± 0.02 / 1.10 ± 0.02 / 1.11 ± 0.08 for IMRT (PB-Corvus/PB-Hyperion/MC-Hyperion). Mean TTT and MU for 3D-CRT is 220s/225 \pm 1 IMU and for IMRT (PB-Corvus/PB-Hyperion/MC-Hyperion) is 575s/11260 \pm 172MU, 570s/477 \pm 84MU and 610s/748 \pm 93MU while TTT and MU for two-arc-VMAT is 290s/268 \pm 9MU. **Conclusion:** VMAT provides treatment plans with high conformity and homogeneity equivalent to step-and-shoot-IMRT for this mono-concave treatment volume. Short treatment delivery time and low primary MU are the most important advantages.

Faculty of Medicine**Dept. :** Oncology**Name :** **Ahmed Y. A. Abo-Madyan****Title :** A New Strategy for Online Adaptive Prostate Radiotherapy Based on Cone-Beam CT**Authors :** A. El-Feel, M. A. Abdel-Hakim, H. Abouel-Fettouh and A. M. Abdel-Hakim**Published In :** Zeitschrift for Medizinische Physik**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Purpose: interfractional organ motion and patient positioning errors during prostate radiotherapy can have deleterious clinical consequences. It has become clinical practice to re-position the patient with image-guided translational position correction before each treatment to compensate for 1/lose errors. However, tilt errors can only be corrected with table correction in six degrees of freedom or “full” adaptive treatment planning strategies. Organ shape deformations can only be corrected by “full” plan adaptation. This study evaluates the potential of instant treatment plan adaptation (fast isodose line adaptation with real-time dose manipulating tools) based on cone-beam CT (CBCT) to further improve treatment quality. Methods and Materials: Using in-house software. CBCTs were modified to approximate a correct density calibration. To evaluate the dosimetric accuracy, dose distributions based on CBCTs were compared with dose distributions calculated on conventional planning CTs (PCT) for four datasets (one inhomogeneous phantom, three patient datasets). To determine the potential dosimetric benefit of a “full” plan adaptation over translational position correction, dose distributions were re-optimized using graphical “online dose modification tools for three additional patients” (CT-datasets with a substantially distended rectum while the original plans have been created with an empty rectum (single treatment fraction estimates).

Results: Absolute dose deviations of up to 51% in comparison to the PCT were observed when uncorrected (CBCTs were used/or replanning. After density calibration of the CBCTs, 97% of the dose deviations were 3% (gamma index: 3%/3 mm). Translational position correction restored the PTV dose (D95) to 73% of the corresponding dose of the reference plan. After plan adaptation, larger improvements of dose restoration to 95% were observed. Additionally, the rectal dose (D30) was further decreased by 42 percentage points (mean of three patient datasets).

Conclusions: An accurate dose calculation based on CBC ‘T-datasets is possible when density distributions are corrected. The presented adaptive strategy has the potential to reduce (dose delivery errors due to organ deformations) to a minimum.

Keywords:

Image guided radiotherapy; Adaptive radiotherapy; Cone-beam CT; Prostate radiotherapy.

Faculty of Medicine**Dept. :** Oncology**Name :** Ahmed Y. A. Abo-Madyan**Title :** Potential Effect of Robust and Simple Imrt Approach for Left_Sided Breast Cancer on Cardiac Mortality.**Authors :** Ahmed Y. A. Abo-Madyan**Published In :** Int. j. Radiation Oncology Biol.Phys**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Purpose: Three- dimensional(3D)treatment planning has reduced the cardiac dose in postoperative radiotherapy for breast cancer; however, the overall cardiac toxicity is still an issue because of more aggressive adjuvant treatment. Toxicity models have suggested that a reduction of the heart volume treated to high doses might be particularly advantageous. We compared aperture-based multifield intensity-modulated radiotherapy (IMRT) plans to 3D-planned tangent fields using dose—volume histograms, cardiac toxicity risk and the robustness-to positioning errors.

Methods and Materials: For 14 computed tomography data sets of patients with left-sided breast cancer (unfavorable thoracic geometry, a 3D treatment plan and an IMRT plan were created. The dose—volume histograms Were. evaluated for the target and risk organs. Excess risk of cardiac mortality was calculated for both approaches using a relative seriality model. Positioning errors were simulated by moving the isocenter .

Results: IMRT reduced the maximal dose to the left ventricle by a mean of 30.9% (49.14 vs. 33.97Gy). The average heart volume exposed to >30Gy was reduced from 45 cm³ to 5.84 cm³- The mean dose to the left ventricle was reduced by an average of 10.7% (10.86 vs. 9.7Gy) and the mean heart dose increased by an average of 24% (from 6.85 to 8.52Gy). The model-based reduction of the probability for excess therapy-associated cardiac death risk was from 6.03% for the 3D plans to 0.25% for the IMRT plans .

Conclusion: Aperture-based IMRT for left-sided breast cancer significantly reduces the maximal dose to the left ventricle, which might translate into reduced cardiac mortality. Biological modeling might aid in deciding to treat with IMRT but has to be validated prospectively. 2009 Elsevier Inc .

Breast cancer, Breast-conserving therapy, Adjuvant ant chemotherapy, Intensity-modulated radiotherapy, IMRT .

Faculty of Medicine**Dept.** : Oncology**Name** : **Ahmed Y. A. Abo-Madyan**

Title : Serielle Tomotherapie vs. MLC-IMRT (Multileaf Collimator Intensity Modulated Radiotherapy) für die Simultane Boostbestrahlung Mehrerer Großerer Hirnfiliae

Authors : Ahmed Y. A. Abo-Madyan**Published In** : Zeitschrift for Medizinische physik**ISSN** : 00-00**Impact Factor** : 0.0**Abstract** :

Introduction; Recent data suggest that a radiosurgery boost treatment for up to three brain metastases in addition to whole brain radiotherapy (WBR T) is beneficial. Sequential treatment of multiple metastatic lesions is time-consuming and optimal normal tissue sparing is not trivial for larger metastases when separate plans are created and are only superimposed afterwards. Sequential Tomotherapy (see image I) with noncoplanar arcs and Multi-field IMRT may streamline the process and enable easy simultaneous treatment. We compared plans for 2–3 intracerebral targets calculated with Intensity Modulated Radiotherapy (IMRT) based on treatment with MLC or sequential Tomotherapy using the Peacock-System (see image II). Treatment time was not to exceed 90 min on a linac with standard dose rate. MIMiC plans without treatment-time restrictions were treated as a benchmark.

Materials and methods: Calculations are based on a Siemens KD2 linac with a dose rate of 200 Mu/min. Step-and-Shoot IMRT is performed with a standard MLC (2 x 29 leaves, 1 cm), serial Tomotherapy with the Multivane-Collimator MIMiC (NOMOS Inc. USA) (see image II). Treatment plans are created with CoriLis 5.0. To create plans with good conformity we chose a noncoplanar beam and arc geometry for each approach (IMRT 4-, MIMiC 5-couch angles). The benchmark MIMiC plans with maximally steep dose gradients had 9 couch angles. For plan comparison reasons, WGy were prescribed to 90% of the PTV. Steepness of dose gradients, homogeneity and conformity were assessed by the following parameters: Volume encompassed by certain isodoses outside the target as well as homogeneity and conformity as indicated by Homogeneity- and Conformity-Index.

Results: Plans without treatment-time restrictions had slightest dose to organ at risk (OAR), normal tissue and least Conformity-index. MIMiC-and MLC-IMRT based plans can be treated within the intended period of 90min, all plans met the

required dose (see Table 2). MLC based plans resulted in higher dose to organs at risk (OAR) (see table 1) and dose to tissue outside the targets (see table 3), as indicated by a higher C/ (-see image HI). The HI was similar for all calculated plans (see image IV).

Discussion: When-treatment plans resulting in a similar" treatment time were compared, serial Tomotherapy showed minor advantages over MLC based IMRT with regard to conformity, OAR sparing and steepness of dose gradients. Both methods are inferior-to serial Tomotherapy with ideal plan quality disregarding treatment efficiency. Treating multiple metastases in less than 1 h would therefore be possible on a LINA C with high dose rate and bidirectional rotation with minor compromises on. gradient steepness.

Keywords:

Serial Tomotherapy; IMRT; Simultaneous boost treatment; Intracerebrarmetastases.

Faculty of Medicine**Dept. :** Oncology**Name :** Mustafa S. I. EL Haddad**Title :** Potential Effect of Robust and Simple Imrt Approach for Left_Sided Breast Cancer on Cardiac Mortality.**Authors :** Mustafa S. I. EL Haddad**Published In :** Int. j. Radiation Oncology Biol.Phys**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Purpose: Three- dimensional(3D)treatment planning has reduced the cardiac dose in postoperative radiotherapy for breast cancer; however, the overall cardiac toxicity is still an issue because of more aggressive adjuvant treatment. Toxicity models have suggested that a reduction of the heart volume treated to high doses might be particularly advantageous. We compared aperture-based multifield intensity-modulated radiotherapy (IMRT) plans to 3D-planned tangent fields using dose—volume histograms, cardiac toxicity risk and the robustness-to positioning errors .

Methods: and Materials: For 14 computed tomography data sets of patients with left-sided breast cancer (unfavorable thoracic geometry, a 3D treatment plan and an IMRT plan were created. The dose—volume histograms Were. evaluated for the target and risk organs. Excess risk of cardiac mortality was calculated for both approaches using a relative seriality model. Positioning errors were simulated by moving the isocenter .

Results: IMRT reduced the maximal dose to the left ventricle by a mean of 30.9% (49.14 vs. 33.97Gy). The average heart volume exposed to >30Gy was reduced from 45 cm³ to 5.84 cm³- The mean dose to the left ventricle was reduced by an average of 10.7% (10.86 vs. 9.7Gy) and the mean heart dose increased by an average of 24% (from 6.85 to 8.52Gy). The model-based reduction of the probability for excess therapy-associated cardiac death risk was from 6.03% for the 3D plans to 0.25% for the IMRT plans .

Conclusion: Aperture-based IMRT for left-sided breast cancer significantly reduces the maximal dose to the left ventricle, which might translate into reduced cardiac mortality. Biological modeling might aid in deciding to treat with IMRT but has to be validated prospectively. 2009 Elsevier Inc .

Breast cancer, Breast-conserving therapy, Adjuvant ant chemotherapy, Intensity-modulated radiotherapy, IMRT .

Faculty of Medicine**Dept. :** Oncology**Name :** Mustafa S. I. EL Haddad**Title :** Treatment of Aggressive Fibromatosis : the Experience of a Single Institution**Authors :** Mustafa S. I. EL Haddad**Published In :** Clinical Oncology**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Aims: Aggressive fibromatosis is a locally aggressive infiltrative low-grade tumour, although pathologically benign and it does not metastasise, yet it can cause serious local distressing symptoms by virtue of local destruction and impairment of local function. The aim of this study was to emphasise the role of radiotherapy and adequate surgery in the treatment of fibromatosis in patients presenting with newly diagnosed or recurrent disease and to analyse our treatment results over 15 years for this rare tumour type .

Materials and methods: Fifty-four patients with confirmed diagnosis of aggressive fibromatosis treated at King Faisal Specialist Hospital between 1990 and 2006 were identified from our local cancer registry. Forty-seven patients had surgery: complete resection (RO) in 20 patients, incomplete surgery (R1/2) In 27 patients and seven patients had biopsy only. Forty-five patients were treated with radiotherapy: 38 patients were treated with postoperative radiotherapy, three patients were treated with preoperative radiotherapy and four patients had radiotherapy as the only treatment. The radiotherapy dose ranged between 45 and 60Gy (median 50,4Gy). Three patients did not receive any form of treatment apart from biopsy but were still included in the final analysis .

Results: Fifty-two per cent (28/54 patients) of our patient population had tumour recurrence when first presented to King Faisal Specialist Hospital. The median age was 29.5 years (range 2—63 years). The most common site of involvement was the extremities (28 patients). Among the 54 patients (with primary and recurrent presentation) there were 10 local recurrences, all of which were within the original primary site. The 5-year progression-free survival and overall survival rates for the whole group were 75 and 95%, respectively. Univariate and multivariate Cox regression analysis showed that the depth of invasion significantly affected progression-free survival .

Conclusion: Aggressive fibromatosis is effectively treated with surgery and postoperative radiotherapy. Patients first presenting with tumour recurrence may still have local tumour control comparable with newly diagnosed patients .

Keywords:

Fibromatosis; Local tumour control; Radiotherapy; Surgery.

Faculty of Medicine

Dept. : Ophthalmology

Name : Ahmed M. Kamal



Title : Ultrasound Biomicroscopy Comparison of Ab Interno and Ab Externo Scleral Fixation of Posterior Chamber Intraocular Lenses

Authors : A. M. Kamal, M. Hanafy, A. Ehsan and R. H. Tomerak

Published In : Cataract and Refractive Surgery

ISSN : 0886-3350

Impact Factor : 2.508

Abstract :

Purpose: To compare ab interno and ab externo scleral fixation of posterior chamber intraocular lenses (PC IOLs) using ultrasound biomicroscopy (UBM) to determine the centration of IOL optic and the position of the haptics in relation to the sulcus.

Setting: Kasr Eleini Hospital, Cairo University, Cairo, Egypt.

Methods: Consecutive patients with aphakia had ab externo or ab interno scleral fixation of a PCIOL. Ultrasound biomicroscopy was used preoperatively to determine whether the eyes were unsuitable for capsule fixation and 3 and 6 months postoperatively, determine the position of the haptics in relation to the ciliary sulcus and evaluate centration of the optic.

Results: Fifteen eyes of 14 patients were studied. Eight patients had ab externo fixation and 7 had ab interno fixation. The haptics were located in the sulcus in 31% of cases with ab externo fixation and 29% with ab interno fixation. The difference was not statistically significant.

Conclusion: Ab interno and ab externo scleral fixation, which are both blind procedures, resulted in comparable low rates of sulcus fixation.

Keywords :

Scleral fixation IOL; Aphakia; Ultrasound biomicroscopy (UBM).

Faculty of Medicine

Dept. : Ophthalmology

Name : Mohamed A. Eldaly



Title : First Versus Second Eye Intravitreal Ranibizumab Therapy for Wet Amd

Authors : Mohamed A. Eldaly and Caroline Styles

Published In : Retina

ISSN : 0275-004X

Impact Factor : 3.478

Abstract :

Purpose: To evaluate the short-term visual outcomes after intravitreal Ranibizumab for wet age-related macular degeneration, when used in first eyes (good vision in the untreated eye) compared with second eyes (significant visual impairment in the untreated eye).

Methods: Seventy-five consecutive patients who received intravitreal ranibizumab injection were divided into Group A, comprising 35 first eyed patients and Group B, comprising 40 second eyes. Visual acuity and contrast sensitivity was compared before treatment and 3 months after the 3rd injection. Results were compared at 95% confidence interval.

Results: Mean pretreatment logMar visual acuity was 0.86 (standard deviation 0.28) in Group A whereas Group B was 0.66 (standard deviation 0.36) ($P = 0.007$). Posttreatment the mean visual acuity in Group A was 0.63 (standard deviation 0.37) and in Group B was) 0.44standard deviation 0.33) ($P = 0.02$). The mean numbers of letters gained per patient were 11.1 (Group A) and 10.6 (Group B). Half of all patients showed significant improvement of visual acuity (≥ 15 letters gain). Contrast sensitivity significantly improved in both groups and was usually, but not always, associated with visual gain.

Conclusion: Second eye patients tend to present to clinical diagnosis at a better visual acuity than first ones and subsequently have better chances for better posttreatment visual acuity. However, both groups have an equal chance of significant visual improvement.

Keywords:

AMD; Ranibizumab; Wet; intravitreal; Vision.

Faculty of Medicine

Dept. : Orthopaedic Surgery

Name : **Khaled H. Salem**



Title : Treatment of Tossy III acromioclavicular joint injuries using hook plates and ligament suture

Authors : Khaled H. Salem

Published In : J Orthop Trauma

ISSN : 0890-5339

Impact Factor : 1.43

Abstract :

Objectives: The management of acromioclavicular (AC) injuries has long been debated. We analyzed our results in treating such cases using hook plates and ligament suture. Design: Retrospective nonrandomized study.

Setting: Level I Trauma Center (University Hospital). Patients: Twenty-five patients (mean age 41 years) with complete Tossy III AC joint disruptions. Using the Rockwood classification, 15 dislocations were classified as type V injuries, 9 as type III injuries and 1 as a type IV injury.

Intervention: All patients were operatively treated using AC hook plates with ligament suturing after a median delay of 7 days. Main Outcome Measures: Clinical and radiographic evaluation using Constant–Murley functional score and Taft et al criteria.

Results: A retrospective clinical and radiographic evaluation of 23 patients was performed after an average follow-up period of 30 months. The mean Constant score was 97 (range, 90–100) points and the mean Taft score was 10.6 points. All but 1 patient were satisfied with their treatment outcome. Eight cases showed some loss of reduction after plate removal. A poor correlation existed, however, between clinical and radiographic results.

Conclusions: The hook plate is a reliable fixation tool for complete AC joint dislocations, ensuring immediate stability and allowing early mobilization with good functional and cosmetic results. Routine plate removal should however be reevaluated.

Keywords:

Acromioclavicular (AC) joint disruption; Coracoclavicular ligament suture; Hook plate; Tossy III.

Faculty of Medicine**Dept.** : Orthopedics**Name** : **Mohamed T. El-shewy****Title** : Repair of Chronic Rupture of the Achilles Tendon Using 2 Intratendinous Flaps from the Proximal Gastrocnemius-Soleus Complex**Authors** : M. T. El-Shewy, H. M. El-Barbary and A. Abdel-Ghani**Published In** : The American Journal of Sports Medicine**ISSN** : 0363-5465**Impact Factor** : 3.646**Abstract** :

Background: Chronic rupture of the Achilles tendon is a surgical challenge, owing to the presence of a gap between the retracted ends, which renders direct repair almost impossible.

Purpose: In this study, 2 intratendinous distally based flaps fashioned from the proximal gastrocnemius-soleus complex are used to bridge the gap between the retracted edges of the ruptured Achilles tendon. The flaps are placed in the same line of pull of the ruptured tendon, in an effort to make the graft mimic the original biomechanics as much as possible.

Study Design: Case series; Level of evidence, 4.

Methods: Eleven patients (9 male and 2 female) with neglected ruptures of the Achilles tendon with retracted ends were included in this study. Two flaps fashioned from the proximal gastrocnemius-soleus complex were rotated over themselves, passed through the proximal stump and then securely inserted into a previously prepared bed in the distal stump.

Results: The patients were followed up for a period of 6 to 9 years. At the final follow-up, all patients were able to return to their preinjury level of activity within a period of 6 to 9 months. The mean preoperative American Orthopedic Foot and Ankle Society score was 42.27, whereas it was 98.91 at the final follow-up, with a range of 88 (in 1 patient) to 100 points (in 10 patients). All 11 patients showed statistically significant improvement according to the Holz rating system.

Conclusion: This technique allows for a bridging of the defect present in chronic ruptures of Achilles tendons, with a minimum of complications and a good final outcome.

Keywords :

Achilles tendon; Rupture; Neglected; Repair; Intratendinous flaps.

Faculty of Medicine

Dept. : Otolaryngology

Name : Ahmed Hesham Fawzy



Title : Bipolar Diathermy Versus Cold Dissection in Paediatric Tonsillectomy

Authors : Ahmed Hesham Fawzy

Published In : International Journal of Otolaryngology

ISSN : 0165-5876

Impact Factor : 1.118

Abstract :

Objectives: To compare bipolar diathermy with cold dissection in paediatric tonsillectomy.

Methods: One hundred and fifty children were randomized equally into bipolar diathermy tonsillectomy (BDT) and cold dissection tonsillectomy (CDT). Operative time, operative blood loss, postoperative pain, diet intake, activity level and complications were compared in the 2 groups.

Results: The 2 groups were comparable in age and sex distribution. Operative time and blood loss was significantly less in the diathermy group. No significant difference in the postoperative pain except on the 3rd day in which the cold dissection group showed significantly lower pain score. Mean percentage of diet was significantly higher in the diathermy group on the 1st day. No significant difference between the 2 groups in terms of postoperative activity and complications.

Conclusion: BDT is a safe technique of tonsillectomy. There is significant less operative time and blood loss with similar morbidity compared to CDT, so it can be used safely in children.

Faculty of Medicine

Dept. : Otolaryngology

Name : Amr El-Badrawy



Title : Transoral Endoscopic Adenoidectomy

Authors : Mosaad Abdel-Aziz and Amr El-Badrawy

Published In : International Journal of Otolaryngology

ISSN : 0165-5876

Impact Factor : 1.118

Abstract :

Objective: Adenoid curette guided by an indirect transoral mirror and a headlight is a simple and quick procedure that has already been in use for a long time, but this method carries a high risk of recurrence unless done by a well-experienced surgeon.

The purpose of this paper was to evaluate the efficacy of transoral endoscopic adenoidectomy in relieving the obstructive nasal symptoms .

Methods: 300 children underwent transoral endoscopic adenoidectomy using the classic adenoid curette and St Claire Thomson forceps with a 70° Hopkins 4-mm nasal endoscope introduced through the mouth and the view was projected on a monitor. Telephone questionnaire was used to follow-up the children for one year. Flexible nasopharyngoscopy was carried out for children with recurrent obstructive nasal symptoms to detect adenoid rehypertrophy .

Results: No cases presented with postoperative complications. Only one case developed recurrent obstructive nasal symptoms due to adenoid regrowth and investigations showed that he had nasal allergy which may be the cause of recurrence.

Conclusion: Transoral endoscopic adenoidectomy is the recent advancement of classic curettage adenoidectomy with direct vision of the nasopharynx that enables the surgeon to avoid injury of important structures as Eustachian tube orifices and also it gives him the chance to completely remove the adenoidal tissues.

Faculty of Medicine

Dept. : Otolaryngology

Name : Mosaad Abdel-Aziz



Title : Congenital Palatal Fistula in A Patient With Submucous Cleft Palate

Authors : Mosaad Abdel-Aziz

Published In : Plastic, Reconstructive and Aesthetic Surgery

ISSN : 1748-6815

Impact Factor : 1.235

Abstract :

Palatal fistula is usually acquired after cleft palate repair. Here, we report a case of submucous cleft palate associated with congenital palatal fistula.

A 3.5-year-old girl presented with hypernasal speech. Her parents gave a history that the child was a full-term baby, with no family history of similar condition and no history of palatal trauma. An examination revealed that the child had a submucous cleft palate in addition to the presence of a small fistula measuring about 3 mm in diameter in the central part of the soft palate, midway between the posterior notch of hard palate and the bifid uvula. There was no past history of any palatal surgery. A general examination showed no other congenital anomalies. The child was treated by using the Furlow double-opposing Z-plasty technique with complete palatal closure, followed by speech therapy. She now has normal speech.

Faculty of Medicine

Dept. : Otolaryngology

Name : Mosaad Abdel-Aziz



Title : Rhinoscleroma in a Child

Authors : Mosaad Abdel-Aziz

Published In : Pediatric Otorhinolaryngology Extra

ISSN : 1871-4048

Impact Factor : 0.0

Abstract :

Rhinoscleroma is an endemic disease in Egypt, it affects mainly the nose but it can extend to the pharynx, larynx, trachea and bronchi. It is more common in females and it usually affects the middle age individuals. Unilateral nasal affection is rare while bilateral presentation is common. In this study, we present a 5-year-old girl with unilateral rhinoscleroma.

Keywords:

Rhinoscleroma; Nasal granuloma; Chronic rhinitis; Pediatric rhinitis.

Faculty of Medicine

Dept. : Otolaryngology

Name : Mosaad Abdel-Aziz



Title : Treatment of Persistent Post-Adenoidectomy Velopharyngeal Insufficiency by Sphincter Pharyngoplasty

Authors : Mosaad Abdel-Aziz

Published In : Pediatric Otorhinolaryngology

ISSN : 0165-5876

Impact Factor : 1.118

Abstract :

Objective: Persistent hypernasality after adenoidectomy is an infrequent problem in children with normal palate. However if it happened, it can render a child's speech unintelligible resulting in serious affection of social life. We aimed in this study to identify the causes of persistent post-adenoidectomy velopharyngeal insufficiency and to assess the efficacy of sphincter pharyngoplasty in the treatment of such problem.

Methods: This study was conducted on 18 patients complained of hypernasal speech following removal of their adenoids after variable periods of failed expected spontaneous improvement. Their hypernasality was rated as being mild, moderate and severe, all cases were subjected to conservative treatment in the form of speech therapy for 3 months to correct the problem and patients that did not respond to speech therapy were subjected to surgical intervention in the form of sphincter pharyngoplasty. Velopharyngeal closure was assessed using flexible nasopharyngoscopy, while speech was assessed using auditory perceptual assessment and nasometry.

Results: Hypernasality was mild in 9 cases, moderate in 7 cases and severe in 2 cases. Flexible nasopharyngoscopy showed occult submucous cleft in 5 cases, short palate in 2 cases and deep nasopharynx in 3 cases. Speech improvement was achieved in 8 cases after completion of speech therapy program (all had mild hypernasality with no anatomical palatal defects). Ten patients that had palatal defects were subjected to sphincter pharyngoplasty, 8 of them showed complete recovery, while 2 cases with severe hypernasality showed partial improvement of their speech.

Conclusions: Persistent post-adenoidectomy velopharyngeal insufficiency may be due to anatomical abnormalities of the palate such as an occult submucous cleft, short palate or deep nasopharynx; such conditions may be overlooked during

the preoperative preparation for adenoid removal. Speech therapy is an effective method in mild hypernasality especially if there is no anatomical abnormality, while surgical correction is usually needed in moderate and severe cases and sphincter pharyngoplasty is a useful choice for those patients

Keywords:

Adenoidectomy; Velopharyngeal insufficiency; Hypernasality; Speech therapy; Sphincter pharyngoplasty.

Faculty of Medicine

Dept. : Pathology

Name : Samia M. Gabal



Title : Low-grade Endometrial Stromal Sarcoma With Intravenous Extension to the Heart.

Authors : S. Gabal, S. Abdel Aziz, H. Khairy, G. Hamada, Z. Ashour and K. Saied

Published In : Medscape Journal of Medicine

ISSN : 1934-1997

Impact Factor : 0.0

Abstract :

Endometrial stromal sarcoma (ESS) is a rare neoplasm of uterine origin. Intracardiac metastasis from this tumor is extremely infrequent. This report describes a 24-year-old woman from Yemen who had irregular vaginal bleeding shortly after spontaneous abortion. She developed left-lower-limb swelling, diagnosed by duplex scanning and magnetic resonance imaging as deep venous thrombosis in the inferior vena cava (IVC) that extended into the iliac veins on both sides, as well as the left femoral vein and right atrium. She developed acute respiratory distress, from which she recovered after transfer to the intensive care unit. Transesophageal echocardiography showed a large mass occupying the right atrium and ventricle and another mass in the right ventricular outflow tract with areas of cavitations. The tumor appeared to come from the IVC and extended through the right atrium and right ventricle into the pulmonary artery, ending in several digit-like projections. After surgical resection of the intracardiac mass, pathologic examination revealed a low-grade ESS that was confirmed by immunohistochemistry. The patient underwent panhysterectomy and IVC debridement. Pathologic examination revealed infiltrating low-grade endometrial sarcoma invading the myometrium and left adnexa, with intravenous extension into the pelvic veins and the IVC to the right side of the heart. This case shows that despite its well-known good prognostic nature, low-grade ESS may behave as an aggressive malignancy.

Keywords :

Stromal sarcoma; Uterine tumors; Intracardiac extension.

Faculty of Medicine**Dept.** : Parasitology**Name** : **Hanaa M. E. Moussa****Title** : Subtype Analysis of Blastocystis Isolates from Symptomatic Patients in Egypt**Authors** : L. Souppart, H. Moussa, A. Cian, G. Sancier, P. Poirier, H. El Alaoui, F. Delbac, K. Boorom, L. Delhaes, E. Dei-Cas and E. Viscogliosi**Published In** : Parasitology Research**ISSN** : 0932-0113**Impact Factor** : 1.473**Abstract** :

Blastocystis sp. has been described as the most common intestinal parasite in humans and has an increased impact in public health. To improve our understanding of the molecular epidemiology of this human-emerging parasite, we determined the Blastocystis subtypes (STs) and their relative frequency in Egyptian patients living in or in the vicinity of Cairo and presenting gastrointestinal symptoms. We obtained a total of 20 stool samples identified as positive for Blastocystis by microscopic examination of smears. Genotyping using partial small subunit ribosomal RNA gene analysis identified a total of 21 Blastocystis isolates corresponding to 19 single infections and one mixed infection (ST1 and ST3). Three STs were identified: ST3 was the most common ST in the present Egyptian population (61.90%) followed by ST1 (19.05%) and ST2 (19.05%). Together with previous studies carried out in different areas in Egypt, a total of five STs (ST1, ST2, ST3, ST4 and ST6) have been found in symptomatic patients. These data were compared to those available in the literature and we underlined variations observed in the number and relative proportions of STs between and within countries. On the whole, it seemed that Blastocystis infection is likely not associated with specific STs even if some STs are predominant in the epidemiologic studies, but rather with a conjunction of factors in the course of infection including environmental risk and parasite and host factors.

Keywords :

Blastocystis; Genotyping; Subtype; Symptomatic; Egypt.

Faculty of Medicine**Dept. :** Pediatrics**Name :** Amal El Beshlawy**Title :** The Effect of Freezing on the Recovery and Expansion of Umbilical Cord Blood Hematopoietic Stem Cells Researchers**Authors :** A. El Beshlawy, H. G. Metwally, K. Abd El Khalek, R. A. Zayed, R. F. Hammoud and S. M. Mousa**Published In :** Experimental and Clinical Transplantation**ISSN :** 00-00**Impact Factor :** 0.0**Abstract :**

Objectives: Cell populations residing in waste tissues (cord blood, umbilical cord and placenta) may be collected without any medical or ethical contraindications concerning the mother or newborn baby. Cord blood hematopoietic stem cells are routinely used for clinical transplants; however, the low cell dose of the graft limits their therapeutic efficacy as it is associated with increased delayed or failed engraftment. The cell dose can be increased and the efficacy of cord blood transplant potentially improved, by ex vivo expansion before transplant. **Materials and Methods:** Twelve umbilical cord blood samples were included. The effect of cord blood storage at -80°C on CD34+ cell count (mean \pm standard deviation [SD]), cell viability (mean \pm SD percent) and cell cycle status (percent quiescent versus dividing) was estimated. Ex vivo culture of cord blood mononuclear cells was done before storage and after 1 week of freezing and after 2 weeks of freezing. Ex vivo liquid culture was performed with media supplemented with stem cell factor, interleukin-3 (IL-3) and both. **Results:** The count of CD34+ cells in pre-expansion aliquots decreased from $15.00 \pm 9.96 \times 10^6$ cells before freezing to $7.70 \pm 3.20 \times 10^6$ cells after 2 weeks of freezing ($P = .024$). Cell viability in pre-expansion aliquots decreased from $99.5\% \pm 1.0\%$ before freezing, to $52.5\% \pm 27.5\%$ after 1 week of freezing ($P = .013$) and to $32.5\% \pm 9.5\%$ after 2 weeks of freezing ($P = .001$). Mean fold of cell expansion and proportion of quiescent versus dividing cells did not change significantly from before to after freezing and was not significantly different for culture with stem cell factor, IL-3, or both. **Conclusion:** Although freezing decreased cell count and viability, it did not impair the expansion potential of cord blood hematopoietic cells. Whether IL-3 or stem cell factor should be considered as essential components of expansion media is uncertain.

Keywords :

Ex vivo expansion; Cryopreservation; viability; Stem cell factor; Interleukin-Hemoglobinopathies; Thalassemia; Database; International cooperation; Community network.

Faculty of Medicine

Dept. : Pediatrics

Name : Amal El Beshlawy



Title : Prevention of Hemoglobinopathies in Egypt

Authors : Amal El-Beshlawy and Ilham Youssry

Published In : Hemoglobin

ISSN : 0363 - 0269

Impact Factor : 1.0

Abstract :

The hemoglobin disorders are the most common clinically serious single gene disorders in the world. In Egypt, b-thalassemia is the most common type with a carrier rate varying from 5.3 to 39% and a gene frequency of 0.03. So, it was estimated that 1,000/1.5 million per year live births will suffer from thalassemia disease in Egypt (total live births 1,936,205 in 2006). b-Thalassemia creates a social and financial burden for the patients' family and the Egyptian government. The high frequency of b-thalassemia carriers with increasing rate of newly born cases is a pressing reason for the importance to develop prevention program for b-thalassemia in Egypt. Sickle-cell disease (SCD) is not frequent in Egypt except in the Oases where the carrier rate varies from 9 to 22%. Our objectives were to provide an in-depth analysis of the current status of hemoglobinopathies in Egypt and what we need for prevention of these diseases.

Keywords :

Thalassemia; Sickle-cell disease; Hemoglobinopathies; Prenatal diagnosis; Premarital screening; Prevention program.

Faculty of Medicine

Dept. : Pediatrics

Name : Amal El Beshlawy



Title : An Electronic Infrastructure for Research and Treatment of the Thalasseмии and Other Hemoglobinopathies: The Euro-Mediterranean Ithamet Project

Authors : C. W. Lederer, A. N. Basak, Y. Aydinok, S. Christou, A. El-Beshlawy, A. Eleftheriou, S. Fattoum, A. E. Felice, E. Fibach, R. Galanello, R. Gambari, L. Gavriila, P. C. Giordano, F. Grosveld, H. Hassapopoulou, E. Hladka, E. Kanavakis, F. Locatelli, J. Old, G. P. Patrinos, G. Romeo, A. Taher, J. Traeger- Synodinos, P. Vassiliou, A. Villegas, E. Voskaridou, H. Wajcman, A. Zafeiropoulos, M. Kleanthous

Published In : Hemoglobin

ISSN : 0363 - 0269

Impact Factor : 1.0

Abstract :

Hemoglobin (Hb) disorders are common, potentially lethal monogenic diseases, posing a global health challenge. With worldwide migration and intermixing of carriers, demanding flexible health planning and patient care, hemoglobinopathies may serve as a paradigm for the use of electronic infrastructure tools in the collection of data, the dissemination of knowledge, the harmonization of treatment and the coordination of research and preventive programs. ITHANET, a network covering thalasseмии and other hemoglobinopathies, comprises 26 organizations from 16 countries, including non European countries of origin for these diseases (Egypt, Israel, Lebanon, Tunisia and Turkey). Using electronic infrastructure tools, ITHANET aims to strengthen cross-border communication and data transfer, cooperative research and treatment of thalasseμία and to improve support and information of those affected by hemoglobinopathies. Moreover, the consortium has established the ITHANET Portal, a novel web-based instrument for the dissemination of information on hemoglobinopathies to researchers, clinicians and patients. The ITHANET Portal is a growing public resource, providing forums for discussion and research coordination and giving access to courses and databases organized by ITHANET partners. Already a popular repository for diagnostic protocols and news related to hemoglobinopathies, the ITHANET Portal also provides a searchable, extendable database of thalasseμία mutations and associated background information.

The experience of ITHANET is exemplary for a consortium bringing together disparate organizations from heterogeneous partner countries to face a common health challenge. The ITHANET Portal as a web-based tool born out of this experience amends some of the problems encountered and facilitates education and international exchange of data and expertise for hemoglobinopathies.

Keywords:

Hemoglobinopathies; Thalassemia; Database; International cooperation; Community network.

Faculty of Medicine**Dept.** : Pediatrics**Name** : **Amal El Beshlawy****Title** : Efficacy and Safety of Deferasirox, an Oral Iron Chelator, in Heavily Iron-Overloaded Patients With B-Thalassaemia: the ESCALATOR Study**Authors** : A. El Beshlawy, A. Taher, M. S. Elalfy, K. Al Zir, S. Daar, D. Habr, U. Kriemler-Krahn, Abdel Hmissi and Abdullah Al Jefri.**Published In** : European Journal of Hematology**ISSN** : 0902- 4441**Impact Factor** : 2.237**Abstract** :

Objective: Many patients with transfusional iron overload are at risk for progressive organ dysfunction and early death and poor compliance with older chelation therapies is believed to be a major contributing factor. Phase II/III studies have shown that oral deferasirox 20–30 mg/kg/d reduces iron burden, depending on transfusional iron intake. **Methods:** The prospective, open-label, 1 yr ESCALATOR study in the Middle East was designed to evaluate once-daily deferasirox in patients ≥ 2 yr with β thalassaemia major and iron overload who were previously chelated with deferoxamine and or deferiprone. Most patients began treatment with deferasirox 20 mg/kg/d; doses were adjusted in response to markers of over- or under-chelation. The primary endpoint was treatment success, defined as a reduction in liver iron concentration (LIC) of > 3 mg Fe/g dry weight (dw) if baseline LIC was >10 mg Fe/g dw, or final LIC of 1–7 mg Fe/g dw for patients with baseline LIC of 2 to <10 mg Fe/g dw. Results: Overall, 233/ 237 enrolled patients completed 1 yr's treatment. Mean baseline LIC was 18.0 ± 9.1 mg Fe/g dw, while median serum ferritin was 3356 ng/mL. After 1 yr's deferasirox treatment, the intent-to-treat population experienced a significant treatment success rate of 57.0% ($P = 0.016$) and a mean reduction in LIC of 3.4 mg Fe/g dw. Changes in serum ferritin appeared to parallel dose increases at around 24 wk. Most patients (78.1%) underwent dose increases above 20 mg/kg/d, primarily to 30 mg/kg/d. Drug-related adverse events were mostly mild to moderate and resolved without discontinuing treatment. **Conclusions:** The results of the ESCALATOR study in primarily heavily iron- overloaded patients confirm previous observations in patients with β -thalassaemia, highlighting the importance of timely deferasirox dose adjustments based on serum ferritin levels and transfusional iron intake to ensure patients achieve their therapeutic goal of maintenance or reduction in iron burden.

Keywords :

iron chelation; Deferasirox; β -thalassaemia; Transfusional iron overload.

Faculty of Medicine**Dept.** : Pediatrics**Name** : **Amal El Beshlawy****Title** : Tailoring Iron Chelation by Iron Intake and Serum Ferritin:
Prospective EPIC Study of Deferasirox in 1744 Patients With
Transfusion-Dependent Anemias**Authors** : M. D. Cappellini, J. Porter, A. El-Beshlawy, C.-Kong Li, J. F.
Seymour, M. Elalfy, N. Gattermann, S. Giraudier, J.-Wook Lee,
L. L. Chan, K.-Hsin Lin, C. Rose, A. Taher, S. L. Thein, V.
Viprakasit, D. Habr, G. Domokos, B. Roubert and A. Kattamis**Published In** : Haematologica**ISSN** : 0390-6078**Impact Factor** : 5.978**Abstract** :

Background: Following a clinical evaluation of deferasirox (Exjade®) it was concluded that, in addition to baseline body iron burden, ongoing transfusional iron intake should be considered when selecting doses. The 1-year EPIC study, the largest ever investigation conducted for an iron chelator, is the first to evaluate whether fixed starting doses of deferasirox, based on transfusional iron intake, with dose titration guided by serum ferritin trends and safety markers, provides clinically acceptable chelation in patients (aged ≥ 2 years) with transfusional hemosiderosis from various types of anemia.

Design and Methods: The recommended initial dose was 20 mg/kg/day for patients receiving 2-4 packed red blood cell units/month and 10 or 30 mg/kg/day was recommended for patients receiving less or more frequent transfusions, respectively. Dose adjustments were based on 3-month serum ferritin trends and continuous assessment of safety markers. The primary efficacy end-point was change in serum ferritin after 52 weeks compared with baseline.

Results: The 1744 patients enrolled had the following conditions; thalassemia (n=1115), myelodysplastic syndromes (n=341), aplastic anemia (n=116), sickle cell disease (n=80), rare anemias (n=43) and other transfused anemias (n=49). Overall, there was a significant reduction in serum ferritin from baseline (-264 ng/mL; $p < 0.0001$), reflecting dosage adjustments and ongoing iron intake. The most common (>5%) adverse events were gastrointestinal disturbances (28%) and skin rash (10%).

Conclusions: Analysis of this large, prospectively collected data set confirms the response to chelation therapy across various anemias, supporting initial

deferasirox doses based on transfusional iron intake, with subsequent dose titration guided by trends in serum ferritin and safety markers (clinicaltrials.gov identifier: NCT00171821).

Keywords:

Transfusion medicine; Iron chelation therapy; Transfusion-dependent anemias.

Faculty of Medicine

Dept. : Pediatrics

Name : Amal El Beshlawy



Title : Fetal Globin Induction In β -Thalassemia

Authors : Amal El-Beshlawy, Mona Hamdy and Mona El Ghamrawy

Published In : Hemoglobin

ISSN : 0363 - 0269

Impact Factor : 1.0

Abstract :

Thalassemia patients with persistently high levels of fetal globin typically have less severe anemia, have milder clinical syndromes and are often transfusion independent. Therefore, the search for molecules exhibiting the property of inducing γ -globin gene expression and fetal hemoglobin (HbF) production is of great interest. Different pharmacological agents have been studied, namely erythropoietin, short chain fatty acids and cytotoxic agents, azacytidine and hydroxycarbamide. Hemoglobin F inducers from natural plants, such as angelicin and resveratrol, are powerful inducers of erythroid differentiation and increase HbF in erythroid progenitors of thalassemia patients. Induction of HbF in β -thalassemia patients is expected to be crucial for developing countries unable to sustain the high cost of clinical management of β -thalassemia patients.

Keywords :

β -Thalassemia, HbF inducers; Pharmacological agents; Natural inducers.

Faculty of Medicine

Dept. : pediatric

Name : **Amany Ezzat Elwan**



Title : Diagnosis of Neonatal Bacterial Sepsis by Polymerase Chain Reaction

Authors : A. E. Elwan and W. A. Zarouk

Published In : Biological Science

ISSN : 1727-3048

Impact Factor : 0.0

Abstract :

The aim of this study is to find out a faster way with considerable sensitivity and specificity using a polymerase chain reaction (PCR) for detecting bacterial DNA encoding 16 S RNA.

A broad range PCR without preincubation was compared to conventional diagnostic work up for clinical sepsis, including blood culture, for early determination of bacterial sepsis in 75 neonates with suspected neonatal sepsis. Also, the relationship between clinical signs and laboratory parameters were explored. According to blood culture results patients were classified into blood culture positive and negative groups.

Blood culture positive group were 39 newborns of them 36 had PCR positive and 26 had sepsis screen positive. Blood culture negative group were 34 newborns of them 4 had PCR positive and 7 had sepsis screen positive.

Compared to blood culture sepsis screen showed sensitivity 66.6 %, specificity 79.4%, positive 78.7% and negative predictive value 67.5% in diagnosis of neonatal sepsis while PCR compared to blood culture showed sensitivity of 92.3%, specificity of 88.2%, positive predictive value 90% and negative predictive value 91%.

Two patients were excluded from the study as their blood culture showed candida albicans.

With results available within 4 hours, PCR had more sensitivity and specificity than sepsis screen in diagnosis of neonatal sepsis. PCR has potential for early detection of bacterial DNA encoding 16 S RNA but this needs further development and improvement. Blood culture is still irreplaceable at present, since pure isolates are essential for antimicrobial drug susceptibility testing.

Keywords :

Newborn sepsis; Screening; Polymerase chain reaction.

Faculty of Medicine

Dept. : Pediatrics

Name : Samia S. Mahmoud



Title : Systemic Lupus Erythematosus in Egyptian Children

Authors : S. Salah, H. M. Lotfy, S. M. Sabry, A. El Hamshary and H. Taher

Published In : Rheumatology International

ISSN : 0172-8172

Impact Factor : 1.327

Abstract :

We retrospectively studied 207 patients with SLE diagnosed between 1990 and 2005. We obtained clinical features and laboratory data and analyzed them statistically. We studied 151 female and 56 male SLE patients. The female to male ratio was 2.7 to 1 and the mean age at presentation was 10 \pm 2.7 years (range 2–16). The mean disease duration was 6.47 \pm 3.74 years. At diagnosis, musculoskeletal, constitutional and mucocutaneous manifestations were the commonest features. During follow-up, the prevalence of nephritis (67%), hematological manifestations (44.9%), photosensitivity (44%), arthritis (39%), malar rash (38.2%), serositis (32.9%) and neuropsychiatric manifestations (24.25%) increased significantly. Those whose age of onset of the disease was \leq 5 years (nine patients) had significantly more common hematological affection (P value = 0.0005). The characteristics of SLE in Egyptian patients show some similarities to other series of Middle Eastern countries, but with a lower female to male ratio. Disease onset below 5 years is not extremely rare (4.35%), commonly presenting with hematological manifestations. The kidney was the commonest major internal organ involved and also an important cause of death.

Keywords :

Systemic lupus erythematosus; Lupus epidemiology; Egyptian children.

Faculty of Medicine**Dept. :** Pediatrics**Name :** Shereen Abdelghaffar**Title :** Metformin Added to Insulin Therapy for Type 1 Diabetes Mellitus in Adolescents**Authors :** Shereen Abdelghaffar and Abdelhamid M. Attia**Published In :** Archives of Medical Science**ISSN :** 1469-493X**Impact Factor :** 5.182**Abstract :**

Background: In adolescents with type 1 diabetes, insulin resistance likely plays a role in the deterioration of metabolic control. In type 1 diabetes, addition of metformin to insulin therapy, to improve insulin sensitivity, has been assessed in a few trials involving few patients or in uncontrolled studies of short duration. No systematic reviews are available up to date to summarize the evidence about metformin addition to insulin therapy in adolescents with type 1 diabetes.

Objectives: To assess the effects of metformin added to insulin therapy for type 1 diabetes mellitus in adolescents. Search Strategy: We searched The Cochrane Library, Medline and Embase. We also searched databases of ongoing trials, reference lists of relevant reviews and we contacted experts, authors and manufacturers. Selection Criteria: Any randomised controlled trial (RCT) of at least three months duration of treatment comparing metformin added to insulin therapy versus insulin therapy alone in adolescents with type 1 diabetes was included. Cross-over and quasi-randomised controlled trials were excluded. Data Collection And Analysis: Two reviewers read all abstracts, assessed quality and extracted data independently. Authors were contacted for missing data. MAIN

Results: Only two trials (60 participants) investigating the effect of metformin added to insulin therapy for three months in adolescents with poorly controlled type 1 diabetes could be included. Meta-analysis was not possible due to the clinical and methodological heterogeneity of data. Both studies suggested that metformin treatment lowered glycosylated haemoglobin A1c (HbA1c) in adolescents with type 1 diabetes and poor metabolic control. Improvements in insulin sensitivity, body composition or serum lipids were not documented in either study, however, one study showed a decrease in insulin dosage by 10%. Adverse effects were mainly gastrointestinal in both studies and hypoglycaemia in one study.

No data on health-related quality of life, all-cause mortality or morbidity are currently available. Authors' **Conclusions:** There is some evidence suggesting improvement of metabolic control in poorly controlled adolescents with type 1 diabetes, on addition of metformin to insulin therapy. Stronger evidence is required from larger studies, carried out over longer time periods to document the long-term effects on metabolic control, health-related quality of life as well as morbidity and mortality in those patients.

Keywords:

Metformin; Type 1 diabetes; Adolescents; Insulin resistance.

Faculty of Medicine**Dept. :** Pediatrics**Name :** **Mortada H. F. El-Shabrawi****Title :** Egyptian Glycogen Storage Disease Type III – Identification of Six Novel AGL Mutations, Including A Large 1.5 Kb Deletion and A Missense Mutation P.L620P With Subtype Iiid**Authors :** Y. Endo¹, E. Fateen, M. El Shabrawy, Y. Aoyama, T. Ebara, T. Murase, T. Podskarbi, Y. S. Shin and M. Okubo**Published In :** Clinical Chemistry and Laboratory Medicine**ISSN :** 1434-6621**Impact Factor :** 1.888**Abstract :**

Background: Glycogen storage disease type III (GSD III) is caused by mutations in AGL which encodes for a single protein with two enzyme activities: oligo-1, 4-1, 4-glucantransferase (transferase) and amylo-1, 6-glucosidase. Activity of both enzymes is lost in most patients with GSD III, but in the very rare subtype IIIId, transferase activity is deficient. Since the spectrum of AGL mutations is dependent on the ethnic group, we in Egyptian patients with GSD III.

Methods: Clinical features were examined in five Egyptian patients. AGL was sequenced and AGL haplotypes were determined.

Results: Six novel AGL mutations were identified: a large deletion (c.3481–3588q1417del11525 bp), two insertions (c.1389insG and c.2368insA), two small deletions (c.2223–2224delGT and c.4041delT) and a missense mutation (p.L620P). p.L620P was found in a patient with IIIId. Each mutation was located on a different AGL haplotype.

Conclusions: Our results suggest that there is allelic and phenotypic heterogeneity of GSD III in Egypt. This is the second description of a large deletion in AGL. p.L620P is the second mutation found in GSD IIIId. Clin Chem Lab Med 2009;47:1233–8.

Keywords :

AGL; Glycogen storage disease type III; Large deletion; Missense mutation.

Faculty of Medicine

Dept. : Pediatrics

Name : **Mona F. H. Hafez**



Title : Abnormal Glucose Tolerance In B-Thalassemia: Assessment of Risk Factors

Authors : M. Hafez, I. Yousry, F. abd El Hameed and A. Ibrahim

Published In : Hemoglobin

ISSN : 0363-0269

Impact Factor : 0.0

Abstract :

In b-thalassemia (b-thal) major, the pathogenetic mechanisms leading from siderosis to diabetes are poorly understood. We assessed the glycometabolic status in transfusion-dependent Egyptian b-thal patients and evaluated their possible risk factors for abnormal glucose tolerance (AGT). An oral glucose tolerance test (OGTT) was done on 54 multi-transfused patients and 28 age-matched normal controls, measuring their serum insulin levels at 0 and 120 min. Insulin sensitivity and insulin release indices were calculated. Indicators of iron overload and liver status were recorded.

Thirteen patients (24.1%) had AGT. Cases with AGT had significantly higher mean postprandial insulin, fasting insulin resistance index (FIRI) and homeostasis model assessment (HOMA) insulin resistance (IR), $p = 0.0001$ for all and significantly lower mean HOMA b cell, $p = 0.007$, when compared with normal glucose tolerance (NGT) cases. Abnormal glucose tolerance is common in multi-transfused b-thal major patients and could be attributed to early impaired b-cell function with increasing IR.

Keywords :

β -Thalassemia (β -thal) major; Impaired glucose tolerance (IGT); Diabetes mellitus (DM); Oral glucose tolerance test (OGTT); Insulin sensitivity; Insulin resistance(IR); Homeostasis model assessment (HOMA)

Faculty of Medicine**Dept.** : Pediatrics**Name** : **Maha K. Abou- Khadra****Title** : Sleep Patterns and Sleep Problems Among Egyptian School Children Living in Urban, Suburban and Rural Areas**Authors** : Maha K. Abou Khadra**Published In** : Sleep and Biological Rhythms**ISSN** : 1446-9235**Impact Factor** : 0.00**Abstract** :

The present study was conducted to determine the prevalence of sleep patterns and sleep problems among Egyptian school-aged children and to compare sleep patterns and sleep problems among school children from urban, suburban and rural areas. In this cross-sectional survey, parents of 629 school-aged children, aged 6 to 10 years, from 15 elementary schools in five rural, urban and suburban areas in the Giza governorate, Egypt, completed the Arabic version of the Children's Sleep Habits Questionnaire (CSHQ) and questions about parents' level of education and significant medical problems and/or medication for the child. The mean (SD) of total sleep duration for all children was 8.96 h (SD, 1.20). The most prevalent CSHQ subscales were: bedtime resistance, daytime sleepiness and night wakings. There were significant differences regarding bedtime ($P = 0.006$) and night-time sleep duration ($P < 0.001$) among school children from different areas, but there were no significant differences regarding wake-up time, total sleep duration, duration of nap and the eight CSHQ subscale scores. The percentage of children who took a daytime nap was 52.9% ($n = 184$) and the mean (SD) duration of a nap was 1.5 h (SD, 0.92). Paternal illiteracy was associated with higher CSHQ total score and many subscales. In conclusion, sleep duration was shorter than that reported in previous studies. Sleep problems are fairly common among elementary school children in the Giza governorate, whether in urban, suburban, or rural areas. Paternal level of education has an impact on the prevalence of sleep problems.

Keywords :

School children; Sleep pattern; Problems.

Faculty of Medicine

Dept. : Pediatrics

Name : **Neveen A. Soliman**



Title : Complete Remission of Nephrotic Syndrome in an Infant With Focal Segmental Glomerulosclerosis: is it Reninangiotensin Blockade?

Authors : Neveen A. Soliman and Magdi Francis

Published In : Pediatric Nephrology

ISSN : 0931-041X

Impact Factor : 2.42

Abstract :

Nephrotic syndrome presenting in the first year of life is often challenging, with substantial risk of progression to end-stage renal disease (ESRD). Focal segmental glomerulosclerosis (FSGS) comprises up to 20% of biopsy-proven glomerular disease in children and adults. We report on a 9-month-old infant who presented with nephrotic syndrome, hypertension and progressive deterioration of renal function due to FSGS. As immunosuppressive agents are often unsuccessful in treating this condition, we adopted renoprotection as the mainstay treatment for this patient, through rigorous control of blood pressure and proteinuria with a multi-drug regimen including renin–angiotensin axis blockade. Initially, there was partial improvement, with a gradual decline in proteinuria and a concomitant rise in the glomerular filtration rate, before the disease eventually passed into complete clinical and laboratory remission. We speculate that infants with steroid-resistant nephritic syndrome due to FSGS may benefit from tight control of hypertension, mainly through early blockade of the renin–angiotensin axis. We believe that its renoprotective mechanism counteracts the deleterious effects of both hypertension and proteinuria, thereby not only preventing progressive renal disease, but even paving the way for a remission, as in our patient. To the best of our knowledge, this is the first report of an infant with nephrotic syndrome (NS) due to FSGS that passed into complete remission while the patient was on renoprotective measures including the use of angiotensin-converting enzyme inhibitors (ACEis).

Keywords :

Focal segmental glomerulosclerosis; Proteinuria; Angiotensin-converting enzyme inhibitors; Genetic FSGS.

Faculty of Medicine

Dept. : Pediatric

Name : Yasser Hussein Kamel



Title : Ghrelin Levels in Children with Congenital Heart Disease

Authors : Amany E. Elwan, Yasser H. Kamel and Waleed A. Mohamed

Published In : Tropical Pediatrics

ISSN : 0142-6338

Impact Factor : 1.112

Abstract :

Background: Ghrelin is a novel growth hormone-releasing peptide that causes a positive energy balance by stimulating food intake and inducing adiposity and has effects on growth. Many children with congenital heart disease (CHD) present with growth retardation and malnutrition owing to multifactorial reasons.

Aim: To evaluate the circulating level of ghrelin in Egyptian children with congenital cyanotic and acyanotic heart disease and its relation to anthropometric measurements.

Materials and methods: The study included 40 patients with cyanotic and acyanotic CHD (18 cyanotic and 22 acyanotic) and 18 age- and sex-matched healthy control children. All children were subjected to measurement of height, weight, body mass index (BMI) and serum ghrelin was measured using ELISA technique.

Results: Weight, height and BMI were significantly lower in cyanotic and acyanotic patients compared to the control group ($p < 0.0001$). Serum ghrelin levels were significantly higher in children with cyanotic and acyanotic CHD in comparison to the controls ($p < 0.0001$). There was a significant negative correlation between ghrelin and BMI in the three groups ($r = -0.534$, $p = 0.023$; $r = -0.558$, $p = 0.007$; $r = -0.608$, $p = 0.007$ respectively for cyanotic, acyanotic and the control groups).

Conclusion: Circulating ghrelin level was elevated in children with congenital cyanotic and acyanotic heart disease and was associated with a decrease in BMI. This elevation in ghrelin level may represent malnutrition and growth retardation in those patients as obvious by anthropometric measures too. This may suggest that ghrelin may have an important role as a compensatory mechanism in the regulation of the metabolic balance in them.

Keywords :

Congenital heart disease; Cyanotic; Acyanotic; Ghrelin; Body mass index.

Faculty of Medicine

Dept. : Pediatric

Name : Yasser Hussein Kamel



Title : Apoptotic Markers in Childhood Nephrotic Syndrome

Authors : Yasser H. Kamel, Hafez Bazara, Amany E. Elwan, Nouran Fahmy and Olfat Shaker

Published In : Biological Science

ISSN : 1727-3048

Impact Factor : 0.0

Abstract :

In order to investigate the status and role of serum MMP-9 and urinary annexin V in steroid nephrotic syndrome, 60 children aged from 2-15 years were enrolled in this study. Serum MMP-9 and urinary annexin V were measured in nephrotic patients. Nephrotic patients were examined for apoptotic bodies by DNA in situ. Serum MMP-9 was significantly higher in patients than control (189.1 ± 150.6 and $87.53.7 \pm$ pg/ml respectively, $p < 0.0001$). Urinary annexin V was also significantly higher (4.5 ± 0.3 compared to 2.7 ± 0.6 ng /creatinin $p < 0.0001$). Apoptosis by DNA in situ was positive in 29 children (48%) and positive cases tend to have higher MMP-9 levels ($p = 0.05$). Those with focal segmental glomerulosclerosis had higher apoptosis rates (69%) and the lowest response to CPA (29%). Responders had higher urinary annexin V ($p = 0.03$) and biopsy evidence of apoptosis ($p = 0.003$) than non responders. Negative apoptosis by DNA in situ predicted response with likelihood ratio 2.47. These data confirm the role of annexin V and MMP-9 in apoptosis in nephrotic syndrome. The role of MMP-9 in the disease progression and that TIMPS as ajuvant therapy need further elucidation.

Keywords :

Apoptosis; Annexin V; Focal segmental glomerulosclerosis; Matrix metalloproteinase; Steroid resistant nephrotic syndrome.

Faculty of Medicine**Dept. :** Pediatric**Name :** Yasser Hussein Kamel**Title :** Arrhythmias as Early Post-Operative Complications of Cardiac Surgery in Children at Cairo university**Authors :** Yasser H. Kamel and Mohammad Sewielam**Published In :** Medical Science**ISSN :** 1682-4474**Impact Factor :** 0.0**Abstract :**

Arrhythmias are a recognized complication of cardiac operations in pediatrics. The aim of the study was to assess the incidence and type of arrhythmias in early post pediatric cardiac surgery patients and to analyze possible risk factors. A retrospective study conducting patients who were followed in postoperative clinic at Cairo University Children's Hospital during the period from September 2007 till January 2009. (Revise sentence). The collected data were demographic data, diagnosis, pre-operative arrhythmia, cardiac surgical data and Postoperative intensive care course were determined. (Revise sentence).

During the study period, 110 patients were enrolled; including 15/110 who had palliative surgery while 95 out of 110 had corrective surgery. Thirty patients (27.2 %) developed Postoperative arrhythmias and most of them on day one (60%). Of them 20/30 (66.6%) were cyanotic while 10/30 (33.3%) were acyanotic. Two (6.6%) had palliative surgery while 28/30 (93.3%) had corrective surgery. The most common acute post-operative arrhythmias were junctional ectopic tachycardia and Supraventricular tachycardia (33.3%) for each. Out of 95 patients who had corrective surgery, 28 (29.4%) developed arrhythmias most of them (96.4%) within first 48 hours postoperatively. they were early after repair of tetralogy of Fallot (18.1%) and (12.1%) respectively. Risk factors for arrhythmias in corrective surgery ; such as young age ,lower body weight and cyanosis (P< 0.05) , longer cardiopulmonary bypass time (P< 0.05) , redo operation(P<0.01) , Postoperative Acidosis, high inotropic support, Hypotension and ,mechanical ventilation (P< 0.01), patient with moderate operative risk , Postoperative higher doses of inotropic support, longer ventilation time were statistically significance with p value < 0.001. Younger age, lower body weight, Cyanosis, longer cardiopulmonary bypass time, Re-do procedure, Acidosis, mechanical ventilation and high inotropic support are the risk factors for postoperative arrhythmias. Junctional ectopic tachycardia and supraventricular tachycardia were the most common postoperative arrhythmias.

Keywords :

Early postoperative; Cardiac arrhythmias; Pediatric; Risk factors.

Faculty of Medicine**Dept. :** Pediatric**Name :** Yasser Hussein Kamel**Title :** Value of C-reactive Protein and IL-6 Measurements in Type I Diabetes Mellitus**Authors :** L. Fawaz, A. E. Elwan, Y. H. Kamel, A. Kamel and W. A. Mohamed**Published In :** Archive of Medical Science**ISSN :** 1734-1922**Impact Factor :** 0.772**Abstract :**

Introduction: The role of non-specific inflammation in β -cell loss in type 1 diabetes (T1DM) is unclear. In the present study, inflammatory markers were determined in patients with type I diabetes mellitus (T1DM) and related to conventional risk factors for cardiovascular disease. To determine the levels of high sensitive CRP (hs-CRP) and interleukin-6 (IL-6) as markers of inflammation in type I diabetes mellitus and to investigate their determinants in type 1 diabetes and their correlation with conventional risk factors for cardiovascular problems. Material and methods: Plasma hs-CRP and IL-6 were measured in 70 young patients with type 1 diabetes mellitus. Forty patients were well controlled on intensive insulin therapy (group I), while 30 patients were not controlled on in spite of intensive insulin therapy (group II). These results were compared to those of 30 age- and sex-matched healthy children. All subjects were assessed for a family history of type 2 diabetes and history of premature cardiovascular illness, presence of hypertension, body mass index (BMI), HbA1c and serum lipids, all of which are considered to be risk factors for cardiovascular problems.

Results: Diabetic patients had significantly higher levels of hs-CRP and IL-6 than the non diabetic control group (p-value < 0.001, < 0.05 respectively). The uncontrolled diabetes group showed significantly higher levels of the two markers than the controlled diabetic group (p-value < 0.000). Serum levels of IL-6 correlated positively with hs-CRP (r = 0.926, p < 0.0001). Hs-CRP and IL-6 correlated positively with HbA1c, BMI, total cholesterol (p < 0.000), LDL (p < 0.0001) and triglycerides (p < 0.000), whereas HDL showed a negative correlation to both hs-CRP and IL-6 (p < 0.000). There was a significantly higher incidence of hypertension, a family history of cardiovascular disease and a family history of type 2 diabetes in the uncontrolled diabetes group (p < 0.000). Hs-CRP and IL-6 were significantly higher in patients with a family history of type 2 diabetes mellitus (p < 0.005). **Conclusions:** In type I diabetes there is an increase in the

inflammatory markers, hs-CRP and IL-6 denoting subclinical chronic inflammation. These markers correlate significantly with conventional risk factors for vascular disease, namely hypertension, dyslipidemia, high body mass index and glycemic control. Type 1 diabetes patients with a positive family history of type 2 diabetes mellitus have higher hs-CRP and IL-6 levels indicating that they are more prone to cardiovascular complications.

Keywords:

inflammatory markers; Type 1 diabetes mellitus; C-reactive protein (hsCRP); Interleukin-6; Hypertension.

Faculty of Medicine**Dept.** : Pediatric**Name** : **Amany Ezzat Elwan****Title** : Eosinophil-Derived Neurotoxin Versus Immunoglobulin E as a biomarkers for evaluation of bronchial asthma.**Authors** : N. El-Helaly, A. El-Wan, Y. Kamel, M. Nabih, H. Mahmoud, M. Almasry and H. Hussein**Published In** : Biological Science**ISSN** : 1727-3048**Impact Factor** : 0.0**Abstract** :

The aim of this research was to assess the clinical utility Eosinophil derived neurotoxin (EDN) and immunoglobulin E (IgE) as a biomarker for bronchial asthma evaluation as regards type (atopic versus non atopic) and severity. The study included 39 atopic asthmatic patients (group1).31 non atopic sthmatic patients (group2) and 20 age ,sex matched control s (group3) with their age ranged 7-17 years.

Esinophil count and serum level of IgE (IgE) ,EDN and spirometry were done for all cases . A positive correlation between EDN and esinophil count was found ($r=0.423$ and $p<0.01$) and between serum EDN and IgE ($r= 0.401$, $p<0.03$).Serum EDN and IgeE levels showed statistically significant difference between group 1 and 2 ($p<0.001$ and 0.01 respectively) and between group 1 and 3 ($p<0.001$ and 0.003 respectively),but no statistically significant difference was found between group 2 and 3 for both parameters.

No correlations were found between EDN or IgE and FEV1(%)predicted .EDN level showed statistical significant difference between groups when patients classified into 4 groups based on symptoms and drug used in comparison to IgE which showed no statistically significance between the same groups . The study suggests that serum EDN may be superior to IgE as a biomarker for evaluation for asthma regarding its type and severity

Keywords :

Esinophil,cationic protein; Bronchial hyper responsiveness

Faculty of Medicine**Dept.** : Pediatric**Name** : **Yasser Hussein Kamel****Title** : N-Terminal pro-Brain Natriuretic Peptide in decompensated Ventricular septal defect.**Authors** : Yasser Baghdady, Yasser Kamel, Amany Elwan, Khaled Tohamy and Hany Hussein**Published In** : Arcive of Medical Science**ISSN** : 1734-1922**Impact Factor** : 0.772**Abstract** :

Introduction : B-type natriuretic peptide (BNP) is a cardiac neurohormone secreted predominantly from the ventricles in response to increased ventricular pressure and volume overloads. There is little information available concerning plasma concentrations of BNP in children with Ventricular Septal Defect (VSD), the most common congenital heart disease. The aim of the present study is to determine the plasma concentrations of NT-ProBNP in Ventricular Septal Defects (VSD) patients presenting with cardiac decompensation and to correlate the level of NT-pro BNP with their clinical and echocardiography data.

Material and Methods : NT-proBNP was measured in forty five ventricular septal defects patients presenting with cardiac decompensation of various Ross Scores and the results were compared to thirty age and sex matched control group. The NT-proBNP level correlated with clinical and echocardiography data.

Results : The mean value of NT-proBNP was significantly higher in patients with mild/moderate symptoms [Ross Class 2 & 3] (mean: 52.8±12.5 pg/mL) and patients with severe symptoms [Ross Class 4] (mean: 92.2±6.9 pg/mL) compared to the control group, (mean: 14.7±3.6 Pg/mL); p value < 0.0001. There was a positive correlation between Plasma NT-PROBNP Level and left atrial dimension, left ventricular end diastolic dimension, pulmonary artery pressure , fractional shortening and weight affection with P< 0.01.

Conclusions :NT-proBNP is elevated in VSDs with cardiac decompensation, it is correlated to clinical score and echocardiography parameters. It reflects pressure and volume loads to the pulmonary artery and right ventricle and may help to identify children with VSD and pulmonary hypertension that demands early intervention.

Keywords :

Ventricular septal defect; NT-proBNP; Cardiac decompansation.

Faculty of Medicine

Dept. : Radiology

Name : Sahar N Saleem



Title : Fetal MRI in the Evaluation of Fetuses Referred for Sonographically Suspected Neural Tube Defects (Ntds): Impact on Diagnosis and Management Decision

Authors : S. N. Saleem, A. H. Said, M. Abdel-Raouf, E. El-Kattan, M. Zaki and Noha Madkour

Published In : Neuroradiology

ISSN : 0028-3940

Impact Factor 2.029

Abstract :

Introduction: We hypothesized that magnetic resonance imaging (MRI) can assess fetuses with sonographically (ultrasonography (US))-suspected neural tube defects (NTD) that might influence their diagnoses and management decision .

Methods: Institutional review board approval and informed consents were obtained to perform MRI for 19 fetuses referred with US-suspected NTD. Prenatal imaging findings were correlated with management decision, postnatal clinical, postnatal imaging and pathology .

Results: Prenatal MRI correctly ruled out US diagnosis of cephalocele in a fetus. In the other 18 fetuses, MRI detected detailed topography and contents of NTD sacs in five, added central nervous system (CNS) abnormalities that were not apparent on US in three and confirmed non-CNS findings in three fetuses. MRI changed diagnosis of 3/19 fetuses (15.8%), caused minor change in diagnosis of 5/19 (26.3%) and did not influence US diagnosis of 11/19 fetuses (57.9%). MRI findings changed/modified management decision in 21% of the fetuses .

Conclusion: Fetal MRI is an important adjunct to US in assessing NTD. It can identify topography and contents of sacs, add CNS and non-CNS findings and influence management decision.

Keywords :

Fetal; MRI; Meningocele.

Faculty of Medicine**Dept. :** Radiology**Name :** Soha Talaat Hamed**Title :** Classification of Inflammatory Breast Disorders and Step by Step Diagnosis**Authors :** R. M. Kamal, S. T. Hamed, and D. S. Salem**Published In :** The breast**ISSN :** 1075-122X**Impact Factor :** 2.091**Abstract :**

In this study, the authors proposed a classification of inflammatory breast disorders based on which a practical systematic scheme in diagnosis was applied aiming to differentiate simple forms of mastitis from more complicated and malignant forms. The study population included 197 female patients who were clinically or pathologically diagnosed as having mastitis. All patients underwent Ultrasound examination. Mammography was performed for 133/197 cases. Cases of simple mastitis and periductal mastitis were followed up to ensure complete resolution. Abscess cavities and postoperative collections were drained. Other cases were biopsied to confirm diagnosis and were managed accordingly by their treating physicians. Statistical analysis was performed by the Statistical Package for Social Science. Nominal Data were expressed as frequency and relative frequencies (percentage). Ultrasound and Mammography categorical results were compared using the Pearson Chi Square and Fisher's exact test. Patients were classified into three groups; infectious, noninfectious and malignant mastitis. Simple and malignant forms of mastitis showed many signs in common. The presence of ill defined collections and abscess cavities on ultrasound favored simple over malignant forms of mastitis while extensive skin thickening and infiltrated malignant nodes favored malignant forms. Interstitial edema, edematous fat lobules, abscess cavities, skin thickening seen on ultrasound examination were significantly lower in noninfectious than simple and malignant mastitis. Mammography signs were less discriminating. Diffuse skin thickening and increased density favored malignant mastitis while dilated retro areolar ducts and characteristic calcification patterns favored noninfectious forms. Simple mastitis showed nonspecific signs. Ultrasound examination in mastitis cases shows more specific signs in differentiating between the three forms of mastitis and is useful in monitoring treatment, excluding complications and guide for interventional procedures.

Mammography should be performed whenever complicated, malignant and uncommon forms of mastitis are suspected.

Keywords:

Breast abscess; Breast tuberculosis; Duct ectasia; Granulomatous mastitis; Inflammatory carcinoma; Mastitis; plasma cell mastitis.

Faculty of Medicine

Dept. : Physiology

Name : Moshira A. Rateb



Title : Evaluation of the Effect of Oxidative Stress and Vitamin E Supplementation on Renal Function in Rats With Streptozotocin-Induced Type 1 diabetes

Authors : M. A. Haidara, D. P. Mikhailidis, M. A. Rateb, Z. A. Ahmed, H. Z. Yassin, I. M. Ibrahim and L. A. Rashed

Published In : Diabetes and Its Complications

ISSN : 1056-8727

Impact Factor : 2.008

Abstract :

We investigated the possible role of reactive oxygen species (ROS) on renal function in experimental diabetes. Materials and Methods: Seven groups of male rats were studied. Group I consisted of control animals. Diabetes was induced (by streptozotocin) in the animals in the other groups and they received either insulin or vitamin E (300 or 600 mg/kg), both insulin and vitamin E, or no treatment for 4 weeks. At the end of the study, blood pressure was measured and parameters of kidney function and oxidative stress were evaluated in serum and kidney tissue samples. Results: Diabetic animals had higher blood pressures; increased serum glucose, urea, creatinine, cyclic guanosine monophosphate (cGMP); increased kidney tissue levels of malondialdehyde and inducible nitric oxide synthetase (iNOS); and reduced serum glutathione peroxidase when compared with control animals. Blood glucose levels in diabetic animals were controlled by insulin and not by any dose of vitamin E alone. However, all other measured parameters improved towards control levels with either insulin or vitamin E in either dose. An additive beneficial effect was observed on the levels of iNOS and cGMP when both forms of treatment were used in diabetic animals. Conclusions: We conclude that ROS may play an important role in diabetes-induced nephropathy in this rat model. Vitamin E supplementation in addition to insulin can have additive protective effects against deterioration of renal function in this model.

Keywords:

Diabetes; Renal function; Oxidative stress; Antioxidants; Vitamin E

Faculty of Medicine

Dept. : Radiology

Name : Noha Hossam EL Din Behairy



Title : Cardiac echinococcosis of the interventricular septum in early childhood: Report of two cases

Authors : T. Mohsen ,Noha H Behairy, T. Mohsen,, T. Maree and E. S. Akl,

Published In : Thoracic and Cardiovascular Surgery

ISSN : 0022-5223

Impact Factor : 3.354

Abstract :

Echinococcosis has a low endemicity in Egypt. However, in some governorates it presents a public health concern with an incidence ranging from 0.8 to 2.6 per 100,000.1We present 2 cases of hydatid cysts of the interventricular septum in early childhood. we used standard median sternotomy with cardiopulmonary bypass. The septum was reached through the tricuspid valve and initially the content was aspirated and a crystal rock fluid was obtained.

Keywords :

Echinococcosis; Cardiac; Hydatid cyst.

Faculty of Medicine

Dept. : Radiology

Name : Noha Hossam EL Din Behairy



Title : Magnetic resonance imaging in fetal anomalies: What does it add to 3D and 4D US?

Authors : Noha H Behairy, Soha Talaat, Sahar N Saleem and Maged Abd EL Raof

Published In : Eurpean Journal of Radiology

ISSN : 0720-048X

Impact Factor : 2.339

Abstract :

The objective of our study is to evaluate the contribution of adding MRI findings to sonographic data when assessing fetal anomalies and to determine how this addition may affect the management of pregnancy .

We prospectively examined 26 fetuses who had sonographically suspected congenital anomalies over a period of one year. 2D/3D and 4D ultrasound, Doppler and Magnetic resonant imaging was done for all patients. MRI was done within one week following US examination. The maternal age range was 18-39 years. The gestational age range was 15-38 weeks (mean age =29weeks). Ultrasound and magnetic resonance findings were compared together.

We reported different types of congenital anomalies including: eight cases of isolated central nervous system anomalies, four abdominal, five musculoskeletal anomalies, seven cases of renal anomalies and two cases of Meckel Gruber syndrome. MRI and sonography showed concordant findings in 18 cases. MRI changed the diagnosis in five cases and provided additional information in three cases. Ultrasound was superior to magnetic resonance imaging in 3 cases.

Our results showed that fetal MR imaging can be used as a complementary modality to US in diagnosing fetal abnormality in which US findings are inconclusive or equivocal .

Keywords:

Magnetic resonance imaging; Fetal; Anomalies; Central nervous system; 2/3D Ultrasound.

Faculty of Medicine**Dept.** : Physiology**Name** : **Heba M. Shawky****Title** : The Effect of Memantine and Levodopa / Carbidopa on the Responses of Phrenic Nerve-Diaphragm Preparation from Aged Rats**Authors** : S. A. El-Moursy, H. M. Shawky, Z. Abdel Wahab and L. Rashed**Published In** : Med Sci Monitor**ISSN** : 1234-1010**Impact Factor** : 1.514**Abstract** :

Background: Alzheimer's dementia (AD) and Parkinsonism are common in geriatric patients. Skeletal muscles are important for proper function of aging animals and humans. This study focuses on the influence of memantine (used in moderate to server AD) and levodopa/ carbidopa (LD/CD) (a cornerstone of Parkinson's disease treatment on responses of isolated phrenic nerve-diaphragms (IPNDs) of aged male rats. Material/Methods: Of 100 aged male albino rats, 20 were untreated to study the in vitro effects of memantine and LD/CD on IPNDs and 80 were divided into groups 1 (control), 2 (oral memantine, 1.5 mg/kg/d), 3 (twice daily intraperitoneal LD/CD, 25/2.5 mg/kg) and 4 (both drugs). After three weeks-treatment the animals were sacrificed. Ten rats from each group were used to harvest IPNDs to study the effect of gallamine and 10 rats to measure nAChR (nicotinic acetylcholine receptor) alpha subunit mRNA by PCR. Results: The heights of indirectly elicited contractions were 63.1 ± 4.6 , 6 , 41.5 ± 4.5 , 70.6 ± 4.7 and 53.9 ± 3.3 mm for groups 1-4, respectively and all differences were statistically significant ($p < 0.05$). Memantine caused a leftward shift of the gallamine concentration-response curve and LD/CD a rightward shift, Reversal of neuromuscular block required larger nesotigmine concentrations in the memantine group and smaller concentrations in the LD/CD group. In vitro, memantine inhibited diaphragmatic responses to indirect stimulation. Values of nAChR alpha subunit mRNA ($\mu\text{g}/\text{dl}$) were 0.7 ± 0.16 (control), 0.13 ± 0.11 (memantine), 2.3 ± 0.94 (LD/CD) and 1.18 ± 0.71 (both drugs) ($p < 0.05$). Conclusions: Memantine inhibits neuromuscular transmission in vitro and with in vivo treatment. LD/CD treatment enhances neuromuscular transmission. Clinical implications need further investigation.

Keywords :

Alzheimer's dementia; Parkinsonism; Levodopa; Carbidopa; Memantine; Neuromuscular junction; Nicotinic acetylcholine receptors; NMDA.

Faculty of Medicine

Dept. : Rheumatology and Rehabilitation

Name : **Iman H. Bassyouni**



Title : Clinical Significance of Anti-Cyclic Citrullinated Peptide Antibodies in Egyptian Patients with Chronic Hepatitis C Virus Genotype IV Infection

Authors : Iman H. Bassyouni, Yasser Ezzat, Sherif Hamdy and Roba M. Talaat

Published In : Clinical Chemical Laboratory Medicine

ISSN : 1434-6621

Impact Factor : 1.888

Abstract :

Background: Symmetric polyarthritis associated with HCV infection frequently displays rheumatoid arthritis (RA)-like clinical picture. Antibodies to cyclic citrullinated peptide (CCP) have high specificity in the diagnosis of RA. This study aimed to examine the frequency and clinical significance of anti-CCP antibodies in patients with chronic HCV infection with and without manifestations of joint involvement compared to RA patients. Methods: Serum anti-CCP antibodies and rheumatoid factor (RF) were evaluated in 30 patients with RA, 47 patients with chronic HCV infection (20 patients with chronic HCV infection and associated with articular involvement and 27 patients with chronic HCV infection without any articular involvement). Results: Anti-CCP was positive in 70% of RA patients, 8.5% of HCV-infected patients and 20 % in those HCV patients with articular manifestations. RF was positive in 76% of RA patients and 60% of HCV-patients with articular involvement. Cryoglobulins were found in 29% of HCV-infected patients and 16% of RA-patients. However it is not statistically significant, cryoglobulins were more frequent among HCV-patients with (35%) than HCV-patients without articular affection (26%).

Conclusion: Although anti-CCP antibodies remain a useful diagnostic tool for RA, their interpretation in HCV-infected patients with arthritis should be applied with some caution. The possibility that those patients could be prone to develop RA can't be ruled out. Those patients need a cautious clinical and radiological follow up; further large scale studies are warranted .

Keywords :

Anti-CCP; Cryoglobulins; HCV; Rheumatoid arthritis; Rheumatoid factor.

Faculty of Medicine

Dept. : Rheumatology and Rehabilitation

Name : Tamer A. Gheita



Title : Musculoskeletal Manifestations in Patients With Malignant Disease

Authors : Gheita T. A., Ezzat Y., Sayed S., El-Mardenly G. and Hammam W.

Published In : Clin Rheumatol

ISSN : 0770-3198

Impact Factor : 1.7

Abstract :

To detect and describe the incidence of musculoskeletal manifestations in different malignant diseases as well as their relation to the treatment received whether by chemotherapy or radiation therapy. Sixty patients with different malignant diseases were included in this study, 45 with solid tumors and 15 patients with hematological malignancy. The mean age was 46.55 +/- 11.04 years and the mean disease duration was 2 +/- 0.75 years. The patients were fully examined for any rheumatologic involvement, laboratory investigations were performed as well as dual energy X-ray absorptiometry study for bone densitometry. Treatment strategies were assessed including the chemotherapeutics, radiation therapy and/or surgery. Myalgias and arthralgias were the most frequent followed by flexor tenosynovitis, frozen shoulder and fibromyalgia syndrome. Hypertrophic osteoarthropathy was seen in five patients, cutaneous vasculitis in two patients as well as arthritis. Osteonecrosis was present in one of the lunate carpal bones of a patient with non-Hodgkin's lymphoma (1.67%) and receiving high dose steroids. Rheumatoid factor was positive in four patients, three of which had hepatitis C virus positivity and cryoglobulins. Anti-neutrophil cytoplasmic antibody was negative in all the studied patients. The bone mineral density was significantly reduced in the patients with malignancy compared to the control. Mild to moderate osteoporosis was present, being more evident in the spine and forearm. The bone loss was higher in those with solid tumors and even more obvious in those receiving aromatase inhibitors. Musculoskeletal manifestations occurring during malignancies and following the treatment represent a significant percentage of symptoms and signs which may raise a clue to differential diagnosis.

Keywords :

Musculoskeletal manifestations; Malignancy; Aromatase inhibitors; Osteoporosis.

Faculty of Medicine

Dept. : Rheumatology and Rehabilitation

Name : Noha Ahmed Azab



Title : A Case of Schwartz–Jampel Syndrome With Cleft Palate

Authors : Mosaad Abdel-Aziz

Published In : Pediatric Otorhinolaryngology

ISSN : 0165-5876

Impact Factor : 1.118

Abstract :

Schwartz–Jampel syndrome is a rare inherited autosomal recessive disorder characterized by generalized myotonia, joint contractures, skeletal abnormalities and facial dysmorphism. The gene defect involves the 1p34–p36.1 region of chromosome 1. Also, one of the candidate genes for orofacial clefting is the 1p36 region. Cleft palate is the most common congenital anomaly in the head and neck. Despite both diseases share a genetic defect in chromosome 1p36 region, the association of both conditions has not yet been investigated. Feeding problems due to the presence of the cleft may add to the growth retardation that is already present in those patients, so palatoplasty is mandatory.

We described a case of Schwartz–Jampel syndrome with cleft palate.

Keywords:

Schwartz–Jampel syndrome; Chondrodystrophic myotonia; Cleft palate; Palatoplasty.

Faculty of Medicine

Dept. : Surgery

Name : **Ahmed M. Hashem**



Title : Use of the 5-Flap Z Plasty in Digital Flexion Contractures

Authors : Hashem A. M.

Published In : Annals of Plastic Surgery

ISSN : 0148-7043

Impact Factor : 1.14

Abstract :

The purpose of this article is to report the use of the 5-flap Z plasty in the management of long-standing flexion contractures of the proximal interphalangeal joint of the digits (the 5-flap Z plasty has been originally described by Hirschowitz et al for the lengthening of thumb web contractures). Nine fingers in 5 patients with Stern grade I and II contractures of the proximal interphalangeal joint were included. The defect following release of the contracture was covered with the 5-flap Z plasty and Kirschner wires temporarily maintained the corrected position. The extension lag was measured preoperatively and postoperatively. The preoperative extension lag ranged from 20 to 60 degrees (mean: 43.3 degrees). The improvement in extension lag ranged from 15 to 60 degrees (mean: 40.5 degrees). Minimal complications were encountered. The technique described is useful in the management of Stern grade I and II digital contracture.

Keywords :

five-flap Z plasty; PIP joint contracture; Digital flexion; Contractures; Stern I and II.

Faculty of Medicine

Dept. : Urology

Name : Ahmed M. Sobhy El-Feel



Title : Laparoscopic Augmentation Ileocystoplasty: Results and Outcome

Authors : Ahmed El-Feel, Mahmoud A. Abdel-Hakim, Hazem Abouel-Fettouh and Amr M. Abdel-Hakim

Published In : European Urology

ISSN : 0302-2838

Impact Factor : 6.512

Abstract :

Background: Routine use of laparoscopic augmentation ileocystoplasty has not yet been established.

Objectives: To assess the outcome of laparoscopic augmentation ileocystoplasty.

Design, Setting and Participants: Twenty-three patients underwent laparoscopic augmentation ileocystoplasty for hypocompliant bladder.

Intervention: Bladder dissection and reconstruction of the ileovesical anastomosis were performed laparoscopically, whereas the ileal pouch was prepared extracorporeally through a small 3- to 4-cm muscle-splitting incision.

Measurements: Patient data, operative details and follow-up were recorded. Urodynamic evaluation was performed preoperatively and after 12 mo, taking the bladder capacity and the maximum detrusor pressure as a measure for the outcome of the procedure.

Results and Limitations: All cases were completed laparoscopically, with a mean operative time 202 min; mean hospital stay 5 d and mean urethral catheter duration 11 d. After 12 mo, the estimated bladder volume increased from a mean 111 ml to 788 ml ($p < 0.01$), whereas the maximum detrusor pressure dropped from a mean 92 cm H₂O to 15 cm H₂O ($p < 0.01$). During a mean follow-up of 39 mo, two long-term complications have been reported: bladder stone and spontaneous rupture of the augmented bladder due to neglected clean intermittent self catheterization.

Conclusions: Laparoscopic augmentation ileocystoplasty is a safe procedure, technically feasible and with favorable urodynamic outcome.

Keywords :

Augmentation; Bladder; Ileocystoplasty; Laparoscopy.

Faculty of Medicine**Dept. :** Urology**Name :** Ahmed Mahmoud Shouman**Title :** Extracorporeal Shock Wave Lithotripsy Monotherapy for Renal Stones > 25mm in Children**Authors :** Ahmed M. Shouman, Ali M. Ziada, Islam A. Ghoneim and Hani A. Morsi**Published In :** Urology**ISSN :** 00 - 00**Impact Factor :** 0.0**Abstract :**

Objectives: To determine the safety and efficacy of extracorporeal shock wave lithotripsy (ESWL) as monotherapy for renal stones >25 mm in children.

Methods: Our prospective study included 24 children <14 years old with radiopaque renal stones >25 mm treated by ESWL as first-line treatment using the electromagnetic Dornier DoLi S device. Pretreatment kidney, ureter and bladder plain films and intravenous urography and post-treatment ultrasonography and kidney, ureter and bladder plain films were used to monitor the clearance of fragments. Stone clearance was assessed at 1 and 3 months. A stone-free state was defined as no radiologic evidence of stone. Asymptomatic noninfectious and nonobstructive fragments <3 mm were considered insignificant.

Results: The 24 children, aged 2-14 years (mean 7) underwent 53 ESWL sessions. Of the 24 children, 10 had stones located in the left kidney and 14 had stones located in the right kidney. The stone size was 25-35 mm (average 31). The average number of shock waves was 3489 per session. All children underwent lithotripsy with a gradual incremental energy increase from 14 to 20 kV. The overall stone-free rate was 83.3%. Four patients had clinically insignificant fragments and were followed up for the possibility of stone regrowth, microscopic hematuria and urinary tract infection. Complications affected 25% of patients.

Conclusions: ESWL is highly effective for treatment of large renal stones in children as a first-line treatment with minimal morbidity. The placement of a stent is not a prerequisite for success of treatment.

Keywords :

ESWL; Renal stones; Children.

Faculty of Medicine

Dept. : Urology

Name : **Ahmed Mahmoud Shouman**



Title : Safety of Ungated Shock Wave Lithoripsy in Pediatric Patients

Authors : Ahmed M. Shouman, Islam A. Ghoneim, Ali M. Ziada and Ahmed ElShenoufy

Published In : Pediatric Urology

ISSN : 00 - 00

Impact Factor : 0.0

Abstract :

Objective: Ungated extracorporeal shockwave lithotripsy (ESWL) in adults is associated with cardiac arrhythmias. We report on the safety and efficacy of this method for treatment of renal calculi in children.

Patients and methods: Children under 14 years with radio-opaque renal stones were treated by ungated ESWL. Pre-treatment plain radiographs and intravenous urography and post-treatment ultrasonography and plain films were used to follow up clearance of fragments. All children were monitored for arrhythmias.

Results: Thirty-seven children (28 males, nine females) with a median age of 5 years (range 2 e14 years) underwent 69 ungated ESWL sessions for renal calculi. Nineteen children had stones located in the left kidney, 17 had stones located in the right kidney and one child had bilateral renal stones. The stone size ranged from 6 to 25 mm (mean 9.9 mm). Shockwave number ranged from 800 to 3650 (mean of 2500 shockwaves per session). All children underwent lithotripsy with a gradual incremental energy increase from 14 to 20 kV. No patient had cardiac arrhythmias or other intra-procedural complications. No patient required conversion to gated ESWL. The overall stone-free rate was 86%.

Conclusion: The results suggest that ungated ESWL is safe in children under 14 years. The efficacy was comparable to that of gated ESWL from previously published series.

Keywords :

ESWL; Pediatric; Ungated.

Faculty of Medicine**Dept.** : Urology**Name** : **Ismail Rady Saad****Title** : Age, Tumor Size and Relative Survival of Patients With Localized Renal Cell Carcinoma: A Surveillance, Epidemiology and End Results Analysis**Authors** : Benjamin J. Scoll, Yu-Ning Wong, Brian L. Egleston, David A. Kunkle, Ismail R. Saad and Robert G. Uzzo**Published In** : Urology**ISSN** : 0022-5347**Impact Factor** : 3.952**Abstract** :

Purpose—Recent data demonstrate that age may be a significant independent prognostic variable following treatment for renal cell carcinoma. We analyzed data from the SEER (Surveillance, Epidemiology and End Results) database to evaluate the relative survival of patients treated surgically for localized renal cell carcinoma as related to tumor size and patient age. Materials and Methods—Patients in the SEER database with localized renal cell carcinoma were stratified into cohorts by age and tumor size. Three and 5-year relative survival, the ratio of observed survival in the cancer population to the expected survival of an age, sex and race matched cancerfree population, was calculated with SEER-Stat. Brown's method was used for hypothesis testing. Results—A total of 8,578 patients with surgically treated, localized renal cell carcinoma were identified. While 3 and 5-year survival for patients with small (less than 4 cm) renal cell carcinoma was no different from that of matched cancer-free controls, patients treated for large (greater than 7 cm) localized renal cell carcinoma experienced decreased 5-year relative survival across all age groups. Therefore, age was not a significant predictor of relative survival for patients with small (less than 4 cm) or large (greater than 7 cm) tumors. However, a statistically significant trend toward lower relative survival with increasing age was demonstrated in patients with medium size tumors (4 to 7 cm). Hypothesis testing confirmed these findings. Conclusions—These data suggest that relative survival is high in patients with tumors less than 4 cm and lower in patients with tumors larger than 7 cm regardless of age. However, increasing age may be related to worse outcomes in patients with tumors 4 to 7 cm. The cause of this observation warrants further investigation.

Keywords:

Kidney neoplasms; Mortality.

Faculty of Medicine

Dept. : urology

Name : Hosni Khairy



Title : Preserved Testicular Artery at Varicocele Repair

Authors : H. K. Salem and T. Mostafa

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.30

Abstract :

Whether or not varicocele causes infertility is a contentiously debated issue. This study aimed to compare semen parameters and pregnancy rate in infertile males who underwent varicocelectomy with preserved or accidentally ligated testicular artery. Ninety-five infertile oligoasthenozoospermic patients with left-sided varicocele were subjected to subinguinal varicocelectomy with trial of preserving testicular artery. According to absence or presence of testicular artery in the histological excised pedicle the cases were divided into two groups; group 1 (n = 60) with preserved testicular artery and group 2 (n = 35) where the artery was accidentally ligated being not defined or injured. Semen analysis was carried out after 4, 8 and 12 months and post-operative pregnancy rate was assessed after 1 year. Serum follicle-stimulating hormone (FSH), luteinising hormone (LH) and total testosterone (T) were estimated pre- and post-operatively. Semen parameters (total sperm count, sperm concentration and sperm motility) showed significant increase post-operatively compared with pre-operative parameters but were comparable in both groups with no significant difference. Serum FSH, LH, T hormones and pregnancy rate (23.3% versus 22.9%) 1 year post-operatively showed no significant difference. It is concluded that accidental ligation of testicular artery has no deleterious effect on semen parameters during primary varicocele repair if the testicular arterial supply was not compromised.

Keywords:

Amputation; Microsurgery; Penis reconstruction; Trauma.

Faculty of Medicine

Dept. : Urology

Name : Hosni Khairy



Title : Primary Anastomosis of the Traumatically Amputated Penis

Authors : H. K. Salem and T. Mostafa

Published In : Andrologia

ISSN : 0303-4569

Impact Factor : 1.30

Abstract :

Penile amputation is an uncommon condition for which immediate surgical replantation is warranted. This work aimed to represent intervention and management for an amputated penis by replantation and reconstruction.

A 23-year-old man presented with traumatic penile amputation for 2 h where the penile proximal part was 1 cm far from the pubis. Replantation included end-to-end anastomosis of the urethral mucosa over a catheter, approximation of the corpus cavernosum and tunica albuginea, anastomosis of the deep dorsal vein, dorsal nerve, both dorsal arteries and superficial dorsal vein. At day 5 post-operatively, the replanted penis had preserved capillary filling. The catheter was removed at day 11, where the patient urinated smoothly. The preliminary cosmetic appearance was satisfactory with frequent morning erection, reported night emission twice within the first month post-operatively.

Sensation was preserved in the distal anastomosed stump. It is concluded that meticulous microsurgical technique decreases the possibility of skin loss and increases the chance of erectile function.

Keywords :

Amputation; Microsurgery; Penis reconstruction; Trauma.

Faculty of Medicine**Dept.** : urology**Name** : **Hosni Khairy****Title** : A Prospective Randomized Study Comparing Shock Wave Lithotripsy and Semirigid Ureteroscopy for the Management of Proximal Ureteral Calculi**Authors** : Hosni K. Salem**Published In** : Urology**ISSN** : 0000-00**Impact Factor** : 0.00**Abstract** :

To conduct a prospective randomized study comparing both techniques for the management of solitary radio-opaque upper ureteral stones < 2 cm in diameter. The ideal treatment for upper ureteral stones > 1 cm size remains to be determined with shock wave lithotripsy (SWL) and ureteroscopy (URS) being acceptable options.

Methods: A total of 200 patients were included in the study. They were randomized into 2 equal groups. Group A underwent in situ SWL as a primary therapy. Group B underwent URS, using semirigid URS with intracorporeal lithotripsy. Efficiency quotient (EQ), cost analysis and predictors of failure were estimated for both techniques.

Results: For stones of size ≥ 1 cm, the initial stone-free rate for URS and SWL was 88% and 60%, respectively. The estimated EQ was 0.79 and 0.43 for both techniques respectively. For stones <1 cm, the initial stone-free rate for URS and SWL was 100% and 80%, respectively. The estimated EQ was 0.88 and 0.70 for both techniques, respectively. The mean cumulative costs were significantly more in SWL group ($P < .05$). Predictors of URS failure included; male gender,

failure to pass guidewire beyond the stone and extravasation. Predictors of SWL failure included large stone size > 1 cm, calcium oxalate monohydrate stone and higher degrees of hydronephrosis.

Conclusions: URS with intracorporeal lithotripsy is an acceptable treatment modality for all proximal ureteral calculi, particularly stones > 1 cm. SWL should remain the first-line therapy for proximal ureteral calculi ≤ 1 cm because of the less invasive nature and lower anesthesia

Faculty of Pharmacy

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Samah Sayed Abbas**



Title : Thiopental and Phenytoin as Novel Ionophores for Potentiometric Determination of Lead (II) Ions

Authors : N. M. Rizk, S. S. Abbas, S. M. Hamza and Y. M. Abd El-Karem

Published In : Sensors

ISSN : 1424-8220

Impact Factor : 1.537

Abstract :

Two novel polymeric membrane sensors for the analysis of Pb (II) have been developed based on two therapeutic drugs, thiopental (TP) and phenytoin (PT) as two new ionophores and potassium tetrakis (p-chlorophenyl) borate (KTPCIPB) as a lipophilic additive, in plasticized PVC membranes. The sensors show a Nernstian response for Pb (II) ions over the wide concentration ranges of 1×10^{-2} – 7×10^{-6} M and 1×10^{-2} – 8×10^{-6} M for the sensors based on thiopental and phenytoin, respectively. The proposed sensors have a fast response time can be used for more than nine weeks without any considerable divergence in potentials. The sensors exhibit comparatively good selectivity with respect to alkaline, alkaline earth and some transition and heavy metal ions. They were employed for direct determination of lead in solder alloys and in galena rocks with a good agreement with the obtained results by atomic absorption spectroscopy.

Keywords :

Lead (II); Thiopental; Phenytoin; Galena rocks; Solder alloys.

Faculty of Pharmacy**Dept.** : Analytical Chemistry**Name** : **Samah Sayed Abbas****Title** : Novel Ionophore for the Potentiometric Determination of Cetirizine Hydrochloride in Pharmaceutical Formulation and Human Urine**Authors** : N. M. H. Rizk, S. S. Abbas, F. A. El-Sayed and A. Abo-Bakr**Published In** : Int. J. Electrochem. Sci., 4 (2009) 396 - 406**ISSN** : 1452-3981**Impact Factor** : 0.0**Abstract** :

Cetirizine (CT) membrane sensors of conventional (CE) and carbon paste (CPE) have been prepared, based on β -cyclodextrin (β CD) as ionophore and potassium tetrakis [3,5-bis(trifluoro-methyl) phenyl] borate (KTFPB) as anionic membrane additive. The sensors exhibit a linear response with a mean calibration graph slopes of 60.2 and 57.4 mV per decade at 25°C for conventional and carbon paste electrodes, respectively, with the concentration ranges 1×10^{-1} - 5×10^{-6} M for conventional and 1×10^{-1} - 7×10^{-6} M for carbon paste. The electrodes fully characterized in terms of composition, usable pH range, life span and response time. The electrodes showed a very good selectivity for CT with respect to some inorganic and organic cations and other related compounds. Use of the sensors for the assay of formulation of CT drug and in spiked human urine, show a mean average recovery of 100.04 % and a mean precision of ± 0.4 . Significantly improved response time, stability, selectivity, accuracy, simple and low cost are offered by potentiometric sensors compared with other standard methods.

Keywords :

Cetirizine; Sensors; Potentiometry; β -cyclodextrin; Carbon paste electrodes; Human urine; Pharmaceutical formulation.

Faculty of Pharmacy**Dept.** : Analytical Chemistry**Name** : **Ali M. A. Yehia****Title** : Simultaneous Determination of Metformin Hydrochloride and Pioglitazone Hydrochloride in Binary Mixture and in their Ternary Mixture with Pioglitazone Acid Degradate Using Spectrophotometric and Chemometric Methods**Authors** : M. A. Hegazy, M. R. El-Ghobashy, A. M. Yehia and A. A. Mostafa**Published In** : Drug Testing and Analysis**ISSN** : 1942-7603**Impact Factor** : 0.0**Abstract** :

In this work two well known oral hypoglycemic drugs that are administered in combination for patients with type-II diabetes were simultaneously determined. Several spectrophotometric methods were developed and validated for the determination of metformin hydrochloride (MET), pioglitazone hydrochloride (PIO) and pioglitazone acid degradate (PIO Deg). Derivative, ratio derivative, isosbestic and chemometric-assisted spectrophotometric methods were developed. The first derivative (D1) method was used for the determination of MET in the range of 5–30 $\mu\text{g}\cdot\text{mL}^{-1}$ and PIO in the range of 10–90 $\mu\text{g}\cdot\text{mL}^{-1}$ by measuring the peak amplitude at 247 nm and 280 nm, respectively. The concentration of PIO was calculated directly at 268 nm. The first derivative of ratio spectra (DD1) method used the peak amplitudes at 238 nm and 248.6 nm for the determination of MET in the range of 5–30 $\mu\text{g}\cdot\text{mL}^{-1}$. In the isosbestic point method (ISO), the total mixture concentration was calculated by measuring the absorbance at 254.6 nm. Classical least squares (CLS), principal component regression (PCR) and partial least squares (PLS-2) were used for the quantitative determination of MET, PIO and PIO Deg. The methods developed have the advantage of simultaneous determination of the cited components without any pre-treatment. Resolution and quantitative determination of PIO degradate with a minimum concentration of 3 $\mu\text{g}\cdot\text{mL}^{-1}$ in drug samples was done. The proposed methods were successfully used to determine each drug and the acid degradate in a laboratory-prepared mixture and pharmaceutical preparations. The results were statistically compared using one-way analysis of variance (ANOVA). The methods developed were satisfactorily applied to the analysis of the two drugs in pharmaceutical formulations.

Keywords :

Metformin hydrochloride; Multivariate analysis; Pioglitazone hydrochloride; Spectrophotometry.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Ali M. A. Yehia**



Title : Application of Membrane Selective Electrodes for the Determination of Pioglitazone Hydrochloride in Presence of Either Its Acid Degradate or Metformin Hydrochloride in Tablets and Plasma

Authors : M. R. El-Ghobashy, A. M. Yehia and A. A. Mostafa

Published In : Analytical Letters

ISSN : 0003-2719

Impact Factor : 1.281

Abstract :

Polyvinyl chloride (PVC) membrane sensors for the determination of pioglitazone hydrochloride (PIO) and metformin hydrochloride (MET) were described by using the ion association complexes between these drugs with either sodium tetraphenyl-borate (TPB) or ammonium reineckate (RNC) counter ions. The performance characteristics of the sensors were evaluated according to IUPAC recommendations, reveal a fast, stable and linear response over the concentration range 3.162×10^{-5} - 1×10^{-2} M for PIO and 1×10^{-3} - 1×10^{-1} M for MET. The sensors are used for determination of PIO and MET in tablets and plasma. The developed method was found to be simple, accurate and precise when compared with the reported method.

Keywords :

Pioglitazone hydrochloride; Metformin hydrochloride; Ion selective electrode; PVC membranes; Sodium tetraphenyl-borate; Ammonium reineckate.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Amr M. M. Badawey**



Title : Development and Validation of Stability-Indicating High Performance Liquid Chromatographic (HPLC) and DD1-Spectrophotometric Assays for Etodolac in Bulk Form and in Pharmaceutical Dosage Form

Authors : O. A. Saleh, A. A. EL-Azzouny, H. Y. Aboul-Enein and A. M. Badawey

Published In : Liquid Chromatography and Related Technologies

ISSN : 1082-6076

Impact Factor : 1.026

Abstract :

A stability-indicating reversed phase high performance liquid chromatographic assay procedure has been developed and validated for etodolac. The liquid chromatographic separation was achieved isocratically on C18 Zorbax ODS using a mobile phase containing methanol: water: acetic acid (70:30:0.1%, v/v/v), at a flow rate 1mL/min and UV detection at 254 nm. The method was linear over the concentration range of 2.4–16 mg/mL ($r=0.9999$) with a limit of detection and quantization of 0.03 and 0.10 mg/mL, respectively. Another method was applied for the determination of etodolac in the presence of its degraded products using the first derivative ratio spectrophotometry (DD1) at 293nm using 1000 μg of degraded etodolac as a divisor. The method was linear over the concentration range of 10–50 $\mu\text{g/mL}$ ($r=0.9999$). Both methods have been found to have the required accuracy, selectivity, sensitivity and precision to assay etodolac in bulk form and in pharmaceutical dosage form. Degradation products resulting from the stress studies did not interfere with the detection of etodolac, which indicates that the assays are stability-indicating assays.

Keywords :

Etodolac; HPLC and DD1-Spectrophotometry; Stability-indicating.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Amr M. M. Badawey**



Title : A Validated HPLC Method for Separation and Determination of Promethazine Enantiomers in Pharmaceutical Formulations

Authors : O. A. Saleh, A. A. EL-Azzouny, H. Y. Aboul-Enein and A. M. Badawey

Published In : Drug Development and Industrial Pharmac

ISSN : 0363-9045

Impact Factor : 1.049

Abstract :

A simple, rapid and validated method for separation and determination of promethazine enantiomers was developed. Promethazine was separated and quantified on a Vancomycin Chirobiotic V column (250x4.6 nm), using a mixture of methanol, acetic acid and triethylamine (100:0.1:0.1%, by volume) as a mobile phase at 20°C and at a flow rate of 1 mL/min. The UV-detector was set to 254 nm. Acetyl salicylic acid (aspirin) was used as an internal standard. The applied HPLC method allowed separation and quantification of promethazine enantiomers with good linearity. ($r > 0.999$) in the studied range. The relative standard deviations (RSD) were 0.29 and 0.36 for the promethazine enantiomers with accuracy of 100.06 and 100.08. The limit of detection and limit of quantification of promethazine enantiomers were found to be 0.04 and 0.07 µg/mL, respectively. The method was validated through the parameters of linearity, accuracy, precision and robustness. The HPLC method was applied for the quantitative determination of promethazine in pharmaceutical formulations.

Keywords :

Chiral separation; Macrocylic; Glycopeptide antibiotic stationary phase; Vancomycin; Promethazine; Pharmaceutical analysis.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Maissa Yacoub Salem**



Title : Validated Stability-Indicating Chromatographic Methods for the Determination of Veralipride in Presence of Its Degradation Products

Authors : M. Y. Salem, N. Nour El Din, L. M. Abd El Halim and L. E. Abdel Fattah

Published In : Chromatographia

ISSN : 0009-5893

Impact Factor : 1.312

Abstract :

Two sensitive and selective chromatographic methods were developed and validated for determination of veralipride in presence of its degradation products. Forced degradation studies were performed, using HCl, NaOH and 3% H₂O₂. The first method is based on thin layer chromatographic separation of the intact drug spot from its degradation, followed by densitometric measurements. The second method is based on isocratic liquid chromatographic separation of the studied drug from its degradation on a reversed phase C18 column. The proposed LC method was utilized to investigate the kinetics of alkaline degradation process of the selected drug at different temperatures.

Keywords :

Thin layer chromatography; Column liquid chromatography; Stability studies; Veralipride.

Faculty of Pharmacy**Dept.** : Analytical Chemistry**Name** : **Mohamed K. Abd El Rahman****Title** : Membrane Electrodes for the Determination of Pyridostigmine Bromide**Authors** : A. M. El-Kosasy, M. Y. Salem, M. G. El-Bardicy and M. K. Abd El-Rahman**Published In** : J. AOAC**ISSN** : 1060-3271**Impact Factor** : 1.549**Abstract** :

Two pyridostigmine bromide (PB) selective electrodes were investigated with 2-nitrophenyl octyl ether as plasticizer in a polymeric matrix of carboxylated polyvinyl chloride, based on the interaction between the drug solution and the dissociated COOH groups in the (PVC-COOH). One of the sensors was fabricated by using PVC carboxylate only as anionic site without incorporation of ionophore (sensor 1). The second sensor was constructed by using 2-hydroxy propyl β -cyclodextrin as ionophore (sensor 2). Linear responses of PB within a concentration range of 10^{-3} – 10^{-2} and 10^{-5} – 10^{-2} M, with slopes of 51.9 ± 0.31 and 56.7 ± 0.40 mv/decade over pH range of 5-10 were obtained by using sensor 1 and 2, respectively. The proposed method display useful analytical characteristics for determination of PB in tablets with average recoveries of 100.22 ± 0.62 , 100.15 ± 0.72 and in plasma with average recoveries of 99.14 ± 1.19 , 99.79 ± 0.72 , for sensor 2 and 1, respectively. The utility of 2-hydroxy propyl β -cyclodextrin as ionophore has a significant influence on increasing both membrane sensitivity and selectivity of sensor 2 in comparison with sensor 1. The methods were also used to determine the intact drug in the presence of its degradate and thus could be used as stability indicating method. The results obtained by the proposed procedures were statistically analyzed and compared with those obtained by the U.S pharmacopeial method. No significant difference for both accuracy and precision was observed.

Keywords :

Pyridostigmine bromide; Potentiometry; Carboxylated polyvinyl chloride; 2-hydroxy propyl β -cyclodextrin; Plasma.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Mohammad A. E. Aga**



Title : Innovating Spectrophotometric Methods for Determination of Almitrine Dismesylate and Raubasine in Duxil Tablets.

Authors : Mohammad A. E. Aga

Published In : Analytical Letters

ISSN : 0003-2719

Impact Factor : 1.281

Abstract :

Ratio subtraction and isosbestic point are two methods used to determine a mixture of almitrine dismesylate (I) and raubasine (II). Linear correlations were obtained in the range from 4- 18 $\mu\text{g ml}^{-1}$ for (I) and 2- 16 $\mu\text{g ml}^{-1}$ for (II) with mean accuracies 99.87 ± 1.053 for (I) and 99.75 ± 1.301 for (II). (I) and (II) in their mixtures were analyzed by the two methods where the total content was determined at the isosbestic point at 214.0 nm and (II) was determined by ratio subtraction. The proposed methods were validated to be suitable for analysis of the pharmaceuticals.

Keywords :

Ratio subtraction; Isosbestic point; Almitrine dismesylate; Raubasine; Duxil.

Faculty of Pharmacy**Dept.** : Analytical Chemistry**Name** : **Medhat A. Al-Ghobashy****Title** : Probing the Interaction Between Recombinant Human Myelin Basic Protein and Caseins Using Surface Plasmon Resonance and Diffusing Wave Spectroscopy**Authors** : M. A. Al-Ghobashy, A. Cucheval, M. A. K. Williams, G. Laible and D. R. K. Harding**Published In** : J. Molecular Recognition**ISSN** : 0952-3499**Impact Factor** : 3.767**Abstract** :

An intrinsically unstructured human myelin basic protein (hMBP) was expressed in the milk of transgenic cows (TGmilk) and found exclusively associated with the casein micellar phase. The interaction between the recombinant protein and milk caseins was investigated using surface plasmon resonance (SPR). An anti-human myelin basic protein antibody was covalently immobilized to the surface of the sensor chip. Subsequently the interaction between the recombinant protein (captured by this antibody) and caseins was studied in comparison to that noted with its human counterpart. Results showed a calcium-mediated interaction between the recombinant protein and caseins. The order of magnitude of this interaction was in agreement with the number of phosphorylated residues carried by each type of casein (α_s - > β - > κ -casein). This selective interaction was not noted between the human protein and milk caseins indicating that the recombinant protein was phosphorylated to a higher extent than the human protein. The obtained results indicated that the co-expression of the recombinant protein and caseins by the mammary gland along with the recombinant protein's ability to form calcium bridges played a key role in the association of the recombinant human myelin basic protein (rhMBP) with the casein micelles of milk. Despite this association between the recombinant protein and milk caseins, light scattering investigations using diffusing wave spectroscopy (DWS) showed no significant differences between the milks of the transgenic and the non-transgenic control cows, with respect to both the average micelle size and surface charges. This was attributed to the low expression levels of the recombinant protein in milk.

Keywords :

Transgenic; Myelin basic protein; Biopharmaceuticals; Surface plasmon resonance; Casein micelles; Diffusing wave spectroscopy.

Faculty of Pharmacy**Dept.** : Analytical Chemistry**Name** : **Medhat A. Al-Ghobashy****Title** : on-Line Casein Micelle Disruption for Downstream Purification of Recombinant Human Myelin Basic Protein Produced in the Milk of Transgenic Cows**Authors** : M. A. Al-Ghobashy, M. A. K. Williams, B. Brophy, G. Laible and D. R. K. Harding**Published In** : J. Chromatography B**ISSN** : 1570-0232**Impact Factor** : 2.50**Abstract** :

Downstream purification of a model recombinant protein (human myelin basic protein) from milk of transgenic cows is described. The recombinant protein was expressed as a His tagged fusion protein in the milk of transgenic cows and was found associated with the casein micellar phase. While difficulties in obtaining good recoveries were found when employing conventional micelle disruption procedures, direct capture using the cation exchanger SP Sepharose Big Beads™ was found successful in the extraction of the recombinant protein. Early breakthrough suggested a slow release of the recombinant protein from the micelles and dictated micelle disruption in order to obtain good yields. A new approach for deconstruction of the calcium core of the casein micelles, employing the interaction between the micellar calcium and the active sites of the cation exchanger resin was developed. Milk samples were loaded to the column in aliquots with a column washing step after each aliquot. This sequential loading approach successfully liberated the recombinant protein from the micelles and was found superior to the conventional sample loading approach. It increased the recovery by more than 25%, reduced fouling due to milk components and improved the column hydrodynamic properties as compared to the conventional sample loading approach. Hardware and software modifications to the chromatography system were necessary in order to keep the whole process automated. A second purification step using a Ni²⁺ affinity column was used to isolate the recombinant protein at purity more than 90% and a recovery percentage of 78%.

Keywords :

Transgenic Milk; Myelin basic protein; Biopharmaceuticals; Casein micelles.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Medhat A. Al-Ghobashy**



Title : Direct Measurements of Interfacial Interactions Between Pectin and κ -casein and Implications for the Stabilisation of Calcium-Free Casein Micelle Mimics

Authors : Aurelie Cucheval, Medhat A. Al-Ghobashy, Yasin Hemar, Don Otter and Martin A. Williams

Published In : J. Colloid and Interface Science

ISSN : 0021-9797

Impact Factor : 2.443

Abstract :

Using Surface Plasmon Resonance (SPR) it has been shown that the fine structure of the anionic polysaccharide pectin strongly influences its interfacial interaction with a κ -casein layer coated onto a gold surface (via a dextran linker) in the pH range 3.5–6.8, with the highest SPR signal being observed for pectin with the lowest charge density tested (a degree of methylesterification (DM) around 90%). Furthermore, the Brownian motions of κ -casein coated polystyrene beads (used to provide calciumfree ‘model casein micelles’) were studied in pectin solutions using Diffusing Wave Spectroscopy (DWS) and microscopy and were compared with measurements made on naked beads. At every pH value studied (with the exception of 3.5), bridging of the protein-covered probe particles was observed for pectins of both DM 28 and DM 78. However, no aggregated complexes were found in these model casein micelle systems when pectin of an unusually high DM was used (90%). It was hypothesised that having a limited number of binding regions of spatially limited extent maximises the number of chains binding to the protein layer (as found with the SPR measurement), encourages the formation of loops and trains and additionally limits the potential for destabilisation via bridging.

Keywords :

Pectin; SPR; DWS; kappa-Casein coated beads; Interfacial interactions.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : Mamdouh Reda Rezk



Title : Photodegradation and Photostability-Indication of Mequitazine

Authors : E. M. Abdel-Moety, M. A. Ibrahim and M. R. Rezk

Published In : Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

ISSN : 1386-1425

Impact Factor : 1.51

Abstract :

The photochemical behavior is investigated for mequitazine (MQ) illustrating possible mechanisms and photodegradation products formed. Accelerated photolysis is done for MQ under justified stress conditions by subjecting aqueous drug solutions to radiation for specified period of time. Synthesis of the main photodegradants, the sulfoxide, is achieved. Selective quantification of MQ, singly in bulk form, pharmaceutical formulations and/or in the presence of its photodegradants is demonstrated.

The indication of stability has been undertaken under conditions likely to be expected at normal storage conditions using a simple colorimetric method based on oxidation of the intact phenothiazine drug by potassium iodate in acid medium to form a red colored product adequate for quantitative estimation of the studied drug.

Keywords :

Colorimetry; Mequitazine; Photodegradation; Stability.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Nagiba y. M. hassan**



Title : Selective Determination of Ertapenem in the Presence of its Degradation Product

Authors : Nagiba Y. Hassan, Ezzat M. Abdel-Moety, Nariman A. Elragehy and Mamdouh R. Rezk

Published In : Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

ISSN : 1386-1425

Impact Factor : 1.51

Abstract :

Stability-indicative determination of ertapenem (ERTM) in the presence of its β -lactam open-ring degradation product, which is also the metabolite, is investigated. The degradation product has been isolated, via acid-degradation, characterized and elucidated. Selective quantification of ERTM, singly in bulk form, pharmaceutical formulations and/or in the presence of its major degradant is demonstrated.

The indication of stability has been undertaken under conditions likely to be expected at normal storage conditions. Among the spectrophotometric methods adopted for quantification are first derivative (1D), first derivative of ratio spectra (¹DD) and bivariate analysis...

Keywords :

Bivariate; Ertapenem; Derivative-ratio; First derivative spectrophotometry; Stability.

Faculty of Pharmacy

Dept. : Analytical Pharmaceutical Chemistry

Name : **Hala Elsayed E. Zaazaa**



Title : Stability Indicating Methods for Determination of Ziprasidone Hydrochloride

Authors : Samah S.Abbas, Hala E.Zaazaa, Mohamed R.El-Ghobashy, Yasmin M.Fayez and Soheir A.Fattah

Published In : Analytical Chemistry

ISSN : 0972-8376

Impact Factor : 0.0

Abstract :

This manuscript describes the development and validation of a quantitative analytical method for determination of Ziprasidone Hydrochloride (ZIP) in pure form and pharmaceutical product using ratio subtraction, first derivative ratio, TLC-densitometry and multivariate calibration techniques.

The proposed methods are accurate, precise, sensitive and selective and can be used in quality control laboratories.

Keywords :

Ziprasidone hydrochloride; Ratio subtraction; First derivative ratio spectrophotometry; Thin layer chromatography densitometry; Chemometric technique.

Faculty of Pharmacy**Dept.** : Analytical Pharmaceutical Chemistry**Name** : **Hala Elsayed E. Zaazaa****Title** : Spectrophotometric and Spectrodensitometric Determination of Clopidogrel Bisulfate with Kinetic Study of its Alkaline Degradation**Authors** : Hala E. Zaazaa, Samah S. Abbasa, M. Abdelkawy and Maha M. Abdelrahman**Published In** : Talanta**ISSN** : 0039-9140**Impact Factor** : 3.206**Abstract** :

Four sensitive, selective and precise stability-indicating methods for the determination of Clopidogrel Bisulfate (CLP) in presence of its alkaline degradate and in pharmaceutical formulations were developed and validated. Method A is a second derivative (D^2) spectrophotometric one, which allows the determination of CLP in presence of its alkaline degradate at 219.6, 270.6, 274.2 and 278.4nm (corresponding to zero-crossing of the degradate) over a concentration range of 4–37 $\mu\text{g mL}^{-1}$ with mean percentage recoveries 99.81 \pm 0.893, 99.72 \pm 0.668, 99.88 \pm 0.526 and 100.46 \pm 0.646, respectively. CLP can be determined in the presence of up to 65% of its degradate. D^2 method was used to study the kinetic of CLP alkaline degradation that was found to follow a first-order reaction. The $t_{1/2}$ was 6.42 h while K (reaction rate constant) was 0.1080 mol/h. Method B is the first derivative of the ratio spectra (DD^1) spectrophotometric method, by measuring the peak amplitude at 217.6 and 229.4nm using acetonitrile and CLP can be determined in the presence of up to 70% of its degradate. The linearity range was 5–38 $\mu\text{g mL}^{-1}$ with mean percentage recoveries 99.88 \pm 0.909 and 99.70 \pm 0.952, respectively. Method C based on the determination of CLP by the bivariate calibration depending on simple mathematic algorithm which provides simplicity and rapidity. The method depends on quantitative evaluation of the absorbance at 210 and 225nm over a concentration range 5–38 $\mu\text{g mL}^{-1}$ with mean percentage recovery 99.27 \pm 1.115. CLP can be determined in the presence of up to 70% of its degradate. Method D is a TLC-densitometric one, where CLP was separated from its degradate on silica gel plates using hexane:methanol:ethyl acetate (8.7:1:0.3, v/v/v) as a developing system. This method depends on quantitative densitometric evaluation of thin layer chromatogram of CLP at 248 nm over a concentration range of 0.6–3 $\mu\text{g}/\text{band}$ with mean percentage recovery 99.97 \pm 1.161. CLP can be determined in the presence of up to 90% of its alkaline degradate.

The selectivity of the proposed methods was checked using laboratory prepared mixtures. The proposed methods have been successfully applied to the analysis of CLP in pharmaceutical dosage forms without interference from other dosage form additives and the results were statistically compared with the official method.

Keywords:

Clopidogrel Bisulfate; Derivative spectrophotometry; Kinetic study; Bivariate calibration; Spectrodensitometry; Stability indicating method.

Faculty of Pharmacy

Dept. : Analytical Pharmaceutical Chemistry

Name : **Hala Elsayed E. Zaazaa**



Title : Stability Indicating Methods for Determination of Nafronyl Oxalate

Authors : Samah S. Abbas, Hala E. Zaazaa, Mohamed R. El-Ghobashy, Yasmin M. Fayez and Soheir A. Fattah

Published In : Analytical Chemistry

ISSN : 0972-8376

Impact Factor : 0.0

Abstract :

HPLC method with spectroscopic detection for determination of Nafronyl(Naftidrofuryl) Oxalate (NFL), a rapid separation could be achieved by a C18column using mobile phases of 72%methanol-1% triethylamine - 0.6%phosphoric acid. The eluate was monitored at 282.4. Two chemometrictechniques were applied for determination of NFL namely partial leastsquares (PLS-1) and genetic algorithm based wavelength selection- partial least squares (GA-PLS) regression methods. The suggested methods were used to determine NFL in synthetic mixtures and in commercial tablets. The validity of the proposed methods was further assessed by applying standard addition technique. The obtained results were statistically compared with official method, showing no significant difference with respect to accuracy and precision.

Keywords :

Naftidrofuryl Oxalate; Nafronyl Oxalate; Praxilane; High Performance Liquid Chromatography; Genetic algorithm.

Faculty of Pharmacy**Dept.** : Analytical chemistry**Name** : **Kareem Mahmoud A. Younes****Title** : Development of Membrane Electrodes for the Specific Determination of Moexipril Hydrochloride in Dosage forms and Biological Fluids**Authors** : F. Belal, S. M. Amer, F. H. Metwally and K. M. Younes**Published In** : Portugaliae Electrochimica Acta (PEA)**ISSN** : 1647-1571**Impact Factor** : 0.85**Abstract** :

Three polyvinylchloride (PVC) membrane sensors for the determination of moexipril hydrochloride were prepared and characterized. The sensors are based on the use of the ion association complexes of moexipril cation with either ammonium reineckate (sensor1) or tetraphenyl borate (sensor 2) or phosphotungistic acid (sensor 3) counter anions as ion exchange sites in the PVC matrix. The performance characteristics of these sensors were evaluated according to IUPAC recommendations, which reveal a fast, stable and linear response for moexipril over the concentration range of 10^{-6} to 10^{-2} M for the three sensors with cationic slopes of 29.1, 30.1 and 30.2 mV per concentration decade for the three sensors, respectively. The direct potentiometric determination of moexipril hydrochloride using the proposed sensors gave recoveries % of 99.64 ± 0.34 , 99.34 ± 0.56 and 99.68 ± 0.42 for the three sensors, respectively. The sensors were used for determination of moexipril hydrochloride in pharmaceutical formulations and in plasma. Validation of the method shows suitability of the proposed sensors for use in quality control assessment of moexipril hydrochloride. The obtained results were in a good agreement with those obtained using the reported spectrophotometric method.

Keywords :

Moexipril hydrochloride; Ion selective electrodes; PVC membranes; Ammonium reneickate; Tetraphenyl borate; Phosphotungistic acid.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Mohamed Abdalla E. Aga**



Title : Determination of Binary Mixture of Raubasine and Almitrine Dismesylate by Derivative Spectrophotometry

Authors : Mohammad A. El-Sayed

Published In : Saudi Pharmaceutical

ISSN : 1319-0164

Impact Factor : 0.0

Abstract :

A first derivative spectrophotometric (1D) and derivative ratio (1DD) methods were utilized to determine raubasine (I) and almitrine dismesylate respectively using methanol as a solvent. A linear relationship was obtained in the range from 6- 20 $\mu\text{g ml}^{-1}$ raubasine for the (1D) method and 10- 24 $\mu\text{g ml}^{-1}$ almitrine dismesylate for the (1DD) method. By applying the proposed methods, it was possible to determine raubasine in its pure powdered form with accuracy 99.94 ± 0.860 ($n = 8$) for the (1D) method and almitrine dismesylate with accuracy 100.07 ± 0.784 ($n = 8$) for the (1DD) method. The proposed methods were validated and found to be suitable assay methods for raubasine (I) and almitrine dismesylate (II) in pharmaceutical formulations.

Keywords :

Almitrine dismesylate; Raubasine; Derivative ratio.

Faculty of Pharmacy**Dept.** : Analytical chemistry**Name** : **Mohamed Abdalla E. Aga****Title** : Stability Indicating Methods for Determination of A Mixture of Almitrine and Raubasine by Derivative Spectrophotometry**Authors** : Mohammad A. El-Sayed**Published In** : Drug Testing and Analysis**ISSN** : 1942-7611**Impact Factor** : 0.0**Abstract** :

A second derivative spectrophotometric (2D) and a derivative ratio spectrum zero crossing (1DD) methods were utilized to determine raubasine (I) and almitrine dismesylate (II) in presence of raubasine degradation product (III) using methanol as a solvent. Linear relationships were obtained in the range from 6- 20 $\mu\text{g ml}^{-1}$ raubasine for the (2D) method and 12- 24 $\mu\text{g ml}^{-1}$ almitrine dismesylate for the (1DD) method. By applying the proposed methods, it was possible to determine raubasine in its pure powdered form with accuracy 99.93 ± 1.116 ($n = 8$) for the (2D) method and almitrine dismesylate with accuracy 99.98 ± 0.602 ($n = 7$) for the (1DD) method. Laboratory prepared mixtures containing different ratios of (I), (II) and (III) were analyzed and the proposed methods were valid up to 50 % (III). The proposed methods were validated and found to be suitable as stability indicating assay methods for raubasine (I) and almitrine dismesylate (II) in pharmaceutical formulations.

Keywords :

Almitrine dismesylate; Raubasine; Derivative ratio; Zero crossing.

Faculty of Pharmacy

Dept. : Analytical Chemistry

Name : **Mohamed Abdalla E. Aga**



Title : Stability Indicating Chemometric Methods for the Determination of Pyritinol dihydrochloride.

Authors : Mohammad A. El-Sayed and Mohammad A. Mohammad

Published In : Drug Testing and Analysis

ISSN : 1942-7611

Impact Factor : 0.0

Abstract :

Three multivariate calibration methods, including classical least square with non zero intercept (CLS), principle component regression (PCR) and partial least square (PLS) have been used for the determination of pyritinol dihydrochloride in presence of its degradation product. A training set was constructed for the mixture and the best model was used for the prediction of the concentration of the selected drug. The proposed procedures were successfully applied for the determination of pyritinol dihydrochloride in laboratory prepared mixtures and in commercial preparation. Pyritinol dihydrochloride was analyzed with mean accuracy 99.99 ± 0.905 , 99.91 ± 0.966 and 99.92 ± 0.962 using the CLS, PCR and PLS methods respectively. The validity of the proposed methods was assessed by applying the standard addition technique. The proposed procedures were found to be rapid, simple and require no preliminary separation. Therefore, they can be used for the routine analysis of pyritinol dihydrochloride in quality control laboratories.

Keywords :

Classical least square; Principle component regression; Partial least square; Pyritinol dihydrochloride.

Faculty of Pharmacy**Dept.** : Biochemistry**Name** : **Tarek M. K. Motawi****Title** : Comparative Study Between the Effect of the Peroxisome Proliferator Activated Receptor-Alpha Ligands Fenofibrate and n-3 Polyunsaturated Fatty Acids on Activation of 5'-AMP-Activated Protein Kinase-alpha1 in High-fat Fed Rats.**Authors** : Tarek M. Motawi, Reem M. Hashem, Laila A. Rashed and Sabry M. Abd El-Razek**Published In** : Pharmacy and Pharmacology**ISSN** : 0022-3573**Impact Factor** : 1.847**Abstract** :

Objectives: Obesity is a risk factor for type 2 diabetes mellitus. It results from an energy imbalance in which energy intake exceeds energy expenditure. The cellular fuel gauge 5'-AMP-activated protein kinase (AMPK) is a heterotrimeric protein consisting of one catalytic subunit (α) and two non-catalytic subunits (β and γ) and approximately equal levels of $\alpha 1$ and $\alpha 2$ complexes are present in the liver. AMPK regulates metabolic pathways in response to metabolic stress and in particular ATP depletion to switch on energy-producing catabolic pathways such as β -oxidation of fatty acids and switch off energy-depleting processes such as synthesis of fatty acid and cholesterol. A high-fat diet alters AMPK- $\alpha 1$ gene expression in the liver and skeletal muscle of rats and results in body weight gain and hyperglycaemia. The aim of this study was to investigate and compare the potential effects of peroxisome proliferator-activated receptor (PPAR)- α agonists fenofibrate and n-3 polyunsaturated fatty acids (PUFAs) in modulation of AMPK- $\alpha 1$ activity in liver and skeletal muscle of high-fat diet fed rats.

Methods: Reverse transcription-polymerase chain reaction was used for determination of AMPK- $\alpha 1$ in liver and soleus muscle and both PPAR- α and CPT-1 in hepatic tissues. Serum, total cholesterol, triacylglycerol, fatty acid and fasting blood glucose were determined colorimetrically.

Key Findings: Both PPAR- α agonists, fenofibrate and n-3 PUFA, increased the mRNA expression of AMPK- $\alpha 1$ activity in liver and skeletal muscle of obese diabetic rats. Fenofibrate was superior in its activation of hepatic mRNA expression of AMPK- $\alpha 1$ to exert more lipolytic effect and body weight reduction, as estimated through the decrease of triacylglycerol output and serum levels of fatty acid on the one hand and the increase in CPT-1 mRNA expression, the key

enzyme in β -oxidation of fatty acid, on the other hand. n-3 PUFA activated AMPK- α 1 mRNA expression in skeletal muscle much more than fenofibrate to reveal more hypoglycaemic effect.

Conclusions: The PPAR- α agonists fenofibrate and n-3 PUFA could efficiently activate AMPK- α 1 mRNA expression in liver and skeletal muscle to exert body weight reduction and hypoglycaemic effect, respectively.

Keywords:

AMPK- α 1; CPT-1; Diabetes mellitus; Fenofibrate; PPAR- α .

Faculty of Pharmacy**Dept.** : Clinical Pharmacy**Name** : **Samar Farghali Farid****Title** : Subconjunctival Bevacizumab for Corneal Neovascularization**Authors** : Samar Farghali Farid**Published In** : Acta Ophthalmologica**ISSN** : 1755-375X**Impact Factor** : 2.138**Abstract :**

Purpose: This work aimed to study and evaluate the effect of subconjunctival bevacizumab injection in patients with corneal neovascularization (CNV) resulting from different ocular surface disorders. **Methods:** Ten eyes with CNV caused by different ocular surface disorders were studied. All eyes had both major and minor vessel CNV caused by factors such as healed corneal ulcers, long-standing chronic inflammatory diseases and corneal ischaemia (caused by contact lenses). All eyes received a single subconjunctival injection of 2.5 mg (0.1 ml) bevacizumab. Morphological changes in the major and minor vessels were evaluated using slit-lamp biomicroscopy and corneal photography. **Results:** Conspicuous recession of the minor vessels of CNV was observed in all eyes at 2 weeks post-injection. The extent of CNV of the major vessels was significantly decreased at 2 weeks post-injection. The level of CNV continued to decrease noticeably for 3 months and then stabilized for the remainder of the 6-month follow-up period. Parameters used for evaluation included the total area of CNV, which amounted to $14.0 \pm 5.4\%$ of the corneal surface pre-injection, compared with $9.4 \pm 3.9\%$ post-injection ($p < 0.01$), reflecting a mean decrease in CNV of $33 \pm 8\%$ and the extent of neovascularization, which decreased from 4.3 ± 1.5 clock hours pre-injection to 2.4 ± 1.1 clock hours post-injection ($p < 0.01$). During the 6-month follow-up, none of the 10 eyes showed any complication that could be related to subconjunctival bevacizumab injection. **Conclusions:** Bevacizumab can be used safely and effectively for CNV resulting from different ocular surface disorders. It represents an effective treatment for minor vessel neovascularization caused by long-standing chronic inflammation (e.g. trachoma) or long-standing corneal ischaemia (e.g. contact lenses), as well as for major vessel neovascularization resulting from different causes. Bevacizumab was well tolerated over the 6-month follow-up period.

Keywords :

Avastin; Bevacizumab; Corneal neovascularization; Subconjunctival.

Faculty of Pharmacy

Dept. : Clinical Pharmacy

Name : Samar Farghali Farid



Title : Management of Intraepithelial and Invasive Neoplasia of the Cornea and Conjunctiva: A Long-term Follow Up

Authors : Samar Farghali Farid

Published In : Cornea

ISSN : 0277-3740

Impact Factor : 1.853

Abstract :

Purpose: The aim of this work is to report the long-term results of using immunotherapy for the management of cornea and conjunctiva intraepithelial neoplasia and squamous cell carcinoma after surgical excision of the neoplasm.

Methods: Ten eyes of 10 patients with cornea and conjunctiva intraepithelial neoplasia or squamous cell carcinoma had wide surgical excisions of the neoplasm after evaluation of the level of corneal involvement using ultrasound biomicroscopy. All eyes received topical cyclosporine A (0.05%) and topical mitomycin C (0.01%) 4 times daily for 12 weeks after surgery. All eyes were followed up every month for 6 months and then every 6 months for another 18 months.

Results: All eyes showed total cure with no recurrence during the 2-year follow-up period. Epithelial toxicity (punctate keratopathy) occurred in 3 eyes, ocular irritation and mild conjunctival hyperemia in 5 eyes and lid toxicity in 2 cases during the treatment with mitomycin C. There were no serious complications that necessitated stopping the treatment.

Conclusion: During a 2-year follow-up period, the use of topical cyclosporine A (0.05%) combined with mitomycin C (0.01%) as an adjunctive treatment after surgical excision in cornea and conjunctiva intraepithelial neoplasia and squamous cell carcinoma was found to prevent tumor recurrence, especially in extensive lesions, when surgical excision cannot ensure a tumor-free margin.

Keywords :

Cornea and conjunctiva intraepithelial neoplasia; Squamous cell carcinoma of cornea and conjunctiva; Topical mitomycin C - topical cyclosporine A.

Faculty of Pharmacy

Dept. : Clinical Pharmacy

Name : **Samar Farghali Farid**



Title : Evaluation of Digoxin Dosing in Two Egyptian Hospitals: A Pilot Study

Authors : Samar Farghali Farid

Published In : Australian Journal of Basic and Applied Sciences

ISSN : 1991-8178

Impact Factor : 0.0

Abstract :

Introduction: Digoxin is one of the digitalis cardiac glycosides indicated in heart failure and atrial fibrillation. Due to individual variability in digoxin pharmacokinetics, digoxin doses need to be calculated based on patient's weight, renal function and indication. Furthermore, therapeutic drug monitoring of digoxin is highly recommended. However, it is common practice among cardiologists in Egypt to prescribe one and the same dose and dosing regimen to all patients for both heart failure and atrial fibrillation.

Objective: The objective of this study is to predict digoxin plasma concentrations at digoxin steady state to assess the appropriateness of digoxin dosing.

Methods: Digoxin plasma concentrations were calculated for 14 patients using prescribed digoxin doses and patient specific data and compared to target digoxin concentrations.

Results: Patients had generally digoxin levels within the recommended therapeutic levels not taking into consideration the interrupted dosing schedule followed in Egyptian hospitals which might lead to sub-therapeutic levels. However, patients with reduced renal function had predicted levels higher than the recommended dosing range.

Conclusion: Prescribing policy for digoxin in Egypt needs to be re-evaluated. Correct doses can easily be calculated using simple pharmacokinetic equations or computer programs to achieve therapeutic digoxin levels for different indications. The role of therapeutic drug monitoring should also be emphasized to ensure optimum therapeutic outcome and safety.

Keywords :

Digoxin; Digitalis- heart failure; Atrial fibrillation; Therapeutic drug monitoring.

Faculty of Pharmacy

Dept. : Clinical Pharmacy

Name : **Nirmeen Ahmed Sabry**



Title : Serum Trace Element Levels in COPD Patient: the Relation Between Trace Element Supplementation and Period of Mechanical Ventilation in A Randomized Controlled Trial

Authors : May El-Attar, Mohamed Said, Gehan El-Assal, Nirmeen A. Sabry, Emad Omar and Laila Ashour

Published In : Respiriology

ISSN : 1323-7799

Impact Factor : 1.849

Abstract :

Background and Objective: Many trace elements play important roles in activating or inhibiting enzymatic reactions, by competing with other elements and metalloproteins for binding sites, by affecting the permeability of cell membranes and by other mechanisms. They play important roles in the oxidant/antioxidant balance. As such, trace elements are thought to be involved directly or indirectly in the pathogenesis of several diseases. The aim of the present study is to investigate the effect trace elements (Se, Mn and Zn) intravenously administered on the period the COPD patients spend on mechanical ventilation.

Methodology: In a randomized double-blinded controlled trial a 120 subjects (40 normal volunteers and 80 COPD) were recruited. Serum concentration levels of Se, Mn and Zn were determined for all enrolled subjects with Inductively Coupled Plasma (ICP) spectroscopy. COPD patients received intravenous supplementation of the above trace elements and the periods the patients spent on mechanical ventilation was determined.

Results: There was a significant reduction ($p=0.013$) in the period the patients with COPD spent on the mechanical ventilation when received intravenous supplementation (9.4 ± 7.3 days) compared with the COPD patients who received placebo (17.8 ± 7.6 days).

Conclusion: Trace element (Se, Mn and Zn) status is altered in critically ill patients with COPD. The supplementation achieved a reduction in the period those patients spent on the mechanical ventilation. A larger multi-centre trial is required to confirm this preventive effect and to explore its applicability to other critical care conditions.

Keywords :

COPD; Manganese; Mechanical ventilation; Selenium; Trace elements; Zinc.

Faculty of Pharmacy

Dept. : Clinical Pharmacy

Name : **Nirmeen Ahmed Sabry**



Title : Transdermal Delivery of Salbutamol Sulphate: Formulation and Evaluation

Authors : Nirmeen A. Sabry and Emad El-Din Omar

Published In : Pharmaceutical Development and Technology

ISSN : 1083-7450

Impact Factor : 0.975

Abstract :

Salbutamol patches were prepared and evaluated. The effect of different Eudragits and various plasticizers on the properties of the patches were studied. Patches were prepared by casting method employing different plasticizers. These patches were evaluated for weight, thickness uniformity, swelling index, tensile strength, elongation percent and moisture absorption capacity. Release was studied. Tensile strength of the patches using Eudragit RS 100 as well as RS100 + L100 and triacetin was the lowest. Formulae containing 10% oleic acid and 5% dimethyl formamide, respectively, showed the highest permeability. These two formulae were studied clinically, the first formula only showed a significant improvement.

Keywords :

Salbutamol Sulphate; Transdermal; Patches.

Faculty of Pharmacy**Dept.** : Clinical Pharmacy**Name** : **Nirmeen Ahmed Sabry****Title** : Role of the Pharmacist in Identification of Medication Related Problems in the ICU: A Preliminary Screening Study in an Egyptian Teaching Hospital**Authors** : Nirmeen A. Sabry, Samar F. Farid and Emad El-Din Omar**Published In** : Australian Journal of Basic and Applied Science**ISSN** : 1991-8178**Impact Factor** : 0.0**Abstract** :

Introduction: Medication-related problems in the ICU are an important but poorly understood phenomenon. Many patients admitted to intensive care units consume long-term medication. New drugs may be commenced during intensive care intended for the short term or longer. Patients are often cared for by several teams during hospital admission and long-term medication may inadvertently be permanently discontinued. Aim: We sought to evaluate the frequency and incidence of medication-related problems in the ICU in one of the largest teaching hospitals in Egypt. **Methodology:** Prospective observational study was conducted to report and record the frequency of medication related problems in the ICUs. Patients: 220 patients were reviewed during a period of one year. Those patients were prescribed 2286 medications. **Results:** Medication review was done for 220 ICU patients. The average length of the period the patients stayed in the hospital was around 10.396 days. The 220 recruited patients, using a total of 2286 medicines, were classified into six major categories according to the BNF 2009. Cardiovascular conditions represented the principal reason for ICU admission.

Cardiovascular agents counted for the majority of the medications consumed by the participants; 2 anticoagulants and antiplatelets, nitrates and H-receptor antagonists were prescribed most frequently. About 97% of monitored patients were reported with one or more drug related problems. The problems were categorized into 13 different classes. Among the detected errors, incorrect dosing regimen represented the highest percentage (21.971%) followed by duplication and prescribing unnecessary medication representing around 12% each. Equal incidence of drugs being prescribed either in a lower dose, higher dose or had some degree of drug interaction (8.4 % each). Drugs that required therapeutic monitoring that was not done represented 7.27 % and antibiotic misuse represented 5.331 % of the total medication errors detected.

Keywords :

Medication review; Medication errors; Prescription monitoring; Medication related problems; Drug related problems; Adverse drug events; Intensive care unit.

Faculty of Pharmacy**Dept.** : Microbiology and Immunology**Name** : **Ahmed Sherif Attia****Title** : Identification of a Bacteriocin and its Cognate Immunity Factor Expressed by *Moraxella Catarrhalis***Authors** : Ahmed S. Attia, Jennifer L. Sedillo, Todd C. Hoopman, Wei Liu, Lixia Liu, Chad A. Brautigam and Eric J. Hansen**Published In** : BMC Microbiology**ISSN** : 1471-2180**Impact Factor** : 2.88**Abstract** :

Background: Bacteriocins are antimicrobial proteins and peptides ribosomally synthesized by some bacteria which can effect both intraspecies and interspecies killing. **Results:** *Moraxella catarrhalis* strain E22 containing plasmid pLQ510 was shown to inhibit the growth of *M. catarrhalis* strain O35E. Two genes (*mcbA* and *mcbB*) in pLQ510 encoded proteins predicted to be involved in the secretion of a bacteriocin. Immediately downstream from these two genes, a very short ORF (*mcbC*) encoded a protein which had some homology to double-glycine bacteriocins produced by other bacteria. A second very short ORF (*mcbI*) immediately downstream from *mcbC* encoded a protein which had no significant similarity to other proteins in the databases. Cloning and expression of the *mcbI* gene in *M. catarrhalis* O35E indicated that this gene encoded the cognate immunity factor. Reverse transcriptase-PCR was used to show that the *mcbA*, *mcbB*, *mcbC* and *mcbI* ORFs were transcriptionally linked. This four-gene cluster was subsequently shown to be present in the chromosome of several *M. catarrhalis* strains including O12E. Inactivation of the *mcbA*, *mcbB*, or *mcbC* ORFs in *M. catarrhalis* O12E eliminated the ability of this strain to inhibit the growth of *M. catarrhalis* O35E. In co-culture experiments involving a *M. catarrhalis* strain containing the *mcbABCI* locus and one which lacked this locus, the former strain became the predominant member of the culture after overnight growth in broth. **Conclusion:** This is the first description of a bacteriocin and its cognate immunity factor produced by *M. catarrhalis*. The killing activity of the *McbC* protein raises the possibility that it might serve to lyse other *M. catarrhalis* strains that lack the *mcbABCI* locus, thereby making their DNA available for lateral gene transfer.

Keywords :*Moraxella catarrhalis*; Bacteriocin; Immunity factor.

Faculty of Pharmacy**Dept.** : Microbiology and Immunology**Name** : **Aymen Yassin****Title** : Monolithic Microfluidic Mixing–spraying Devices for Time-resolved Cryo-electron Microscopy**Authors** : Z. Lu, Tanvir R. Shaikh, D. Barnard, X. Meng, H. Mohamed, A. Yassin, C. A. Mannella, R. K. Agrawal, T.-Ming Lu and T. Wagenknecht**Published In** : Structural Biology**ISSN** : 1047-8477**Impact Factor** : 4.059**Abstract** :

The goal of time-resolved cryo-electron microscopy is to determine structural models for transient functional states of large macromolecular complexes such as ribosomes and viruses. The challenge of time resolved cryo-electron microscopy is to rapidly mix reactants and then, following a defined time interval, to rapidly deposit them as a thin film and freeze the sample to the vitreous state. Here we describe a methodology in which reaction components are mixed and allowed to react and are then sprayed onto an EM grid as it is being plunged into cryogen. All steps are accomplished by a monolithic, microfabricated silicon device that incorporates a mixer, reaction channel and pneumatic sprayer in a single chip. We have found that microdroplets produced by air atomization spread to sufficiently thin films on a millisecond time scale provided that the carbon supporting film is made suitably hydrophilic. The device incorporates two T-mixers flowing into a single channel of four butterfly-shaped mixing elements that ensure effective mixing, followed by a microfluidic reaction channel whose length can be varied to achieve the desired reaction time. The reaction channel is flanked by two ports connected to compressed humidified nitrogen gas (at 50 psi) to generate the spray. The monolithic mixer-sprayer is incorporated into a computer-controlled plunging apparatus. To test the mixing performance and the suitability of the device for preparation of biological macromolecules for cryo-EM, ribosomes and ferritin were mixed in the device and sprayed onto grids. Three-dimensional reconstructions of the ribosomes demonstrated retention of native structure and 30S and 50S subunits were shown to be capable of reassociation into ribosomes after passage through the device.

Keywords :

Cryo-electron microscopy; Single particles; Time-resolved; Kinetics; Ribosome; Three-dimensional reconstruction.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Hossam Ashour**



Title : Therapeutic Implications of Immune-Privilege Mechanisms:
Emphasis on ACAID

Authors : Hossam M. Ashour

Published In : Internet Journal of Medical Update

ISSN : 00-00

Impact Factor : 0.0

Abstract :

Anterior chamber-associated immune deviation (ACAID) is a unique example of immune privilege of the eye that culminates in systemic peripheral tolerance. ACAID is maintained by antigen-specific regulatory T cells (Tregs) that control harmful immune responses, which if not curbed can lead to injury of the bystander cells incapable of regeneration. ACAID involves intricate cellular interactions between F4/80+ ocular antigen presenting cells (APC), B cells, gamma delta ($\gamma\delta$) T cells, NK T cells, CD4+CD25+ Tregs and CD8+ Tregs. This whole cascade of events is induced by simply introducing antigens into the anterior chamber (AC) of the eye. Antigens injected into the AC are processed by F4/80+ antigen presenting cells (APC), which migrate to the thymus and the spleen. In the spleen, ocular APC elicit the generation and expansion of antigen-specific splenic B cells that express both MHC I and MHC II, present antigens and are required for ACAID induction.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Hossam Ashour**



Title : Species Distribution and Antimicrobial Susceptibility of Gram-negative Aerobic Bacteria in Hospitalized Cancer Patients

Authors : Hossam Ashour and Amany El-Sharif

Published In : Journal of Translational Medicine

ISSN : 1479-5876

Impact Factor : 2.917

Abstract :

Background: Nosocomial infections pose significant threats to hospitalized patients, especially the immunocompromised ones, such as cancer patients. **Methods:** This study examined the microbial spectrum of gram-negative bacteria in various infection sites in patients with leukemia and solid tumors. The antimicrobial resistance patterns of the isolated bacteria were studied. **Results:** The most frequently isolated gram-negative bacteria were *Klebsiella pneumoniae* (31.2%) followed by *Escherichia coli* (22.2%). We report the isolation and identification of a number of less frequent gram negative bacteria (*Chromobacterium violaceum*, *Burkholderia cepacia*, *Kluyvera ascorbata*, *Stenotrophomonas maltophilia*, *Yersinia pseudotuberculosis* and *Salmonella arizona*). Most of the gram-negative isolates from Respiratory Tract Infections (RTI), Gastro-intestinal Tract Infections (GITI), Urinary Tract Infections (UTI) and Bloodstream Infections (BSI) were obtained from leukemic patients. All gram-negative isolates from Skin Infections (SI) were obtained from solid-tumor patients. In both leukemic and solid-tumor patients, gram-negative bacteria causing UTI were mainly *Escherichia coli* and *Klebsiella pneumoniae*, while gram-negative bacteria causing RTI were mainly *Klebsiella pneumoniae*. *Escherichia coli* was the main gram-negative pathogen causing BSI in solid-tumor patients and GITI in leukemic patients. Isolates of *Escherichia coli*, *Klebsiella*, *Enterobacter*, *Pseudomonas* and *Acinetobacter* species were resistant to most antibiotics tested. There was significant imipenem-resistance in *Acinetobacter* (40.9%), *Pseudomonas* (40%) and *Enterobacter* (22.2%) species and noticeable imipenem-resistance in *Klebsiella* (13.9%) and *Escherichia coli* (8%). **Conclusion:** This is the first study to report the evolution of imipenem-resistant gram-negative strains in Egypt. Mortality rates were higher in cancer patients with nosocomial *Pseudomonas* infections than any other bacterial infections.

Policies restricting antibiotic consumption should be implemented to avoid the evolution of newer generations of antibiotic resistant-pathogens.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Hossam Ashour**



Title : Sero-diagnosis of Brucellosis in Cattle and Humans in Egypt

Authors : Hassan Samaha, Tarek Mohamed, Ramadan Khoudair and Hossam Ashour

Published In : Immunobiology 214(3): 223-226, (2009)

ISSN : 0171-2985

Impact Factor : 3.461

Abstract :

Brucellosis is a serious disease that primarily affects animals, which act as reservoirs for human infection. There is scanty data on brucellosis prevalence in cattle and humans in Mediterranean countries. Control of brucellosis in animals and thus prevention of human disease, depends on utilizing efficient diagnostic procedures. In order to explore different factors affecting brucellosis prevalence in humans and cattle, we employed multiple serodiagnostic tests to compare brucellosis sero-prevalence in cattle with respect to breed, age and sex and to detect sero-positive rates of brucellosis in humans, who had history of contact with animals. 100 blood samples were collected from each of animal and human subjects. Buffered acidified plate antigen, Rose Bengal plate, standard tube agglutination and Rivanol tests were used. There was no significant difference in brucellosis sero-prevalence between cattle of Friesian and Charolais breeds, or between male and female animals. This is the first study to compare sero-prevalence of brucellosis between Friesian and Charolais breeds. Brucellosis prevalence in more-than-1-year-old cattle was significantly higher than its prevalence in less-than-1-year-old cattle. This can be attributed to animals which were exposed before reaching 1 year of age, but did not seroconvert at the time of testing and remained in an incubatory stage instead. The total sero-prevalence of brucellosis in humans ranged between 5% and 8%, with no significant differences with respect to different seasons of the year. The high prevalence rates of human brucellosis call for more strict application of hygienic measures to prevent the spread of brucellosis from cattle and other livestock to humans.

Keywords :

Brucella; Cattle; Humans; RoseBengaltest; Serology; Zoonosis.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Ramy Karam Aziz**



Title : A Hundred-year-old Insight Into the Gut Microbiome!

Authors : Ramy K. Aziz

Published In : Gut Pathogens

ISSN : 1757-4749

Impact Factor : 0.858

Abstract :

As the National Institutes of Health-funded Human Microbiome Project enters its second phase and as a major part of this project focuses on the human gut microbiome and its effects on human health, it might help to examine how microbiologists dealt with microbiome-related challenges similar to those of the 21st century using the tools of their time. An article by Arthur I. Kendall, published in The Journal of Biological Chemistry in November 1909 (Some observations on the study of the intestinal bacteria J Biol Chem 1909, 6:499-507), offers a visionary insight into many of today's hot research questions.

Keywords :

Microbiota; Human microbiome project; Paradigm shift; Metagenomics; Kendall.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Ramy Karam Aziz**



Title : The Case for Biocentric Microbiology

Authors : Ramy K. Aziz

Published In : Gut Pathogens

ISSN : 1757-4749

Impact Factor : 0.858

Abstract :

Microbiology is a relatively modern scientific discipline intended to objectively study microorganisms, including pathogens and non-pathogens. However, since its birth, this science has been negatively affected by anthropocentric convictions, including rational and irrational beliefs. Among these, for example, is the artificial separation between environmental and medical microbiology that weakens both disciplines. Anthropocentric microbiology also fails to properly answer questions concerning the evolution of microbial pathogenesis. An exclusively biocentric microbiology is imperative for improving our understanding not only of the microbial world, but also of our own species, our guts and the world around us.

Keywords :

Microbiology; Anthropocentrism; Biocentrism; Paradigm shift; Phylogenomics; Metagenomics.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Ramy Karam Aziz**



Title : In Silico Reconstruction of the Metabolic and Pathogenic Potential of Bacterial Genomes Using Subsystems

Authors : Leslie K. McNeil and Ramy K. Aziz

Published In : Genome Dynamics

ISSN : 1660-9263

Impact Factor : 0.0

Abstract :

Whole genome sequencing has revolutionized biological sciences and is leading to a paradigm shift in microbiology. As more microbial genomes are sequenced and more bioinformatics tools are developed, it has become possible to predict the metabolism of an organism from genomic data. In contrast, predicting the pathogenic potential of parasitic microbes and their interactions with their hosts is still a challenge, especially as the definition of pathogenesis itself is still evolving. In this review, we introduce the subsystem-based technology for genome annotation and analysis and we discuss some subsystem-based tools available in the National Microbial Pathogen Data Resource (NMPDR, <http://www.nmpdr.org>) and their potential application in comparative genomics and pathogenomics.

Keywords :

Pathogenomics; Bioinformatics; Microbial genomics; Virulence; Metabolic reconstruction; Virulome reconstruction; Koch's postulates; Subsystems.

Faculty of Pharmacy**Dept.** : Microbiology and Immunology**Name** : **Ramy Karam Aziz****Title** : Reconstructing the Virulome of the Human Pathogen
Streptococcus Pyogenes Using NMPDR Subsystems-based
Annotation**Authors** : Ramy K. Aziz and Leslie K. McNeil**Published In** : BMC Bioinformatics**ISSN** : 1471-2105**Impact Factor** : 3.78**Abstract** :

Background: The increasing number of published complete microbial genomes has revolutionized biological sciences and is driving a paradigm shift in microbiology. While this genomic revolution has made the reconstruction of an organism's metabolism from genomic data achievable, predicting the pathogenic potential of host-associated microbes is still in its early stages; hence, developing innovative bioinformatics tools that integrate microbiologists' expertise and experimental laboratory data with sequence data remains a necessity. For this purpose, the NIH-funded National Microbial Pathogen Data Resource (NMPDR, <http://www.nmpdr.org>) was established as a bioinformatics resource center for specific bacterial pathogens, including staphylococci, streptococci and sexually transmitted bacteria. Genomes in NMPDR are annotated by the recently developed subsystems annotation technology, available from the SEED environment. This technology relies on analyzing genes in their chromosomal context and combines the accuracy of human curation with the speed of automated propagation.

Methods and results: In this study, we apply the subsystems annotation technology to reconstruct the virulome of the human pathogen *Streptococcus pyogenes* that claims 500,000 lives every year and causes a wide range of diseases that affect adults and children. In particular, we use NMPDR tools for pathogenomic comparison of the fully sequenced streptococcal serotypes and highlight the impact of prophages and highly recombinatorial genomic segments, including the newly discovered pilus locus, on streptococcal strain emergence and diversification. Our analysis defines the core and dispensable elements of the streptococcal virulome, which includes – in addition to the ancestral, species-specific virulence proteins – the phage-encoded toxins and their pseudogenes. Finally, we use comparative analysis of streptococcal subsystems in context of actual transcriptome data to gain insight into the complex gene regulatory networks that control virulence.

Keywords :

Bioinformatics; Streptococcus pyogenes; Microbial genomes; Virulence factors; Virulome reconstruction.

Faculty of Pharmacy**Dept.** : Microbiology and Immunology**Name** : **Ramy Karam Aziz****Title** : Bioinformatics Determination of ETEC Signature Genes as potential targets for molecular diagnosis and reverse vaccinology**Authors** : Heba M. Amin, Abdel-Gawad M. Hashem and Ramy K. Aziz**Published In** : BMC Bioinformatics**ISSN** : 1471-2105**Impact Factor** : 3.78**Abstract** :

Background: Genomes of the model bacterium, *Escherichia coli*, exhibit high plasticity caused by gene gain/loss via pathoadaptive mutations, genetic rearrangement and horizontal gene transfer. This genetic variability is also translated into a remarkable phenotypic and pathotypic diversity. In this study, we focus on enterotoxigenic *E. coli* (ETEC), one of the world's deadliest infectious agents, which also represents a serious public health in Egypt's rural areas. Our aim is to integrate multiple bioinformatics tools to determine horizontally transferred, pathotype-specific signature genes as targets for specific, high-throughput molecular diagnostic tools and reverse vaccinology screens. **Methods and results:** To estimate the extent of horizontal gene transfer in ETEC, we used a combination of bioinformatics tools, including GC%, comparative genomics analysis and web-based prediction of pathogenicity islands via IslandPath. Because *E. coli* strains are typically polylysogenic, we used the ACLAME Prophinder tool to predict complete or rudimentary prophages scattered within the ETEC genome. To determine ETEC pathotype-specific genes or signature genes, we used NMPDR Signature Genes and Homolog Spreadsheet tools. We identified 128 genes that differentiate this pathotype from other *E. coli* strains, based on bidirectional-best-hit signature analysis. We also identified 94 genes that are characteristic to two closely related strains (24377A and 2348/69). Many ETEC-specific genes were mapped to prophages, prophage-like elements and other pathogenicity islands; however, some of these signature genes, e.g., ORFs 21–39 in strain 24377A, seem to be lost in other *E. coli* strains (as they are conserved among other enterobacteria, e.g., *Shigella* and *Salmonella*). Our ongoing studies are testing some of these ETEC-specific genes as targets for multiplex PCR amplification to develop a rapid diagnostic typing method. Future studies will analyze the surface-association and antigenicity of these signature gene products as a first step in a reverse vaccinology strategy to develop novel ETEC vaccines.

Keywords :

Bioinformatics; *Eshcerichia coli*; ETEC; Microbial genomes; Genometrics; Reverse vaccinology; Horizontal gene transfer.

Faculty of Pharmacy**Dept.** : Microbiology and Immunology**Name** : **Magdy Aly Amin****Title** : A Capacitive Immunosensor for Detection of Cholera Toxin**Authors** : M. Labib, M. Hedstrom, M. Amin and B. Mattiasson**Published In** : Analytica Chimica Acta**ISSN** : 0003-2670**Impact Factor** : 3.146**Abstract** :

Contamination of food with biological toxins as well as their potential use as weapons of mass destruction has created an urge for rapid and cost effective analytical techniques capable of detecting trace amounts of these toxins. This paper describes the development of a sensitive method for detection of cholera toxin (CT) using a flow-injection capacitive immunosensor based on self-assembled monolayers. The sensing surface consists of monoclonal antibodies against the B subunit of CT (anti-CT), immobilized on a gold transducer. Experimental results show that the immunosensor responded linearly to CT concentrations in the range from 1.0×10^{-13} to 1.0×10^{-10} M under optimized conditions. The limit of detection (LOD) was 1.0×10^{-14} M. Two more analytical methods were employed for detection of CT using the same antibody namely, sandwich ELISA and surface plasmon resonance (SPR)-based immunosensor. The former had an LOD of 1.2×10^{-12} M and a working range from 3.7×10^{-11} to 2.9×10^{-10} M whereas, the later had an LOD of 1.0×10^{-11} M and a linearity ranging from 1.0×10^{-9} to 1.0×10^{-6} M. These results demonstrate that the developed capacitive immunosensor system has a higher sensitivity than the other two techniques. The binding affinity of CT to the immobilized anti-CT was determined using the SPR-based immunosensor and an association constant (KA) of $1.4 \times 10^9 \text{ M}^{-1}$ was estimated.

Keywords :

Cholera toxin; Capacitive immunosensor; Surface plasmon resonance; Enzyme-linked immunosorbent assays.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Magdy Aly Amin**



Title : A novel Competitive Capacitive Glucose Biosensor Based on Concanavalin A-labeled Nanogold Colloids Assembled on A Polytyramine-modified Gold Electrode

Authors : M. Labib, M. Hedstrom, M. Amin and B. Mattiasson

Published In : Analytica Chimica Acta

ISSN : 0003-2670

Impact Factor : 3.146

Abstract :

A highly sensitive competitive capacitive glucose biosensor was constructed based on gold nanoparticles, which were employed as a platform to immobilize concanavalin A (Con A). Gold nanoparticles were fixed on a gold electrode, on which a layer of polytyramine was performed via electrochemical polymerization. The sensing mechanism is based on the competitive dissociation of a glucose polymer or a glycoconjugate from the glycoligand binding sites of immobilized Con A by the added glucose. To further improve the sensor response, several glucose polymers as well as a synthesized glycoconjugate using the periodate method, were screened. Consequently, dextran (MW 39 kDa) was selected and the feasibility of the proposed biosensor was evaluated for a competitive assay of glucose. Experimental results show that the biosensor responded linearly to glucose in the range from 1.0×10^{-6} to 1.0×10^{-2} M, corresponding to $0.18 \mu\text{gmL}^{-1}$ to 1.8mgmL^{-1} of glucose with a detection limit of 1.0×10^{-6} M under optimized conditions. The studied biosensor exhibited a response time of about 15 min and a neglectable loss in sensitivity after 10 repeated analytical cycles.

Keywords :

Competitive capacitive biosensor; Concanavalin A; Glucose; Nanogold; Polytyramine.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Magdy Aly Amin**



Title : A Multipurpose Capacitive Biosensor for Assay and Quality Control of Human Immunoglobulin G

Authors : M. Labib, M. Hedstrom, M. Amin and B. Mattiasson

Published In : Biotechnology and Bioengineering

ISSN : 0006-3592

Impact Factor : 2.936

Abstract :

We report a flow-injection biosensor system with a capacitive transducer for assay and quality control of human immunoglobulin G (hIgG). The sensing platform is based on self-assembled monolayers (SAMs) of carboxylic acid terminated alkyl-thiols with covalently attached concanavalin A. The electrochemical characteristics of the sensor surface were assessed by cyclic voltammetry using a permeable redox couple (potassium ferricyanide). The developed biosensor proved capable of performing a sensitive label-free assay of hIgG with a detection limit of 1.0 mgmL⁻¹. The capacitance response depended linearly on hIgG concentration over the range from 5.0 to 100 mgmL⁻¹, in a logarithmic plot. Typical measurements were performed in 15 min and up to 18 successive assays were achieved without significant loss of sensitivity using a single electrode. In addition, the biosensor can detect hIgG aggregates with concentrations as low as 0.01% of the total hIgG content (5.0 mgmL⁻¹). Hence, it represents a potential post-size-exclusion chromatography–UV (post-SEC–UV) binding assay for in-process quality control of hIgG, which cannot be detected by SEC–UV singly at concentrations below 0.3% of the total hIgG content.

Keywords :

Biosensor; Capacitance; Concanavalin A; Flow injection; Human immunoglobulin G; Quality control.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Magdy Aly Amin**



Title : A Capacitive Biosensor for Detection of Staphylococcal Enterotoxin B.

Authors : M. Labib, M. Hedstrom, M. Amin and B. Mattiasson

Published In : Analytical and Bioanalytical Chemistry

ISSN : 1618-2642

Impact Factor : 3.328

Abstract :

A sensitive method for the detection of staphylococcal enterotoxin B (SEB) using a flow-injection capacitive biosensor is presented. SEB was purified from a crude culture filtrate of *Staphylococcus aureus* through three chromatographic steps. The first two steps were based on ion-exchange chromatography and the last step was carried out on a gel filtration column. The SEB recovery values after the purification stages were 88%, 74% and 12%, respectively. A horseradish peroxidase labeled antistaphylococcal enterotoxin B was prepared by the periodate method and was further employed in a sandwich-enzymelinked immunosorbent assay (ELISA) for the determination of SEB concentrations in different samples obtained during the processing of the crude filtrate. The capacitive biosensor could detect SEB concentrations as low as 0.3 pg ml^{-1} with a linearity ranging from 2.8 pg ml^{-1} to 2.8 ng ml^{-1} under optimized conditions. The response time was about 10 min. A good agreement was achieved between the developed capacitive biosensor system and ELISA as a reference method for detection of SEB levels in different purification samples. The newly developed sensor has the benefits of simplicity, high sensitivity and multiple use capability.

Keywords :

Staphylococcal enterotoxin B; Capacitive biosensor; Self-assembled monolayers; ELISA; Horseradish peroxidase.

Faculty of Pharmacy

Dept. : Microbiology and Immunology

Name : **Magdy Aly Amin**



Title : Labeling, Biodistribution and Evaluation of [125I] Gemcitabine: a Potential Agent for Tumor Diagnosis and Radiotherapy

Authors : O. A. El-Kawy, A. M. Hashem, M. A. Amin and A. S. El-Wetery

Published In : J. Labelled Compounds and Radiopharmaceuticals

ISSN : 0362-4803

Impact Factor : 1.142

Abstract :

In this study, the optimization of gemcitabine labeling with iodine-125 and its biological evaluation are described. Gemcitabine was labeled via direct electrophilic substitution using chloramine-T as an oxidizing agent. The optimum amounts of reactants were 75 mg gemcitabine, 75 mg chloramine-T and 18MBq carrier-free Na¹²⁵I. The labeled gemcitabine was stable for more than 20 h. Results of the in vivo evaluation revealed that the new tracer, [125I] gemcitabine, tends to localize in tissues with high proliferation rate with preferential accumulation in cancerous tissues. Imaging should be carried at 2-h postinjection. The in vitro cell growth inhibition assay showed that the effect of [125I] gemcitabine was stronger than the effect of tenfold cold gemcitabine, which strongly suggested that its cytotoxicity was mainly due to radiotoxicity rather than chemotherapeutic activity. The binding assay revealed that [125I] gemcitabine uptake by the Ehrlich cells was high and that it bound well to DNA where the decay of the radionuclide introduced lethal irreversible double-strand breaks.

Keywords :

Gemcitabine; Auger-electron emitters; Iodine-125; Tumor targeting; Radionuclides therapy.

Faculty of Pharmacy

Dept. : Organic Chemistry

Name : **Omneya Mahmoud K. Fawzy**

Title : Synthesis and Antibacterial Activity of Novel Quinoxalinone Derivatives

Authors : Mohamed A. Shaaban, Omneya M. Khalil, Khaled R. Ahmed and Phoebe F. Lamie

Published In : J. Chemical Research

ISSN : 0308-2342

Impact Factor : 0.5

Abstract :

The reaction of 3-hydrazinocarbonylmethylquinoxalin-2(1H)-one with phthalic anhydride, certain aromatic aldehydes, isocyanates and phenyl isothiocyanate furnished corresponding imide, Schiff's, semi- and thiosemicabazide derivatives. Treatment of 3-[2 (phenylcarbonyl)hydrazinocarbonylmethyl]quinoxalin-2(1H)-one with chloroacetic acid, sulfuric acid and sodium hydroxide yielded cyclised derivatives. Moreover, 3-[2-bromobenzylidenehydrazinocarbonylmethyl]quinoxalin-2(1H)-one was cyclised to oxadiazolanyl derivative using acetic anhydride. Furthermore, 3-[5-sulfanylidene-4, 5-dihydro-1,3,4-oxadiazol-2-yl)methyl]quinoxalin-2(1H)-one was employed as a precursor in the synthesis of some novel 2(1H)-quinoxalinones. Some of the newly prepared compounds were evaluated for in vitro antibacterial activity using ofloxacin as the reference standard

Keywords :

Quinoxalinones; Synthesis; Antibacterial activity.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Amal Abdel Haleem M. Eissa****Title** : Synthesis, Biological Evaluation and Docking Studies of Novel Benzopyranone Congeners for their Expected Activity as Anti-inflammatory, Analgesic and Antipyretic Agents**Authors** : Amal A. M. Eissa, Nahla A. Farag and Gamal A. Soliman**Published In** : Bioorganic and Medicinal Chemistry**ISSN** : 0968- 0896**Impact Factor** : 3.07**Abstract** :

8- Acetyl-7-hydroxy-4-phenyl-2H-benzopyran-2-one as a starting material; a number of 8-substituted derivatives (i.e. hydrazones **2a,b**; imine **2c**; chalcones **3**; pyrazoles **4**; 3-cyano-2-oxo-dihydropyridines **5**; and/or 3-cyano-2-imino-dihydropyridines **6**) were synthesized and tested for their anti-inflammatory, analgesic and antipyretic activities. In addition, **1**, **3b**, **4d**, **4e**, **5b**, **6a**, **6c**, **6e** showed anti-inflammatory activity. **2b**, **4h**, **5e** Exhibited analgesic activity and **2b**, **4h**, **5e**, showed antipyretic effect. Moreover, molecular modeling and docking of the tested compounds into cyclooxygenase II complexed with its bound inhibitor indomethacin (4COX) using MOLSOFT ICM 3.4-8C program was performed in order to predict the affinity and orientation of the synthesized compounds at the active site. Also, it was found that the active compounds **1**, **4i**, **6a-e** interact with both Serine 530 and Tyrosine 385 amino acids which are the main amino acids involved in the mechanism of cyclooxygenase II inhibition.

The synthesis of the pyrazole- containing new compounds **4** proved a successful hit. Also, the 2-imino derivatives of 3-cyano-dihydropyridines were more successful than the 2-oxo derivatives.

According to these results, we can conclude that compounds **1**, **3c**, **4b**, **4i** and **6c** appear to be the most interesting and seem potentially attractive as anti-inflammatory, analgesic and antipyretic agents.

Keywords :

Benzopyranone; Coumarin; Anti-inflammatory; Analgesic; Antipyretic; Docking; Internal coordinate mechanics (ICM).

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Hanan H. Georgey****Title** : Anti-inflammatory Activity and PGE2 Inhibitory Properties of Novel Phenylcarbamoylmethyl Ester-Containing Compounds**Authors** : Flora Barsoum, Hanan Georgey and Nagwa Abdel-Gawad**Published In** : Molecules**ISSN** : 1420-3049**Impact Factor** : 0.97**Abstract** :

A variety of 4-(un)substituted phenylcarbamoyl methyl ester-containing compounds **3a-d**, **5a-d** and **7a-d** were synthesized via reaction in N,N-dimethylformamide of (un)substituted chloroacetanilides **2a-d** with the potassium salts of ibuprofen (**1**), naproxen (**4**) and N-acetylanthranilic acid (**6**). Moreover, other 4-(un)substituted phenylcarbamoylmethyl ester-containing compounds **10a-d** were synthesized via the attack of (un)substituted chloroacetanilides **2a-d** on one of the carboxylic acid groups of the potassium salt of 4-(2-carboxyethylcarboxamido)benzoic acid (**8**) in N,Ndimethylformamide, with subsequent cyclization of the other one giving finally a pyrrolidinone structure. Anti-inflammatory properties of the synthesized compounds were evaluated in vivo utilizing a standard acute carrageenan-induced paw oedema method in rats and the most promising prepared anti-inflammatory active agents were evaluated for ulcerogenic liability in rats using ibuprofen and naproxen as reference standards in both screenings. PGE2 inhibitory properties of the highly promising anti-inflammatory agents synthesized and low gastric ulcerogenic liabilities were tested with a PGE2 assay kit technique.

Keywords :

Ibuprofen; Naproxen; 4-(Un)substituted phenylcarbamoylmethyl esters; Antiinflammatory; Ulcerogenic liability; PGE2.

Faculty of Pharmacy

Dept. : Pharmaceutical Chemistry

Name : **Fatma A. Ragab**



Title : Synthesis, Anticancer and Radioprotective Activities of some New Pyrazolo[3,4-d]pyrimidines Containing Amino Acid Moieties

Authors : Mostafa M. Ghorab, Fatma A. Ragab, Eman Noaman, Helmy I. Heiba and Sarah A. Aboulmagd

Published In : Arzneimittel Forschung Drugresearch

ISSN : 00-00

Impact Factor : 0.0

Abstract :

Various isomeric structural purine analogues possessing the pyrazolo[3,4d]pyrimidine nucleus bearing amino acid moieties have been synthesized. The structures of the synthesized compounds were elucidated by spectral data. Preliminary testing for in vitro anticancer activity of the synthesized compounds against Ehrlich ascites carcinoma cells was carried out. The most active compounds are those of **3b**, **3d**, **3e** and **3f** respectively. Moreover, compounds **3e** and **4** exhibited significant in vivo radioprotective activity.

Keywords :

Pyrazolo[3,4-d]pyrimidines; Amino acids side chains; Anticancer; radioprotective activity.

Faculty of Pharmacy

Dept. : Pharmaceutical Chemistry

Name : **Fatma A. Ragab**



Title : Design, Synthesis and Anticancer Evaluation of Novel Tetrahydroquinoline Derivatives Containing Sulfonamide Moiety

Authors : Mostafa M. Ghorab, Fatma A. Ragab and Mostafa M. Hamed

Published In : European Journal of Medicinal Chemistry

ISSN : 0223-5234

Impact Factor : 2.882

Abstract :

Sulfonamides possess many types of biological activities and have recently been reported to show substantial antitumor activity in vitro and/or in vivo. There are a variety of mechanisms for the anticancer activity and the most prominent of these is through the inhibition of carbonic anhydrase isozymes. The present work reports the synthesis of some novel quinoline and pyrimido[4,5-b]quinoline derivatives bearing a substituted or unsubstituted sulfonamide moiety. The design of the structures of these compounds complies with the general pharmacophore of the sulfonamide compounds that act as carbonic anhydrase (CA) inhibitors as this may play a role in their anticancer activity. All the newly synthesized compounds were evaluated for their in vitro anticancer activity against breast cancer cell line (MCF7). Most of the screened compounds showed interesting cytotoxic activities compared to a reference drug.

Keywords :

Quinoline; Sulfonamide; Anticancer; Carbonic anhydrase.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Flora Fayek Barsoum****Title** : Synthesis of [1,2,4]triazolo[1,5-*a*]pyridines of Potential PGE₂ Inhibitory Properties**Authors** : Adel S. Girgis and Flora F. Barsoum**Published In** : European Journal of Medicinal Chemistry**ISSN** : 0223-5234**Impact Factor** : 2.7**Abstract** :

A variety of 5-amino-6,8-dicyano-1H-[1,2,4]triazolo[1,5-*a*]pyridin-4-ium-2-thiolate containing compounds **3a-i**, **5a-c** were prepared via reaction of arylidenemalononitriles **1a-c**, **4a,b** with 2-[(substituted amino)thiocarbonyl]cyanoacetohydrazides **2a-d** in refluxing ethanol in the presence of triethylamine. Anti-inflammatory activity screening of the synthesized compounds (at a dose of 50 mg/kg body weight) utilizing in vivo acute carrageenan-induced paw oedema standard method in rats exhibited that the prepared heterocycles possess considerable pharmacological properties especially, **3f,3h,5b** and **5c** which reveal remarkable activities relative to indomethacin (which was used as a reference standard at a dose of 10 mg/kg body weight). PGE₂ inhibitory properties of the highly promising synthesized Anti-inflammatory active agents (**3f,3h,5b** and **5c**) were determined by PGE₂ assay kit technique, which reveal remarkable activity coincide greatly with the observed anti-inflammatory properties. Anti-tumor activity screening of **3b** and **3e**, as representative examples of the synthesized compounds, at a dose of 10 μM utilizing 59 different human tumor cell lines, representing leukemia, melanoma and cancers of the lung, colon, brain, ovary, breast, prostate and kidney exhibited that, the tested compounds reflect mild or no activity at all against most of the used human tumor cell lines. However, compound **3e** reveals considerable anti-tumor properties against leukemia CCRF-CEM and HL-60(TB) cell line.

Keywords :

5-Amino-6; 8-dicyano-1H-[1,2,4]triazolo[1,5-*a*]pyridines;
Ylidenemalononitriles; 2-[(Substituted amino)thiocarbonyl]cyanoacetohydrazides;
Anti-inflammatory; PGE₂; Anti-tumor.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Flora Fayek Barsoum****Title** : Facile Synthesis of bis(4,5-dihydro-1H-pyrazole-1-carboxamides) and their Thio-analogues of Potential PGE₂ Inhibitory Properties**Authors** : Flora F. Barsoum and Adel S. Girgis**Published In** : European Journal of Medicinal Chemistry**ISSN** : 0223-5234**Impact Factor** : 2.7**Abstract** :

A variety of bis(3-aryl-4,5-dihydro-1H-pyrazole-1-thiocarboxamides) **2a-h** were prepared via reaction of bis(2-propen-1-ones) **1a-h** with thiosemicarbazide in ethanolic KOH solution. Meanwhile, bis(3-aryl-4,5-dihydro-1H-pyrazole-1-carboxamides) **3a-d** were obtained through reaction of **1a-d** with semicarbazide hydrochloride in refluxing acetic acid. Anti-inflammatory activity screening of the synthesized compounds **2a-f,h**; **3a-d** (at a dose of 50 mg/kg body weight) utilizing in vivo acute carrageenan-induced paw oedema standard method in rats exhibited that, many of the tested compounds reveal considerable anti-inflammatory properties, especially **2e** and **2f** which reveal remarkable activities relative to indomethacin (which was used as a reference standard at a dose of 10 mg/kg body weight). Ulcerogenic liability for the most promising prepared anti-inflammatory active agents (**2b,c,e,f**) (at a dose of 50 mg/kg body weight) using indomethacin as a reference standard (at a dose of 10 mg/kg body weight) indicated that compounds **2b** and **2c** exhibit lower ulcer index values than the used reference standard itself. PGE₂ inhibitory properties of the highly promising synthesized anti-inflammatory active agents (**2b,2c,2e** and **2f**) were determined by PGE₂ assay kit technique, which reveal remarkable activities coincide greatly with the observed anti-inflammatory properties.

Keywords :

Bis(2-propen-1-ones); Bis(3-aryl-4,5-dihydro-1H-pyrazole-1-carboxamides); Bis (3-aryl-4,5-dihydro-1H-pyrazole-1-thiocarboxamides); Anti-inflammatory; PGE₂.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Kamilia M. Amin****Title** : Synthesis and Antitumor Activity of Some New Xanthotoxin Derivatives**Authors** : Omaima M. Abdel Hafez, Kamilia M. Amin, Nehad A. Abdel-Latif, Tahia K. Mohamed, Eman Y. Ahmed and Timothy Maher**Published In** : European Journal of Medicinal Chemistry 44, 2967-2974 (2009)**ISSN** : 0223-5234**Impact Factor** : 2.882**Abstract** :

The condensation of 4-amino-9-methoxy psoralene (4-aminoxanthotoxin) with some aromatic aldehydes led to the formation of 4-arylimine xanthotoxin derivatives 2a–h, which were cyclized with mercaptoacetic acid to afford the thiazolidinone derivatives 3a–h. On the other hand, the reaction of aminoxanthotoxin 1 with some anhydrides afforded 4-imidione derivatives 3a–d. When 1 reacted with some isothiocyanates, the thiourea derivatives 5a–c were obtained but the thiourea derivative 6 was obtained when 1 reacted with ammonium thiocyanate. The thiourea derivative 6 was cyclized by the reaction with monochloroacetic acid in the presence of sodium acetate to give aminothiazolidinone derivative 7, but when the same reaction is carried out in the presence of pyridine, the thioxoimidazolidinone 8 was formed. The condensation of xanthotoxin sulphonamide with aromatic aldehydes gave the aryliminosulphonyl derivatives 9a–e. Xanthotoxin sulphonyl hydrazine condensed with some anhydride afforded sulphonic acid imide derivatives 10a–c. The antitumor and cytotoxic activities of 9 synthesized derivatives were tested, five compounds were found to be active, they inhibited the growth of HeLa cells.

Keywords :

Xanthotoxin; Schiff's bases; Thiazolidinones; Anhydrides; Antitumor.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Kamilia M. Amin****Title** : Synthesis -inflammatory Activities e, Analgesic and Anti
Valuation of some bi-, tri- and Tetracyclic Condensed
Pyrimidines**Authors** : Kamilia M. Amin, Mona M. Hanna, Hanan E. Abo-Youssef and
Riham F. George**Published In** : European Journal of Medicinal Chemistry 44: 4572-4584
(2009)**ISSN** : 0223-5234**Impact Factor** : 2.882**Abstract** :

Novel series of bicyclic pyrrolo[1,2-c]pyrimidines 3a-g, 5, 6a,b, 7a,b, tricyclic pyrimido[5,4-e]pyrrolo[1,2-c]pyrimidines 8a-c, 9a-g, 13a-c, 17, 18a,b, 19, 20a,b, 21 and tetracyclic condensed pyrimidines 14, 22 and 23 were synthesized through different chemical reactions. Structures of all synthesized pyrimidine derivatives were supported by spectral and elemental analyses. Analgesic activity evaluation was carried out using acetic acid-induced writhing assay and all compounds exerted comparable activity to indomethacin. The anti-inflammatory activity evaluation was performed using carrageenan-induced paw edema in rats, the potency of the bicyclic derivatives 3a-f and 7b revealed comparable activity to indomethacin without gastric ulceration. The tricyclic derivatives 13a and 20a exerted good activity however they induced gastric ulcers while 13b and 13c showed moderate activity without ulceration. In case of tetracyclic derivatives, compound 14 exhibited the highest potency and safety profile.

Keywords :

Condensed pyrimidines; Pyrrolo[1,2-c]pyrimidines; Tricyclic pyrimidines; Tetracyclic pyrimidines; Anti-inflammatory and analgesic.

Faculty of Pharmacy

Dept. : Pharmaceutical Chemistry

Name : **Kamilia M. Amin**



Title : Synthesis and Anticancer Activity of Novel Tetralin-6-yl Pyridine and Tetralin-6-yl pyrimidine Derivatives

Authors : Kamelia M. Amin, Magdi I El-Zahar, Manal M. Anwar, Mohsen M. Kamel and Maaly H. Mohamed

Published In : The Acta Poloniae Pharmaceutica – Drug Research 66 (3): 279-291 (2009)

ISSN : 0001-6837

Impact Factor : 2.81

Abstract :

A series of tetralin-6-ylpyridines and tetralin-6-ylpyrimidines was newly synthesized starting from 1-(1,2,3,4-tetrahydronaphthalen-6-yl)ethanone (1). The two groups of derivatives incorporated also different five membered nitrogen-containing heterocycles. The anticancer activity of some of the prepared compounds was evaluated using two human tumor cell lines, representing liver and breast. The compounds tested were, in most of cases, selective towards liver cancer, where the most potent compound showed $IC_{50} = 1.01 \mu\text{g/ mL}$.

Keywords :

Tetralin; Pyridine; Pyrimidine; Oxadiazole; Triazole; Thiadiazole; Pyrazoline; Thiazolidinone; Anticancer activity.

Faculty of Pharmacy

Dept. : Pharmaceutical Chemistry

Name : **Kamilia M. Amin**



Title : First Synthesis of Thiophene Thioglycosides

Authors : Galal H. Elgemeie, Wafaa A. Zaghary, Kamelia M. Amin and Tamer M. Nasr

Published In : Journal of Carbohydrate Chemistry 28: 161-178 (2009)

ISSN : 0732-8303

Impact Factor : 1.114

Abstract :

A new method for the preparation of a new class of thiophene thioglycosides via one-pot reaction of the sodium thiophenethiolate salts with 2,3,4,6-tetra-*O*-acetyl- α -*D*-glucoand galacto-pyranosyl bromides has been studied. The sodium thiophenethiolate salts are prepared using cyano-di-thioic analogs and their corresponding mono- and dithiolate salts.

Keywords :

Thiophene thioglycosides; Sodium thiophenethiolate; Galacto-pyranosyl bromides.

Faculty of Pharmacy

Dept. : Pharmaceutical Chemistry

Name : **Kamilia M. Amin**



Title : Synthesis and Antimicrobial Activity of Some 3-Substituted-5,6-dimethoxy-2,3-dihydrobenzo[d]thiazol-2-one

Authors : El-Hamouly W. S., Amine K. M., Abbas E. M. H. and Abdel-Maguid E. A.

Published In : Chinese Journal of Chemistry 27: 1629-1634 (2009)

ISSN : 1001-604x

Impact Factor : 0.945

Abstract :

Sixteen new compounds derived from the 2,3-dihydrobenzo[d]thiazol-2-one template with various side-chains in position-3 were synthesized and evaluated for their antimicrobial activity. Antibacterial and antifungal screening of the compounds prepared showed that 5,6-dimethoxy-3-(2-oxo-propyl)-2,3-dihydrobenzo[d]thiazol-2-one (3g) exhibited the highest activity.

Keywords :

4,5-dimethoxy-2-nitrophenylthioacetic acid; 3-substituted-5; 6-dimethoxy-2; 3-dihydrobenzo[d]thiazol-2-one; Antimicrobial activity.

Faculty of Pharmacy

Dept. : Pharmaceutical Analytical Chemistry

Name : **Mohamed R. E. El-Ghobashy**



Title : Simultaneous Determination of Pipenzolate Bromide and Phenobarbitone in Pharmaceutical Preparations by HPLC Method

Authors : Mohamed R. El-Ghobashy and Nisreen F. Abo Talib

Published In : Analytical Chemistry an Indian Journal

ISSN : 0974 - 7419

Impact Factor : 0.0

Abstract :

A binary mixture of pipenzolate bromide and phenobarbitone was determined by HPLC method using 0.05 M ammonium dihydrogen phosphate/ acetonitrile/ methanol (7:12:1, by volume) as the mobile phase with UV detection at 220 nm over concentration ranges of 10-90 $\mu\text{g. ml}^{-1}$ and 1-80 $\mu\text{g. ml}^{-1}$ with mean percentage accuracies 99.90 ± 0.62 and 100.30 ± 0.92 for pipenzolate bromide and phenobarbitone, respectively. The suggested procedure was checked using laboratory prepared mixtures and was successfully applied for the analysis of their pharmaceutical preparation. The method retained its accuracy and precision when applying the standard addition technique. The results obtained by applying the proposed method were statistically analyzed and compared with those obtained by the manufacturer method.

Keywords :

Pipenzolate bromide; Phenobarbitone; Reversed phase HPLC.

Faculty of Pharmacy**Dept.** : Pharmaceutical Chemistry**Name** : **Mohamed M. M. Hussein****Title** : Fluorescence Enhancement of Coumarin Thiourea Derivatives by Hg^{2+} , Ag^+ and Silver Nanoparticles**Authors** : Ahmed S. Al-Kady, M. Gaber, Mohamed M. Hussein and El-Zeiny M. Ebeid**Published In** : Physical Chemistry A**ISSN** : 1520-5215**Impact Factor** : 2.87**Abstract** :

Fluorescence enhancement by factors of 5-12 times 8-alkyl thiourido-7-ethoxy-4-methyl coumarin derivatives was observed upon complexation with Hg^{2+} , Ag^+ and Ag nanoparticles. The study reveals a chelation enhanced fluorescence (CHEF) mechanism with the formation of 1:2 complexes in Hg^{2+} /coumarin derivatives and 1:1 complexes in Ag^+ /coumarin derivatives. The activation parameters of the complexation processes were evaluated with energy of activation values in the case of Ag^+ being nearly twice those in the case of Hg^{2+} complexation. Isokinetic studies indicate an enthalpy-controlled mechanism in the Hg^{2+} /coumarin derivatives complex formation. No fluorescence enhancement was observed with Fe^{3+} , Co^{2+} , Ni^{2+} , Cu^{2+} , Zn^{2+} , Cd^{2+} , La^{3+} and Ce^{3+} , making the present coumarin thiourea derivatives selective chemosensors of both Hg^{2+} and Ag^+ ions with different complexation time scales between these two ions. Fluorescence enhancement of the studied coumarin thiourea derivatives using silver nanomaterials occurs almost instantaneously and can be induced by silver nanoparticles in the picomolar (pM) concentration ranges.

Keywords :

Fluorescence enhancement; Mercury and silver ions chemosensors; Coumarin-thiourea; Silver nanoparticles; Isokinetic relationships.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ahmed H. H. Elshafeey****Title** : Optimization of Budesonide Compression-Coated Tablets for Colonic Delivery**Authors** : Soad A. Yehia, Ahmed H. Elshafeey, Ibrahim Sayed and Ahmed H. Shehata**Published In** : AAPS PharmSciTech**ISSN** : 1530-9932**Impact Factor** : 1.4**Abstract** :

The purpose of this study was to formulate budesonide (BUD) compression-coated tablets for colonic specific delivery. Pectin and guar gum were used as enzyme-dependent polymers. For comparison purposes, both pH- and time-dependent polymers were also tried. In vitro release studies were carried out at different pH (1.2, 6.8 and 7.4). Therapeutic efficacy of the prepared tablets compared to commercially available capsules and enema were evaluated in trinitrobenzenesulfonic acid-induced rabbit colitis model. In pH-dependent polymers, Eudragit (EUD) S100/EUD L100 (1:1) released 45.58% in the target area (colon). For time-dependent polymers, decreasing cellulose acetate butyrate (CAB) ratio increased the release in both pH 6.8 and 7.4 till it reached 40.58% and 93.65%, respectively, for 25% CAB. In enzyme-dependent polymers, increasing pectin ratio to 75% retarded the release (4.59% in pH 6.8 and 54.45% in pH 7.4) which was significantly enhanced to 99.31% using pectinolytic enzyme.

Formula F14 coated with 75% pectin significantly reduced the inflammatory cells in the connective tissue core of the colon of the treated group and significantly decreased myeloperoxidase activity (3.90 U/g tissue weight). This study proved that BUD compression-coated with 75% pectin may be beneficial in the treatment of inflammatory bowel disease .

Keywords :

Budesonide; Colon-targeting; Compression coat; Guar gum; Pectin; Tablets; TNBS-induced rabbit colitis.

Faculty of Pharmacy

Dept. : Pharmaceutics

Name : **Ahmed H. H. Elshafeey**



Title : Utility of Nanosized Microemulsion for Transdermal Delivery of Tolterodine Tartrate: Ex-Vivo Permeation and In-Vivo Pharmacokinetic Studies

Authors : Ahmed H. Elshafeey, Amany O. Kamel and Mohsen M. Fathallah.

Published In : Pharmaceutical Research

ISSN : 0724-8741

Impact Factor : 4.2

Abstract :

Purpose: The aim of this work was to investigate the feasibility of using nanosized microemulsion for transdermal delivery of tolterodine tartrate.

Methods: The effect of three microemulsions formed by Labrasol: Plurol (3:1), isopropyl myristate and water on the permeation of tolterodine through miniature pig skin was studied in vitro using Franz diffusion cell. For comparison purpose, the effect of different vehicles on the permeation was also studied. Drug pharmacokinetics was studied after transdermal application to human volunteers compared to the commercial oral dosage form using a newly developed LC-MS/MS assay.

Results: The vehicle PEG 400: Phosphate buffer pH 7.4 in the ratio of 1:1 significantly enhanced tolterodine permeation across pig skin. The microemulsion system (ME3) containing the highest amount of water (50%) significantly enhanced permeation with Q24 of 0.746 mg.cm⁻². In contrast to oral delivery, a sustained activity was observed over a period of 72 h after transdermal application of this microemulsion to human volunteers with significant lower C_{max} (1.06 ng/ml), delayed T_{max} (3.17 h) and higher MRT value (147.82 h) (p<0.05).

Conclusion: This sustained activity was due to the controlled release of drug into the systemic circulation with expected increase in the patient compliance and prevention of nocturnal enuresis.

Keywords :

LC/MS/MS; Microemulsion; Pharmacokinetics; Tolterodine tartrate; Transdermal.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ahmed H. H. Elshafeey****Title** : A Single-Dose, Randomized, Two-Way Crossover Study
Comparing Two Olanzapine Tablet Products in Healthy Adult Male Volunteers Under Fasting Conditions**Authors** : A. H. Elshafeey, M. A. Elsherbiny and M. M. Fathallah.**Published In** : Clinical Therapeutics**ISSN** : 0149-2918**Impact Factor** : 3.6**Abstract** :

Background: Olanzapine is a psychotropic agent that belongs to the thienobenzodiazepine class.

Objective: The aim of this study was to assess the bioequivalence of 2 commercial 10-mg tablet formulations of olanzapine by statistical analysis of the pharmacokinetic parameters C_{max} , AUC_{0-72} from 0 to 72 hours after dosing (AUC_{0-n}) and $AUC_{0-\infty}$ as required by the Egyptian health authority for the marketing of a generic product.

Methods: This bioequivalence study was carried out in healthy male volunteers using a single-dose, randomized, 2-way crossover design under fasting conditions. Statistical analysis of the pharmacokinetic parameters C_{max} , AUC_{0-n} and $AUC_{0-\infty}$ was conducted to determine bioequivalence (after logtransformation of data using analysis of variance and 90% CIs) and to gain marketing approval in Egypt. The formulations were considered to be bioequivalent if the log-transformed ratios of the 3 pharmacokinetic parameters were within the predetermined bioequivalence range (ie, 80%-125%), as established by the US Food and Drug Administration (FDA). Both the test product (Trademark: Integrol® [Global Napi Pharmaceuticals, Cairo, Egypt]) and the reference product (Trademark: Zyprexa® [Eli Lilly and Company, Basingstoke, Hampshire, United Kingdom]) were administered as 10-mg tablets with 240 mL of water after an overnight fast on 2 treatment days, separated by a 2-week washout period. After dosing, serial blood samples were collected for 72 hours. Plasma samples were analyzed using a sensitive, reproducible and accurate liquid chromatography-tandem mass spectrometry method capable of quantitating olanzapine in the range of 0.167 to 16.7 ng/mL, with a lower limit of quantitation of 0.167 ng/mL. Adverse events were reported by the volunteers as instructed or observed by the resident physician and were recorded, tabulated and evaluated.

Results: Twenty-four healthy adult male volunteers participated in this study. Their mean (SD) age was 24.7 (6.2) years (range, 19-41 years), mean weight was 73.4 (6.7) kg (range, 64-89 kg) and mean height was 174.25 (4.6) cm (range, 168-186 cm). Values for C_{max} , AUC_{0-n} , $AUC_{0-\infty}$, T_{max} , $t_{1/2}$ and the terminal disposition rate constant were found to be in agreement with previously reported values. The differences between the 2 products did not reach statistical significance at $p < 0.05$ (90% CIs: C_{max} 101.82-124.79; AUC_{0-t} 93.36-102.04; and $AUC_{0-\infty}$ 88.57-101.77). The test/reference ratio of these parameters was within the acceptance range of the FDA criterion for bioequivalence. Both formulations were apparently well absorbed from the gastrointestinal tract (ie, no specific gastrointestinal tract-related adverse events were reported).

Conclusions: In this small study in healthy male volunteers, there were no statistically significant differences in any of the calculated pharmacokinetic parameters between the 10-mg test and reference tablets of olanzapine. The 90% CIs for the ratios of mean C_{max} , AUC_{0-t} and $AUC_{0-\infty}$ were within the range of 80% to 125% (using log-transformed data), meeting the FDA regulatory criterion for bioequivalence.

Keywords:

Bioequivalence; Olanzapine; LC-MS/MS; Pharmacokinetics; Antipsychotic.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ehab Rasmy Bendas****Title** : Preparation and Evaluation of Self-nanoemulsifying Tablets of Carvedilol**Authors** : Mahmoud E. A, Bendas E. R. and Mohamed M. I.**Published In** : AAPS PharmSciTech 10 (1): 183-192 (2009)**ISSN** : 1530-9932**Impact Factor** : 0.0**Abstract** :

The purpose of this study was to combine the advantages of self-nanoemulsifying drug delivery systems and tablets as a conventional dosage form emphasizing the excipients' effect on the development of a new dosage form. Systems composed of HCO-40, Transcutol® HP and medium-chain triglyceride were prepared. Essential properties of the prepared systems regarding carvedilol solubility, a model drug and self-emulsification time were determined. In order to optimize self-nanoemulsifying drug delivery systems (SNEDDS), formulation dispersion–drug precipitation test was performed in the absence and presence of cellulosic polymers. Furthermore, SNEDDS was loaded onto liquisolid powders. P-glycoprotein (P-gp) activity of the selected SNEDDS was tested using HCT-116 cells. Carvedilol showed acceptable solubility in the selected excipients. It also demonstrated improvement in the stability upon dilution with aqueous media in the presence of cellulosic polymers. Use of granulated silicon dioxide improved the physical properties of liquisolid powders containing SNEDDS. It improved the compressibility of the selected powders and the tested SNEDDS showed marked P-gp inhibition activity. Prepared self-nanoemulsifying tablet produced acceptable properties of immediate-release dosage forms and expected to increase the bioavailability of carvedilol.

Keywords :

Carvedilol; Dry nanoemulsion; Granulated silicon dioxide; Liquisolid; Tablets; SEDDS; SNEDDS; SNET.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ehab Rasmy Bendas****Title** : Development and in Vitro Evaluation of Mesalamine Delayed Release Pellets and Tableted Reservoir-Type Pellets**Authors** : Ehab R. Bendas, J. Mark Christensen and James W. Ayres**Published In** : Drug Development and Industrial Pharmacy**ISSN** : 0363-9045**Impact Factor** : 0.0**Abstract** :

Background: The basic objective of this study was to develop a novel technique that aids in compaction of coated pellets into tablets and obtain a release pattern from compressed pellets resembling the same pattern before compression. **Method:** Multi-unit dosage forms of mesalamine targeted to the colon were formulated by extrusion-spheronization and then coated with Eudragit S (30%). These pellets were filled into gelatin capsules or further formulated and compressed into tablets. Tablets for colonic delivery of mesalamine were prepared by mixing the coated beads with cushioning agents like stearic acid and Explotab, or by applying an additional coat of gelatin (4% weight gain) onto the Eudragit S coated pellets and then compressing into tablets (tableted reservoir-type pellets). Then additional coating of the tablets prepared by the coating technique was applied utilizing Eudragit L 100-55 (5% weight gain). **Results:** This technique provides additive protection for the coated beads to withstand the compression force during tableting. Excellent in vitro dissolution results were obtained, which were comparable to the results of the release of mesalamine from uncompressed beads filled in capsules. Mesalamine release from the capsules was 0.3% after 2 hours in gastric pH, 0.37% was released after an additional 1 hour in pH 6 and 89% was released after 1.5 hours in colonic pH 7.2. **Conclusion:** Various formulation and process parameters have to be optimized in order to obtain tableted reservoir-type pellets having the same release properties as the uncompressed pellets. The coating technique delays the release of mesalamine until the beads reach the terminal ileum and colon. Once released in the colon, mesalamine is minimally absorbed and can act locally to treat ulcerative colitis.

Keywords :

Delayed-release; Eudragit S; Extrusion-spheronization; Gelatin; Mesalamine; Tableted reservoir-type pellets.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ehab Rasmy Bendas****Title** : Two Different Approaches for the Prediction of In Vivo Plasma Concentration-Time Profile from In Vitro Release Data of Once Daily Formulations of Diltiazem Hydrochloride**Authors** : Ehab R. Bendas**Published In** : Archives of Pharmacal Research 32 (9): 1317-1329 (2009)**ISSN** : 0253-6269**Impact Factor** : 0.0**Abstract** :

The aim of this study was to employ two different mathematical approaches: first, a convolution approach using computer software; second, a mathematical calculation exploiting Wagner-Nelson calculation to predict in vivo plasma concentration - time profile from the in vitro release study for the once daily formulations of a model drug diltiazem hydrochloride. The once daily extended release tablets (120 mg) were prepared by the wet granulation technique. Ethanol or ethanolic solutions of ethylcellulose (N22), were used as granulating agents along with hydrophilic matrix polymers like hydroxypropyl methylcellulose (HPMC) (K 15M). The granules showed satisfactory flow properties, compressibility, moisture content and drug content. All the tablet formulations showed acceptable properties and complied with pharmacopeial limits. The in vitro drug release study revealed that formula F7-T which contains drug : HPMC ratio 1:1 and 20 mg of ethylcellulose was able to sustain the drug release for 24 h and satisfied the USP dissolution limits. Fitting the in vitro drug release data to Korsmeyer-Peppas equation indicated that the mechanism of drug release could be zero-order. The capsule formulation F14-C which consists of drug : HPMC ratio 1:2, 12 mg of ethylcellulose and 20 mg of polyox 100 showed in vitro drug release similar to the tablet F7-T using the similarity factor (f_2). The mechanism of drug release could be coupled diffusion and polymer matrix relaxation. The percent dissolved data from the two formulations were used as input function to predict the in vivo plasma data by the two approaches (Convolution by Kinetica® software and Wagner-Nelson calculation). The two methods were validated by prediction of plasma data from in vitro release data of FDA approved 300 mg extended release capsule. Prediction errors were estimated for C_{max} and area under the curve (AUC) to determine the validity of the methods. The percent prediction error for each parameter is not exceeding 15%.

Keywords :

Convolution; Wagner-Nelson; In vitro release; In vivo prediction; Extended release; Diltiazem hydrochloride.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Ehab Rasmy Bendas****Title** : Intranasal Microemulsion of Sildenafil Citrate: In Vitro Evaluation and In Vivo Pharmacokinetic Study in Rabbits**Authors** : Elshafeey, A. H., E. R. Bendas and O. H. Mohamed**Published In** : AAPS PharmSciTech 10 (2): 361-367 (2009)**ISSN** : 1530-9932**Impact Factor** : 0.0**Abstract** :

The purpose of the present study was to prepare intranasal delivery system of sildenafil citrate and estimate its relative bioavailability after nasal administration in rabbits to attain rapid onset of action with good efficacy at lower doses. Sildenafil citrate saturated solubility was determined in different solvents, cosolvents and microemulsion systems. For nasal application, sildenafil citrate was formulated in two different systems: the first was a cosolvent system (S3) of benzyl alcohol / ethanol / water / Transcutol / taurodeoxy cholate / Tween 20 (0.5:16.8:47.7:15.9:1:18.1% w/w). The second was a microemulsion system (ME6) containing Oleic acid / Labrasol / Transcutol / water (8.33:33.3:16.66:41.66% w/w). The prepared systems were characterized in relation to their clarity, particle size, viscosity, pH and nasal ciliotoxicity. In vivo pharmacokinetic performance of the selected system ME6 (with no nasal ciliotoxicity) was evaluated in a group of six rabbits in a randomized crossover study and compared to the marketed oral tablets. The targeted solubility (>20 mg/ml) of sildenafil citrate was achieved with cosolvent systems S1, S3 and S5 and with microemulsion systems ME3–ME6. The saturated solubility of sildenafil citrate in cosolvent system S3 and microemulsion system ME6 were 22.98 ± 1.26 and 23.79 ± 1.16 mg/ml, respectively. Microemulsion formulation ME6 showed shorter t_{max} (0.75 h) and higher $AUC(0-\infty)$ (1,412.42 ng h/ml) compared to the oral tablets which showed t_{max} equals 1.25 h and $AUC(0-\infty)$ of 1,251.14 ng h/ml after administration to rabbits at dose level of 5 mg/kg. The relative bioavailability was 112.89%. In conclusion, the nasal absorption of sildenafil citrate microemulsion was found to be fast, indicating the potential of nasal delivery instead of the conventional oral administration of such drug.

Keywords:

Bioavailability; Intranasal; Microemulsion; Nasal; Sildenafil citrate; Solubilization.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Rehab N. Shamma****Title** : In Vitro and in Vivo Evaluation of Nimesulide Lyophilized Orally Disintegrating Tablets**Authors** : Raguia A. Shoukri, Iman S. Ahmed and Rehab N. Shamma**Published In** : European Journal of Pharmaceutics and Biopharmaceutics**ISSN** : 0939-6411**Impact Factor** : 3.344**Abstract** :

Development of a lyophilized orally disintegrating tablet (ODT) that enhanced the in vitro dissolution and in vivo absorption of nimesulide (NM), a drug with poor solubility and poor bioavailability, is presented. The ODTs were prepared by freeze-drying an aqueous dispersion of NM containing a matrix former, a sugar alcohol and a collapse protectant. In addition, different disintegration accelerators were tested. The influence of formulation parameters on the disintegration time and in vitro dissolution of NM from ODTs along with other tablet characteristics was investigated. Results obtained from disintegration and dissolution studies showed that lyophilized ODTs disintegrated within few seconds and showed significantly faster dissolution rate of NM compared to the plain powder drug and NM in commercially available immediate release tablet Sulide®. The ODTs were also examined using differential scanning calorimetry, X-ray diffraction and scanning electron microscope. Stability results, after 12-month storage of selected ODTs at 25 °C and 60% relative humidity, were satisfactory. The extent of absorption of NM from a selected ODT when compared to an conventional immediate release tablet as a reference after administration of 100 mg oral dose of NM was determined in healthy subjects using a randomized crossover design. In this study, the rate of absorption of NM from ODT was faster than that from the reference tablet, had a significantly higher ($p = 0.012$) peak plasma concentration and shortened time to C_{max} by 1 h ($p = 0.029$). The extent of absorption expressed by AUC was 62% larger when compared to the commercially available tablet.

Keywords :

Nimesulide; Freeze-drying; Orally disintegrating tablets; In-vivo absorption; Bioavailability; Dissolution rate.

Faculty of Pharmacy

Dept. : Pharmaceutics

Name : **Mahmoud M. Ghorab**



Title : Polymeric Matrix System for Prolonged Delivery of Tramadol Hydrochloride, Part II: Biological Evaluation

Authors : H. O. Ammar, M. Ghorab, S. A. El-Nahhas and R. Kamel

Published In : American Association of Pharmaceutical Sciences

ISSN : 1530-9932

Impact Factor : 2.611

Abstract :

This study is an extrapolation of our previous one (part I) concerned with the formulation and physicochemical evaluation of a novel, simple, monolayer, easy-to-use, cost-effective, and aesthetically acceptable bioadhesive transdermal patch for tramadol hydrochloride. The current work is focused on bioadhesion, skin tolerability and pharmacodynamic evaluation. Using naked rat skin, chitosan–Eudragit® NE30D (1:1) film attained best bioadhesive properties. During in vivo studies, it also showed a significantly extended analgesic effect compared to both oral formula and chitosan single polymeric film using the hot plate test method. All the polymeric films were skin tolerable for the intended period of application according to the Draize test. The success of our approach can proudly, positively contribute into the world of pain management and arguably push transdermal delivery to realize its great promise.

Keywords :

Analgesia; Bioadhesion; Pain; Tramadol hydrochloride; Transdermal.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Mahmoud M. Ghorab****Title** : Polymeric Matrix System for Prolonged Delivery of Tramadol Hydrochloride, Part I: Physicochemical Evaluation**Authors** : H. O. Ammar, M. Ghorab, S. A. El-Nahhas and R. Kamel**Published In** : American Association of Pharmaceutical Sciences**ISSN** : 1530-9932**Impact Factor** : 2.611**Abstract** :

Management of moderate or severe chronic pain conditions is the burden of clinicians dealing with patients trying to improve their quality of life and diminish their suffering. Although not a new opioid, tramadol has been recently rediscovered and widely used; this may be due to its favorable chronic safety and dependence profiles together with its high potency. Tramadol is a centrally acting analgesic with half-life of ~6 h; therefore, it requires frequent dosing. It is freely soluble in water; hence, judicious selection of retarding formulations is necessary. The current study is focused on the innovation of a novel simple, monolayer, easy-to-use, cost-effective and aesthetically acceptable bioadhesive transdermal delivery system overcoming the defects of the conventional "patch" as carrier system for tramadol, ensuring its adequate delivery, along with the physicochemical evaluation of the designed formulations. Monolithic tramadol matrix films of chitosan, different types of Eudragit® and binary mixtures of both were prepared. As a single-polymer film, chitosan film showed best properties except for somewhat high moisture uptake capacity, insufficient strength and rapid release and permeation. Polymer blends were monitored in order to optimize both properties and performance. Promising results were obtained, with chitosan–Eudragit® NE30D (1:1) film showing the most desirable combined, sufficiently rapid as well as prolonged release and permeation profiles along with satisfactory organoleptic and physicochemical properties.

Keywords :

Matrix system; Pain; Polymers; Tramadol hydrochloride.

Faculty of Pharmacy

Dept. : Pharmaceutics

Name : **Mahmoud M. Ghorab**



Title : Nanoemulsion as a Potential Ophthalmic Delivery System for Dorzolamide Hydrochloride

Authors : H. O. Ammar, M. Ghorab, H. A. Salama and A. A. Mahmoud

Published In : American Association of Pharmaceutical Sciences

ISSN : 1530-9932

Impact Factor : 2.611

Abstract :

Dilutable nanoemulsions are potent drug delivery vehicles for ophthalmic use due to their numerous advantages as sustained effect and high ability of drug penetration into the deeper layers of the ocular structure and the aqueous humor. The aim of this article was to formulate the antiglaucoma drug dorzolamide hydrochloride as ocular nanoemulsion of high therapeutic efficacy and prolonged effect. Thirty-six systems consisting of different oils, surfactants and cosurfactants were prepared and their pseudoternary-phase diagrams were constructed by water titration method. Seventeen dorzolamide hydrochloride nanoemulsions were prepared and evaluated for their physicochemical and drug release properties. These nanoemulsions showed acceptable physicochemical properties and exhibited slow drug release. Draize rabbit eye irritation test and histological examination were carried out for those preparations exhibiting superior properties and revealed that they were nonirritant. Biological evaluation of dorzolamide hydrochloride nanoemulsions on normotensive albino rabbits indicated that these products had higher therapeutic efficacy, faster onset of action and prolonged effect relative to either drug solution or the market product. Formulation of dorzolamide hydrochloride in a nanoemulsion form offers, thus, a more intensive treatment of glaucoma, a decrease in the number of applications per day and a better patient compliance compared to conventional eye drops.

Keywords :

Dorzolamide hydrochloride; Glaucoma; Nanoemulsion; Pharmacodynamic; Physicochemical characterization.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Mona Hassan M. Hassan****Title** : Design and In Vitro Evaluation of Novel Sustained-Release Double-Layer Tablets of Lornoxicam: Utility of Cyclodextrin and Xanthan Gum Combination**Authors** : Yassin E. Hamza and Mona H. Aburahma**Published In** : AAPS PharmSciTech**ISSN** : 1530-9932**Impact Factor** : 1.445**Abstract** :

The objective of the present study was to develop new directly compressed, double-layer tablets (DLTs) of lornoxicam, a highly potent nonsteroidal anti-inflammatory drug with short half-life, that are characterized by initial burst drug release in the stomach and comply with the release requirements of sustained-release products. Each of the proposed DLTs is composed of a fast-release layer and a sustained-release layer, anticipating rapid drug release that starts in the stomach to rapidly alleviate the symptoms and continues in the intestine to maintain protracted analgesic effect. An amorphous, freeze-dried inclusion complex of lornoxicam with hydroxypropyl- β -cyclodextrin, present in 1:2 (drug/cyclodextrin) molar ratio, was employed in the fast-release layer to enhance the dissolution of lornoxicam in the stomach and assure rapid onset of its analgesic effect. Xanthan gum (XG), a hydrophilic matrix-forming agent, was integrated in the sustained-release layer to provide appropriate sustainment of drug release. The weight ratios between the sustained-release layer and fast-release layer present in DLTs were adjusted to reach optimal formulations. DLTs composed of sustained-release layer (40% XG) to fast-release layer in 2:1 weight ratio and those composed of sustained-release layer (50% XG) to fast-release layer in 1:1 weight ratio showed the desired release profile. The drug contained in the fast-release layer showed an initial burst drug release of more than 30% of its drug content during the first 30 min of the release study followed by gradual release of the drug for a period of 8 h.

Keywords :

Cyclodextrins; Double-layer tablets; Lornoxicam; Sustained release; Xanthan gum.

Faculty of Pharmacy**Dept.** : Pharmaceutics**Name** : **Mona Hassan M. Hassan****Title** : Innovation of Novel Sustained Release Compression-coated Tablets for Lornoxicam: Formulation and in Vitro Investigations**Authors** : Yassin E. Hamza and Mona H. Aburahma**Published In** : Drug Development and Industrial Pharmacy**ISSN** : 1520-5762**Impact Factor** : 1.05**Abstract** :

Objective: The objective of this study was to modify the release characteristics of lornoxicam, a highly potent nonsteroidal anti-inflammatory drug, by preparing compression-coated tablets (CCTs) that provide complete drug release that starts in the stomach to rapidly alleviate the painful symptoms and continues in the intestine to maintain prolonged analgesic effect as well as meets the reported sustained release specifications. **Methods:** Each of the prepared CCTs was composed of a sustained release tablet core and an immediate release coat layer. Amorphous, well-characterized, freeze-dried solid dispersion of lornoxicam with polyvinylpyrrolidone K-30 was employed in the coat layer to attain an initial rapid dissolution of lornoxicam in the stomach, assuring rapid onset of analgesic effect. Compritol® ATO 888, a lipophilic matrix-forming material, was included in the core tablets to sustain lornoxicam release. Lactose was also incorporated into these core tablets to ensure complete release of lornoxicam in a time period comparable to the gastrointestinal residence time. **Results:** All the prepared CCTs showed acceptable physical properties that complied with compendial requirements. On the basis of in vitro drug release studies, performed in simulated gastric and intestinal fluids in sequence to mimic the gastrointestinal transit, CCTs belonging to formulations F3 CCTs and F4 CCTs were able to show the desired release profile. **Conclusion:** This study demonstrated the possibility of modulating lornoxicam release using CCTs to meet the reported sustained release specifications.

Keywords :

Compression-coated tablets; Compritol® ATO 888; Lactose; Lornoxicam; Polyvinylpyrrolidone K-30; Solid dispersion; Sustained release.

Faculty of Pharmacy

Dept. : Pharmaceutics

Name : **Mona Hassan M. Hassan**



Title : Design and in Vitro Evaluation of Novel Sustained-release Matrix Tablets for Lornoxicam Based on the Combination of Hydrophilic Matrix Formers and Basic pH-modifiers

Authors : Yassin E. Hamza and Mona H. Aburahma

Published In : Pharmaceutical Development and Technology

ISSN : 1097-9867

Impact Factor : 0.9

Abstract :

The short half-life of lornoxicam, a potent non-steroidal anti-inflammatory drug, makes the development of sustained-release (SR) forms extremely advantageous. However, due to its weak acidic nature, its release from SR delivery systems is limited to the lower gastrointestinal tract which consequently leads to a delayed onset of its analgesic action. Accordingly, the aim of this study was to develop lornoxicam SR matrix tablets that provide complete drug release that starts in the stomach to rapidly alleviate the painful symptoms and continues in the intestine to maintain protracted analgesic effect as well as meets the reported SR specifications. The proposed strategy was based on preparing directly compressed hydroxypropylmethylcellulose matrix tablets to sustain lornoxicam release. Basic pH-modifiers, either sodium bicarbonate or magnesium oxide, were incorporated into these matrix tablets to create basic micro-environmental pH inside the tablets favorable to drug release in acidic conditions. All the prepared matrix tablets containing basic pH-modifiers showed acceptable physical properties before and after storage. Release studies, performed in simulated gastric and intestinal fluids used in sequence to mimic the GI transit, demonstrate the possibility of sustaining lornoxicam release by combining hydrophilic matrix formers and basic pH-Modifiers to prepare tablets that meet the reported sustained-release specifications.

Keywords :

Lornoxicam; Sustained-release; Compatibility; Basic pH-modifiers; Matrix tablets.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Ahmed Abd El Bary****Title** : Comparative Effects of Different Cellulosic-based Directly Compressed Orodispersible Tablets on Oral Bioavailability of Famotidine**Authors** : A. Abdelbary, A. H. Elshafeey and G. Zidan**Published In** : Carbohydrate Polymers**ISSN** : 0144-8617**Impact Factor** : 2.7**Abstract** :

Famotidine is a potent H₂-receptor antagonist most commonly used by elderly patients. Orodispersible tablets (ODT) are gaining popularity over conventional tablets due to their convenience and suitability for patients having dysphagia. The purpose of this study is to prepare famotidine ODT using the economic direct-compression method. A 32 full factorial design was used to evaluate the influence of different excipients on the properties and in vitro dissolution of famotidine ODT. Two factors were studied for their qualitative effects, namely, disintegrants and diluents. Disintegrants were studied in three levels viz. Ac-Di-Sol, sodium starch glycolate (Primojel) and low-substituted hydroxypropyl cellulose (L-HPC). Fillers were studied in three levels viz. mannitol, spray dried lactose and Avicel PH 101. The ODTs were prepared by direct compression and were evaluated for hardness, drug content, uniformity of weight, in vitro disintegration time, oral disintegration time, wetting time and in vitro dissolution. Maximum dissolution and minimum oral disintegration time (11.4 s) were observed in F7 prepared using L-HPC and mannitol. Furthermore, in human volunteers it showed significant increase in bioavailability compared to Servipep® with mean AUC(0–1) 117.1 ng/ml and 82.71 ng/ml, respectively and its relative bioavailability was 141.57%. Hence, ODT (F7) could possibly be used to overcome the drawbacks of conventional famotidine tablets in elderly patients with significant increase in oral bioavailability.

Keywords :

Orodispersible tablets; Famotidine; L-HPC; Mannitol; Ac-Di-Sol; Bioavailability.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Galal El-Mahrouk****Title** : Formulation and Evaluation of Meloxicam Orally Dispersible Capsules**Authors** : G. El- Mahrouk, M. H. Aboul- Einien and N. Adel Elkasabgy**Published In** : Asian Journal of Pharmaceutical Sciences**ISSN** : 00-00**Impact Factor** : 0.0**Abstract** :

Purpose: Meloxicam is a non-steroidal anti-inflammatory drug with highly variable bioavailability due to its poor aqueous solubility and dissolution. This work aimed to improve meloxicam bioavailability by formulating it in orodispersible capsules (ODC) containing soluble complex of the drug with β -cyclodextrin. **Methods:** Complexes were prepared by different methods and characterized by differential scanning calorimetry, X-ray diffraction, infrared spectroscopy and dissolution efficiency studies. ODC shells were prepared from conventional hard gelatin capsule shells by freeze drying and were evaluated by image analysis microscopy and moisture content estimation. Formulae containing the freeze- dried complex and different fillers were prepared and characterized for their moisture content and moisture absorption behavior. The ODCs were in- vitro and in- vivo evaluated in comparison with meloxicam commercial tablets (Mobic®). **Results:** Inclusion complexes between meloxicam and β - cyclodextrin were formed and the dissolution efficiency was greatly enhanced by the freeze dried product. The formulae containing mannitol or anhydrous lactose as fillers were found to be superior and disintegrated within 23 seconds. The dissolution efficiency after 60 minutes was found to exceed 98% for the ODCs while its value was only 79% for Mobic®. In comparison with Mobic®, the tested ODCs showed a 1.7- folds increase in average C_{max} , a 0.5- folds decrease in average t_{max} and a 1.4- folds increase in average AUC_{0-48} of meloxicam. **Conclusion:** Orodispersible capsules containing meloxicam/ β - cyclodextrin freeze- dried complex potentially improve meloxicam bioavailability.

Keywords :Meloxicam; β - cyclodextrin; Freeze- drying; Orodispersible capsules; Dissolution efficiency; Bioavailability.

Faculty of Pharmacy

Dept. : Pharmaceutics and Industrial Pharmacy

Name : **Hanan Mohamed El Laithy**



Title : Novel Transdermal Delivery of Timolol Maleate Using Sugar Esters: Preclinical and Clinical Studies

Authors : Hanan M. El-Laithy

Published In : European Journal of Pharmaceutics and Biopharmaceutics

ISSN : 0939-6411

Impact Factor : 3.9

Abstract :

The feasibility of matrix controlled transdermal patch based on sugar fatty acid ester (SE) as penetration and absorption enhancer containing Timolol maleate (TM) was investigated. The influence of fatty acid type, chain length and hydrophile–lipophile balance (HLB) on the in vitro drug release as well as its permeation across hairless rat skin were studied and compared aiming to select a patch formula for clinical performance. Skin irritation induced by SE patch was evaluated by visual scoring, color reflectance measurements and non-invasive transepidermal water loss (TEWL) technique. The results indicated that among different SEs tried, laurate SE with shorter fatty acid chain length and higher HLB value significantly increased the amount of TM liberated from the patch ($99 \pm 2.1\%$) and its permeation across rat skin ($86 \pm 4.3\%$). The total drug permeation and flux values were approximately 5-fold greater compared to SE free patch. The extent of absorption of TM–SE patch expressed by AUC was 64% larger as compared to the oral solution with steady plasma concentration over 18 h and relative bioavailability (Frel) of 163%. The developed patch was well tolerated by all the subjects with only moderate skin irritation, which was recovered in 24 h after patch removal. The results are very encouraging and offer an alternative approach to maintain higher, prolonged and controlled blood level profile of the drug over 18–24 h.

Keywords :

Sugar esters; Transdermal delivery; Timolol maleate; Transepidermal water loss; Skin permeation.

Faculty of Pharmacy

Dept. : Pharmaceutics and industrial pharmacy

Name : **Emad Basalious Bashir**



Title : Fluconazole Mucoadhesive Buccal Films: in vitro/in Vivo Performance

Authors : Soad A. Yehia, Omailma N. El-Gazayerly and Emad B. Basalious

Published In : Current Drug Delivery

ISSN : 1567-2018

Impact Factor : 0.0

Abstract :

Fluconazole mucoadhesive buccal films were prepared using film forming polymers namely; hydroxypropylmethyl cellulose (HPMC), hydroxyethyl cellulose (HEC), chitosan, Eudragit and sodium alginate (SALG) either alone or in combination with bioadhesive polymers. The bioadhesive polymers studied were sodium carboxymethyl cellulose (SCMC), Carbopol 974P and polycarbophil (AA-A). The prepared films were characterized by means of film thickness, surface pH, swelling capacity, in vitro adhesion, in vivo residence time, in vitro drug release and in vivo drug release to determine the amount of drug release from selected film formulae using microbiological assay and HPLC. Optimum release behavior, convenient bioadhesion, acceptable elasticity were exhibited by film containing 2% HPMC and 1% SCMC (fresh or stored for 6 months). Determination of the amount of drug released in saliva after application of the selected fluconazole films confirmed the ability of the film to deliver the drug over a period of approximately 300 minutes and to reduce side effects and possibility of drug interaction encountered during systemic therapy of fluconazole, which would be beneficial in the case of oral candidiasis.

Keywords :

Mucoadhesive film; Fluconazole; Work of adhesion and oral candidiasis.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Ghada Ahmed Abdelbary****Title** : Diazepam-Loaded Solid Lipid Nanoparticles: Design and Characterization**Authors** : Ghada Abdelbary and Rania H. Fahmy**Published In** : AAPS PharmSciTech**ISSN** : 1530-9932**Impact Factor** : 1.445**Abstract** :

The aim of the present study was to investigate the feasibility of the inclusion of a waterinsoluble drug (diazepam, DZ) into solid lipid nanoparticles (SLNs), which offer combined advantages of rapid onset and prolonged release of the drug. This work also describes a new approach to prepare suppositories containing DZ-loaded SLN dispersions, as potential drug carrier for the rectal route. Modified high-shear homogenization and ultrasound techniques were employed to prepare SLNs. The effect of incorporation of different concentrations of Compritol® ATO 888 or Imwitor® 900K and Poloxamer 188 or Tween 80 was investigated. Results showed that varying the type or concentration of lipid matrix or surfactant had a noticeable influence on the entrapment efficiencies, particle size and release profiles of prepared SLNs. Differential scanning calorimetry and X-ray diffraction measurements showed that the majority of SLNs possessed less ordered arrangements of crystals than the corresponding bulk lipids, which was favorable for increasing the drug loading capacity. Transmission electron microscopy and laser diffractometry studies revealed that the prepared nanoparticles were round and homogeneous and 60% of the formulations were less than 500 nm. Additionally, SLN formulations showed significant ($P < 0.05$) prolonged release than DZ solution. The subsequent step encompassed the preparation and evaluation of SLN-based suppositories utilizing SLN formulations that illustrated optimal release profiles. The in vitro release of DZ from the suppositories prepared using DZ-loaded SLN dispersions (equivalent to 2 mg DZ) was significantly ($P < 0.05$) extended compared to suppositories containing 2 mg DZ free drug.

Keywords :

Diazepam; Formulation; High-shear homogenization; SLN-loaded suppositories; Solid lipid nanoparticles.

Faculty of Pharmacy

Dept. : Pharmaceutics and Industrial Pharmacy

Name : **Ghada Ahmed Abdelbary**



Title : Design and Evaluation of a Bioadhesive Patch for Topical Delivery of Gentamicin Sulphate

Authors : N. A. El-Gendy, G. A. Abdelbary, M. H. EL-Komy and A. E. Saafan

Published In : Current Drug Delivery 6: 50-57 (2009)

ISSN : 1567-2018

Impact Factor : 0.0

Abstract :

The use of aminoglycoside antibiotics for the topical treatment of gram positive and gram negative infections especially burns and wounds has increased markedly in recent years. Patch formulation for topical delivery can be advantageously used as an alternative to conventional topical dosage forms. The present study aims to prepare and evaluate gentamicin sulphate patches for topical application and to study the effect of different bioadhesive polymers on diverse characteristics of prepared patches. Drug patches were evaluated for weight and thickness uniformity, moisture absorption capacity, tensile strength and percentage elongation. In vitro release patterns of these patches were studied and analyzed. Skin irritation and susceptibility testing of gentamicin sulphate formulae were also evaluated and compared to commercially available gentamicin sulphate cream. The thickness of the films was found to be uniform. Tensile strength of the patches prepared using HPMC as bioadhesive polymer was the lowest compared to the other patches. The in vitro release of the patches followed a pattern close to diffusion model. Patches formulated using HPMC gave the most superior results as compared to other compositions.

Keywords :

Gentamicin sulphate; Bioadhesive; Patch; Topical delivery.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Mohamed Aly Haider****Title** : Influence of Polymer Structure and Biodegradation on DNA Release from Silk–Elastinlike Protein Polymer Hydrogels**Authors** : D. Hwang, V. Moolchandani, R. Dandu, M. Haider, J. Cappello and H. Ghandehari**Published In** : International Journal of Pharmaceutics**ISSN** : 0378-5173**Impact Factor** : 3.061**Abstract** :

Silk–elastinlike protein polymers (SELPs) of varying ratios and lengths of silk and elastin blocks capable of hydrogel formation were evaluated as matrices for controlled delivery of plasmid DNA. Influence of polymer structure, ionic strength of the media and gelation time on DNA release from two structurally related hydrogels, SELP-47K and SELP-415K, was evaluated. The influence of elastase-induced degradation on the swelling behavior and DNA release from these hydrogels was investigated. Results indicate that release is a function of polymer structure, concentration and cure time. SELP-415K which has twice the number of elastin units as that of SELP-47K demonstrated higher release than that of SELP-47K. DNA release from these hydrogels is an inverse function of polymer concentration and cure time, with higher release observed at lower polymer concentration and shorter cure time. Results indicate that ionic strength of the media governs the rate of release. An increase in swelling ratio was observed in the presence of elastase at 12 wt.% composition for both SELP analogs. Release in the presence of elastase was enhanced due to increased swelling ratio and loss of hydrogel integrity. These studies allude to the utility of recombinant techniques to control plasmid DNA release and biodegradation in SELP hydrogels.

Keywords :

Hydrogels; Controlled release; Biodegradation; Elastase; Gene delivery; Naked DNA .

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Mona H. Aboul-Einien****Title** : Formulation and Evaluation of Felodipine in Softgels with a Solubilized Core**Authors** : Mona H. Aboul-Einien**Published In** : Asian Journal of Pharmaceutical Sciences 4 (3): 144-160 (2009)**ISSN** : 00-00**Impact Factor** : 0.0**Abstract** :

Purpose: Felodipine is a calcium channel antagonist which is water insoluble and only 15% bioavailable. In this study softgels, with solubilized- drug core, were used to improve the solubility and consequently the bioavailability of felodipine. Drug solutions were prepared using both cosolvency and micellar solubilization. **Methods:** The optimum dielectric constant (DEC) for maximum drug solubility was first determined and five cosolvent systems were constructed to fulfill such DEC. Micellar solubilization was achieved by incorporating surfactants of different types (anionic, cationic and non- ionic) in the solvent systems. The drug solutions were filled in softgels, which were subjected to in vitro and in vivo studies. **Results:** Dissolution tests (under sink or non- sink conditions) revealed a correlation between the composition of the softgel core fill liquid and drug dissolution parameters. The incorporation of water in the fill formula as well as the use of ingredients with low hygroscopicity was found to be essential to minimize water migration to the fill liquid during storage. In vivo studies showed rapid and enhanced absorption of felodipine from solubilized core softgels compared to control drug powder filled in hard gelatin capsules. The total amount of drug absorbed over 24- hour period was pronouncedly enhanced (1.6- folds) for softgels compared to control capsules. **Conclusions:** It could be concluded that formulation of felodipine in solubilized- core softgels succeeded in enhancing the rate & extent of dissolution of such insoluble drug. In addition the drug absorption was improved leading to improved bioavailability.

Keywords :

Felodipine; Softgels; Dielectric constant; Micellar solubilization; Bioavailability.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Noha Nabil Salama****Title** : Intradialytic Administration of Daptomycin in End Stage Renal Disease Patients on Hemodialysis**Authors** : Noha N. Salama, J. H. Segal, Mariann D. Churchwell, Jignesh H. Patel, L. Gao, Michael Heung and Bruce A. Mueller**Published In** : Clinical Journal of the American Society of Nephrology**ISSN** : 1555-9041**Impact Factor** : 4.361**Abstract** :

Background and objectives: Infusion of intravenous antibiotics after hemodialysis (HD) may delay initiation of treatment for the next HD shift. Intradialytic administration of drugs such as vancomycin during the final hour of HD obviates these delays. Daptomycin has potent activity against Gram-positive bacteria, but the manufacturer recommends that the dose be infused after HD ends. This study determined the pharmacokinetics of intradialytically dosed daptomycin in patients with ESRD. **Design, setting, participants, and measurements:** This prospective crossover study compared single-dose daptomycin (6 mg/kg, 30-min intravenous infusion) pharmacokinetics administered after HD versus during the last part of HD with high-permeability (HP) and low-permeability (LP) dialyzers to seven patients who had ESRD and were on thrice-weekly HD. Serial blood samples were collected to determine daptomycin serum concentrations and protein binding. Statistical analysis was done using linear mixed model analysis. **Results:** The maximum serum concentration observed with a 6 mg/kg post-HD dose was 61.1 ± 7.6 µg/ml with a mean protein binding of 89.2%. Intradialytic daptomycin administration resulted in reduced maximum serum concentration and area under the curve values that were approximately 12 to 20% lower when administered during HD with LP dialyzers and approximately 35% lower with HP dialyzers.

Conclusions: Intradialytic daptomycin administration during the last 30 min of HD is feasible, provided that larger dosages are used to compensate for intradialytic drug loss. On the basis of our findings, intradialytic doses of approximately 7 mg/kg (LP) or approximately 9 mg/kg (HP) theoretically should be bioequivalent to 6 mg/kg infused after HD. The calculated dosages are mathematically driven and must be validated in prospective clinical trials.

Keywords :

Daptomycin; Pharmacokinetics; Hemodialysis; Gram-positive bacteria.

Faculty of Pharmacy**Dept.** : Pharmaceutics and Industrial Pharmacy**Name** : **Noha Nabil Salama****Title** : Single-dose Daptomycin Pharmacokinetics in Chronic Haemodialysis Patients**Authors** : Noha N., Jonathan H. Segal, Mariann D. Churchwe, Jignesh H. Pate, Lihong Gao, Michael Heung and Bruce A. Mueller**Published In** : Nephrology Dialysis Transplantation**ISSN** : 0931-0509**Impact Factor** : 3.568**Abstract** :

Background: Daptomycin has concentration-dependent antibacterial activity against Gram-positive bacteria. Its use is increasing in haemodialysis units. The manufacturer recommends a 4–6-mg/kg dose administered every 48 hrs for patients receiving haemodialysis. However, there are no published data about daptomycin pharmacokinetics and clearance during haemodialysis. The recommended dosing regimen would conflict with asymmetric thrice-weekly haemodialysis, which yields two ~44-hr and one ~68-hr interdialytic periods. This is the first study to evaluate daptomycin pharmacokinetics in haemodialysis patients, assess the extent of daptomycin dialytic removal and model serum concentrations at 44 and 68 hrs.

Methods: Six otherwise healthy subjects on chronic haemodialysis (55.3 ± 16.1 years old, three females, 66.2 ± 14.2 kg) received a single 6-mg/kg dose of daptomycin post-haemodialysis infused over 30 minutes. Serial blood samples were collected for ~44 hrs (pre-next haemodialysis) and throughout the subsequent haemodialysis session with a high permeability haemodialyser. Individual pharmacokinetic parameters determined by compartmental analysis were used to model trough serum concentrations at 44 and 68 hrs with 6-, 8- and 10-mg/kg post-haemodialysis doses.

Results: The haemodialysis session in this trial yielded mean urea and daptomycin reduction ratios of $79.6 \pm 5.8\%$ and $57.6 \pm 9.2\%$, respectively. Daptomycin half-life was 19.4 ± 6.5 and 3.8 ± 1.1 hrs 'off' and 'on haemodialysis', respectively, with minimal rebound 1 hr post-haemodialysis. All modelled trough concentrations at 44 and 68 hrs at all doses exceed typical minimum inhibitory concentration (MIC₉₀) values for *Staphylococcus aureus* and *Enterococcus faecalis*.

Conclusions: Daptomycin serum concentrations declined by ~50% after a 4-hr haemodialysis session with a high permeability haemodialyser. A 6-mg/kg i.v. post-haemodialysis thrice-weekly dose should result in sufficient pre-haemodialysis daptomycin serum concentrations even after a 68-hr interdialytic period.

Keywords:

daptomycin; Gram-positive bacteria; Haemodialysis; Pharmacokinetics.

Faculty of Pharmacy

Dept. : Pharmaceutics and Industrial Pharmacy

Name : Noha Nabil Salama



Title : Etanercept Clearance During an in Vitro Model of Continuous Venovenous Hemofiltration

Authors : Geoffrey M. Fleming, Noha N. Salama, d. Saada K. Eid Kenneth R. Cooke and Bruce A. Mueller

Published In : Blood Purification

ISSN : 0253-5068

Impact Factor : 1.748

Abstract :

Background/Aims: Etanercept is a tumor necrosis factor- antagonist used in inflammation-mediated conditions. Continuous venovenous hemofiltration (CVVH) has also been used in patients with inflammatory conditions. This study evaluated etanercept clearance using an in vitro CVVH model.

Methods: Etanercept clearance was assessed in vitro in bovine blood at 1–3 mg/l final serum concentration and urea control at 750 mg/l. CVVH was performed using polyacrylonitrile, polysulfone and polymethylmethacrylate filters at 3 l/h ultrafiltrate and 200 ml/min blood flow rates. Transmembrane clearance was estimated using sieving coefficient calculations and adsorptive removal rate was approximated using a mass balance calculation.

Results: Urea sieving coefficient remained constant (1.04 ± 0.01). Ultrafiltrate etanercept concentrations were undetectable (sieving coefficient < 0.02) and transmembrane and adsorptive clearances were negligible.

Conclusion: Etanercept is not cleared appreciably by transmembrane or adsorptive mechanisms in CVVH using polyacrylonitrile, polysulfone, or polymethylmethacrylate hemofilters.

Keywords :

Etanercept; Continuous renal replacement therapy; Hemofiltration.

Faculty of Pharmacy**Dept.** : Pharmacognosy**Name** : Taha S. M. Ahmed El Alfy**Title** : Formulation and Evaluation of Antihyperglycemic Leaf Extracts of *Zizyphus Spina-christi* (L.) Willd**Authors** : Demiana I. Nessem, Camilia G. Michel, Amany A. Sleem and Taha S. El-Alfy**Published In** : Pharmazie**ISSN** : 0031-7144**Impact Factor** : 0.858**Abstract** :

This study deals with the formulation of the antihyperglycemic leaf extracts of *Zizyphus spina-christi* (L.) Willd. A bioactivity guided fractionation of the different leaf extracts [defatted ethanol 70% (a), butanol (b), ethanol 70% (c), ethyl acetate (d) and petroleum ether (e) extracts] revealed that the extract (c) possessed the highest antihyperglycemic activity followed by (b) and (a) extracts respectively. HPLC was adopted for standardization of the extract (c) based on evaluation of the major saponin Christinin-A which was used as marker. The detection limit was 9.45 mg/ml for Christinin-A. Extracts (a, b and c) were separately formulated in soft (S) and hard (H) gelatin capsules. Two different formulations (F1 and F2) were tried using different excipients suitable for oral drug delivery. The recovery rates of the samples of saponin were in the range 99.43-101.86 % at 200, 800 µg/ml and 1200 µg /ml. Determination of saponin release rates from different formulae were carried out using Dissolution tester USP XXIV. The highest release was obtained from the formula Sc. The release of the extracts followed the diffusion mechanism. The selected formula Sc exhibited anti-diabetic activity (P<0.01) on acute and long term administration and highest saponin release. This formula (Sc) contained poly-oxyethylene (20) cetyl ether (BC-20TX), PEG 400, PEG 6000, purified water, meglyol 810, ascorbic acid and 200 mg of each extract (c).

Keywords :

Zizyphus spina-christi (L.) Willd; Antihyperglycemic leaf extracts; Standardization; Formulation.

Faculty of Pharmacy**Dept.** : Pharmacognosy**Name** : **Fathy M. Soliman****Title** : Cytotoxic Activity of Flavonoids of Jasonia Montana Vahl. (Botsch). (Astraceae) Growing in Egypt.**Authors** : Fathy M. Soliman, Mohamed Y. Moussa, Hossam M. Abdallah and Samir M. Othman.**Published In** : Australian Journal of Basic and Applied Sciences**ISSN** : 00-00**Impact Factor** : 0.00**Abstract** :

Eighteen phenolic compounds were isolated from the chloroform, ethyl acetate and nbutanol ractions of Jasonia montana Vahl. (Botsch) growing in Egypt; eleven flavonoid aglycons (1-11) from chloroform fraction, three flavonoid lycosides from ethyl acetate fraction(12-14), while nbutanol raction yielded two phenolic acids (15-16) and two flavonoid glycosides (17-18). The tructures of the isolated compounds were established as 3,6,7,3',4'-pentamethoxy quercetin (artemitin) (1), 3,6,7,3'-tetramethoxy quercetin (chrysosplenetin) (2), 3,6,3',4'-tetramethoxy quercetin (3), 3,6,7- rimethoxy kaempferol (4), 3,6,3'-trimethoxy quercetin (jaceidin) (5), 3,6,4'-trimethoxy quercetin centaureidin) (6), 3,3',4'-trimethoxy quercetin (7), 3,6-dimethoxy quercetin (8), 3,3'-dimethoxy uercetin (9), 7,4'-dimethoxy quercetin (10) and quercetin (11) from the chloroform fraction, uercetin-3-O-â-D-4C1 galactouronopyranoside (12), quercetin-3-O-â-D-4C1-glucopyranoside (13) and atuletin-7-O-â-D-4C1-glucopyranoside (14) from ethyl acetate fraction and 3,5-dicaffeoyl-quinic acid (15), caffeic acid (16), quercetin-3-O-L-1C4- rhamnopyranoside (Quercitrin) (17) and quercetin-3-O-â-D-4C1 glucuronopyranoside (18) from n-butanol fraction. Compounds 8, 10-12, 15 and 17 were solated for the first time from the genus Jasonia. The major isolated flavonoid; 2, 6 & 13, as well s, the aqueous extract were found to have a moderate anti-tumor activity against human cervix arcinoma (HELA) cell line.

Keywords :

Jasonia montana; Varthemia montana; Anti-tumor; Cervix carcinoma; Flvonoids.

Faculty of Pharmacy

Dept. : Pharmacognosy

Name : **Mohamed Ali A. Farag**



Title : Sulforaphane Composition, Cytotoxic and Antioxidant Activity of Crucifer Vegetables

Authors : Mohamed A. Farag and Amira abd el motaal.

Published In : J. Advanced Research

ISSN : 00-00

Impact Factor : 3.00

Abstract :

Sulfur compounds in sulfur rich food have been shown to significantly reduce the risk of cancer development. One such compound is sulforaphane (SF), a cancer chemopreventive agent identified from broccoli (F. Crucifereae). In this study, SF content was assessed in extracts of several crucifer vegetables including broccoli, brussel sprout, green cabbage, red cabbage, Chinese kale and turnip in parallel with its anticancer and antioxidant activity. Among tested crucifers, cabbage demonstrated a pronounced anticancer effect against A-549 lung cancer cells with an IC₅₀ value of 38 µg. ml⁻¹ and correlated with high SF levels at 540 µg. g⁻¹. Except for red cabbage and kale, crucifer extracts displayed moderate to weak activity in scavenging DDPH free radical relative to vitamin E standard.

Keywords :

Anticancer; Antioxidant; Broccoli; Green cabbage; Crucifereae; GC-MS; Sulforaphane.

Faculty of Pharmacy**Dept.** : Pharmacognosy**Name** : **Mohamed Ali A. Farag****Title** : Integrated Metabolite and Transcript Profiling Identify A Biosynthetic Mechanism for Hispidol in *Medicago Truncatula* Cell Cultures**Authors** : Mohamed A. Farag, Bettina E. Deavours, Ângelo de Fátima, Marina Naoumkina, Richard A. Dixon and Lloyd W. Sumner.**Published In** : Plant Physiology**ISSN** : 0032-0889**Impact Factor** : 6.67**Abstract** :

Metabolic profiling of elicited barrel medic (*Medicago truncatula*) cell cultures using high-performance liquid chromatography coupled to photodiode and mass spectrometry detection (HPLC-PDA-MS) revealed the accumulation of the aurone hispidol. Parallel, large-scale transcriptome profiling indicated that three peroxidases, Mt *PRX1*, Mt *PRX2* and Mt *PRX3*, were coordinately induced with the accumulation of hispidol. Mt *PRX1* and Mt *PRX2* exhibited aurone synthase activity based upon *in vitro* substrate specificity and product profiles of recombinant proteins expressed in *Escherichia coli*. Hispidol possessed significant antifungal activity relative to other *M. truncatula* phenylpropanoids tested, but has not been reported in this species before and was not found in differentiated roots in which high levels of the peroxidase transcripts accumulated. We postulate that hispidol is formed in cell cultures by metabolic spill-over when the pool of its precursor, isoliquiritigenin, builds up as a result of an imbalance between the upstream and downstream segments of the phenylpropanoid pathway, reflecting the plasticity of plant secondary metabolism. The results illustrate that integration of metabolomics and transcriptomics in genetically re-programmed plant cell cultures is a powerful approach for the discovery of novel bioactive secondary metabolites and the mechanisms underlying their generation.

Keywords :

Metabolic profiling; Aurones; Legumes; Peroxidases; RT-PCR; Phenylpropanoids.

Faculty of Pharmacy

Dept. : Pharmacognosy

Name : **Mohamed Ali A. Farag**



Title : Chemical Composition and Biological Activities of Leaf
Essential Oil of *Asimina Triloba*

Authors : Mohamed A. Farag

Published In : Pharmaceutical Biology

ISSN : 1388-0209

Impact Factor : 0.4

Abstract :

Leaf essential oil of *Asimina triloba* L. was found to be active against both human lung carcinoma and breast carcinoma cell lines. From this hydrodistillation extract, 38 components were identified by GC-MS analysis; sesquiterpenes dominated the oil composition (ca. 70%) with cadinene derivatives occurring in the greatest abundance (ca. 60%). Using DDPH assay for antioxidant testing, the essential oil displayed moderate activity relative to vitamin E. These findings suggest that *A. triloba* essential oil may provide leads for active anticancer agents.

Keywords :

Asimina triloba L.; Annonaceae; Cadinene; Sesquiterpenes; GC-MS; Essential oil; Anticancer; Antioxidant.

Faculty of Pharmacy**Dept.** : Pharmacognosy**Name** : **Mohamed Ali A. Farag****Title** : Altered Regulation of Metabolic Pathways in Human Lung Cancer Discerned by ^{13}C Stable Isotope-Resolved Metabolomics (SIRM)**Authors** : Mohamed A. Farag, Teresa W.-M. Fan, Andrew N. Lane, Richard M. Higashi, Michael Bousamra and Donald M. Miller**Published In** : Molecular Cancer**ISSN** : 1476-4598**Impact Factor** : 3.7**Abstract** :

Metabolic perturbations arising from malignant transformation have not been systematically characterized in human lung cancers in situ. Metabolomic analysis allows genome-wide functional analysis of the deregulation of cancer-specific genes. Metabolic changes were investigated by infusing uniformly labeled ^{13}C -glucose into human lung cancer patients, followed by resection and processing of paired normal lung and tumor tissues. ^{13}C -isotopomer-based metabolomic analysis was performed using NMR and GC-MS. As expected, the ^{13}C -isotopomer analysis indicated activated glycolysis in the tumor tissues. In addition, the Krebs cycle activity was altered. This was evidenced by an enhanced buildup of ^{13}C -succinate in tumor tissues, consistent with the pathway from glucose to succinate via glycolysis, anaplerotic pyruvate carboxylation (PC) and the reverse Krebs cycle sequence from oxaloacetate to succinate. PC activation – revealed here for the first time in human patients – is likely necessary to replenish the Krebs cycle intermediates to fulfill the high anabolic demands for growth in lung tumor tissues. We hypothesize that this is an important deregulatory event in lung and possibly other tumor development.

Keywords :

Metabolomics; NMR; GC-MS; ^{13}C -isotopomers; Glycolysis; Krebs cycle; Anaplerosis; Pyruvate carboxylation; Nucleotide synthesis.

Faculty of Pharmacy

Dept. : Pharmacognosy and Medicinal Plants

Name : **Elsayed Ali Aboutabl**



Title : Antioxidant Activity of Methanolic Extract of Bombax Ceiba.

Authors : Tiago O. Vieira, Ataa Said, Elsayed Aboutabl, Mona Azzam and Tânia B. Creczynski-Pasa

Published In : Redox Report 14 (1): 41-46 (2009)

ISSN : 1351-002

Impact Factor : 2.013

Abstract :

The antioxidant activity of a methanolic extract of Bombax ceiba was evaluated using several antioxidant assays, in terms of its: (i) ability to scavenge DPPH (1,1-diphenyl-2-picryl-hydrazyl) and hydroxyl free radicals; (ii) action against lipid peroxidation (in rat liver microsomes and soy bean phosphatidylcholine liposomes), induced by ascorbyl radicals and peroxynitrite; and (iii) effect on myeloperoxidase activity. The cytotoxicity was monitored through the mitochondrial activity in the Vero cell line. The extract showed antioxidant activity in all assays, the EC₅₀ (µg/ml) for DPPH was 87 and for lipid peroxidation of microsomes and soy bean liposomes induced by ascorbyl radicals were 141 and 105, respectively and by peroxynitrite were 115 and 77, respectively. The K0.5 value for myeloperoxidase activity inhibition by the extract was 264 µg/ml. The extract showed very low toxicity toward Vero cells.

Keywords :

Bombax ceiba; Antioxidant; Free radical; Myeloperoxidase; Deoxyribose; Lipid peroxidation.

Faculty of Pharmacy

Dept. : Pharmacognosy and Medicinal Plants

Name : **Elsayed Ali Aboutabl**



Title : Phytochemical and Pharmacological Studies on Leonotis
Leonurus

Authors : Mohamed A. El-Ansari, ElSayed A. Aboutabl, Abdel Razik H.
Farrag, Mohammed Sharaf, Usama W. Hawas, Ghadir M.
Soliman and Gamila S. El-Seed

Published In : Pharmaceutical Biology 47 (9): 894-902 (2009)

ISSN : 1388-0209

Impact Factor : 0.488

Abstract :

The present study aimed at isolation of the flavonoid constituents of Leonotis leonurus R. Br. (Lamiaceae) flowering aerial parts, identification of the isolated compounds and evaluation of the hepatoprotective, anti-inflammatory and cytotoxic activities of the aqueous alcoholic and chloroform extracts. Isolation of the flavonoid constituents was performed using chromatographic techniques. Ten flavonoid compounds were isolated and identified as six flavone glycosides, two methylated flavones and two flavone aglycons.

The structures were established through chemical and spectral analysis. Paracetamol-induced hepatotoxicity, carrageenan-induced hind rat paw edema and sulforhodamine B (SRB) assay were used in the evaluation of hepatoprotective, anti-inflammatory and cytotoxic activities, respectively. The 70% methanol and chloroform extracts showed strong hepatoprotective and anti-inflammatory activity; no cytotoxic activity was observed at the chosen extract concentrations and they possess promising protective activity against paracetamol-induced hepatic damage and anti-inflammatory activity in rats. The flavonoids isolated from Leonotis leonurus in this study were found to be isolated for the first time from the genus Leonotis.

Keywords :

Anti-inflammatory activity; Flavonoids; Hepatoprotective activity; Lamiaceae; Leonotis leonurus; NMR.

Faculty of Pharmacy**Dept.** : Pharmacognosy and Medicinal Plants**Name** : **Elsayed Ali Aboutabl****Title** : Chemical Constituents and Bioactivities of *Malabaila suaveolens***Authors** : Nassar Mahmoud, Aboutabl Elsayed, Maklad Yousreya, El Khrisy Ezzel-Din and Osman Abeer**Published In** : Pharmacognosy Research 1 (6): 342-347 (2009)**ISSN** : 00-00**Impact Factor** : 0.0**Abstract** :

Volatile oil components, fatty acids, β -amyryn and sterols were identified in the n-hexane extract of *Malabaila suaveolens* Coss. fruits. Angelicin, 4,7,9-trimethyl psoralen, isopimpinellin and umbelliferone were isolated from the dichloromethane extract of the plant. 5-Hydroxy 7, 3', 4'-trimethoxyflavone, apigenin and its 7-O- β -D-glucopyranoside were isolated from the ethyl acetate extract. From the methanol extract, a new flavonoid, apigenin 7-O-(6''-O-p-hydroxybenzoyl)- β -D-glucopyranoside (1), along with vicenin 2, acacetin 7-O-rutinoside and 6-hydroxyapigenin 7-O- β -D-glucopyranoside were isolated. Toxicity study of n-hexane, dichloromethane, ethyl acetate extract and methanolic extracts of the plant proved that it is relatively nontoxic. The tested extracts showed significant analgesic and anti-inflammatory effects as compared with control groups and reference drugs. Also, the tested extracts showed significant antioxidant activity as compared with reference.

Keywords :

Malabaila suaveolens; Coumarins; Flavonoids; Bioactivity.

Faculty of Pharmacy**Dept.** : Pharmacognosy and Medicinal Plants**Name** : **Elsayed Ali Aboutabl****Title** : Composition and Antiwormal Activity of Essential Oil from *Sideritis Taurica* Stephan ex Willd Grown in Egypt**Authors** : E. A Aboutab, K. M. Meselhy and A. M. El-Azzouny**Published In** : J. Essential Oil Research 21: 1-3 (2009)**ISSN** : 1041-2905**Impact Factor** : 0.368**Abstract** :

The aerial parts of *Sideritis taurica* Stephan ex Willd grown in Egypt yielded 0.12% and 0.23% (v/w) of essential oil by hydrodistillation (HD) and simultaneous hydrodistillation-solvent (pentane) extraction (Lickens-Nickerson, LN), respectively. GC-FID and GC/MS analysis revealed that the two oil samples were identical in composition, but differing in the percentages of certain components. Thirty-two components were identified in each, representing 92% and 93.3%, respectively. Oxygenated compounds were dominant in HD oil, being 50.6% compared with LN sample (37.4%); while the hydrocarbons amounted to 41.4% and 55.9%, respectively. Monoterpene hydrocarbons were mainly β -pinene (11.4% and 17.7%) and *a*-pinene (3.8% and 12.8%), respectively. The main sesquiterpene hydrocarbons were aromadendrene (4.6 % and 3.5%) and *a*-cubebene (3% and 2.2%), respectively. The main oxygenated monoterpenes were *a*-terpineol (2.8% and 2%) and trans pinocarveol (1.8% and 1.4%), respectively; while the major oxygenated sesquiterpenes were *a*-cadinol (22.4% and 12.2%), curcumenol (7.6% and 3.5%) and *a*-bisabolol (7.4% and 2.9%), respectively. The two oil samples exhibited significant antiwormal activity against the earthworm *Allolobophora caliginosa*, offering a support to recommendations of the possible utility of the oil of *S. taurica* as antiwormal agent and verifying the correlation between increased antiwormal activity of an essential oil with its high content of oxygenated compounds.

Keywords :

Sideritis taurica; Lamiaceae; Essential oil composition; *a*-pinene; β -pinene; *a*-cadinol; Antiwormal activity.

Faculty of Pharmacy

Dept. : Pharmacognosy and Medicinal Plants

Name : **Elsayed Ali Aboutabl**



Title : 3-Keto-22-epi-28-nor-cathasterone, a brassinosteroid-related metabolite from *Cystoseira myrica*

Authors : Abdel-Hamid A. Hamdy, Elsayed A. Aboutabl, Somayah Sameer, Ahmed A. Husseinc, Ana R. D-Marrerod, José Darias and Mercedes Cueto

Published In : Steroids 74: 927-930 (2009)

ISSN : 0039-128X

Impact Factor : 2.588

Abstract :

Bioassay-guided purification of an ethanolic extract of *Cystoseira myrica* against HEPG-2(liver) and HCT116 (colon) human cancer cell lines led to the isolation of 3-keto-22-epi-28-nor-cathasterone, **1** and cholest-4-ene-3,6-dione, **2**. This finding allowed us to report for the first time that a brassinosteroid-related metabolite occurs in seaweed. These compounds showed activity in the range of 12.38–1.16 μ M with selective activity of compound **2** to liver cancer cell lines.

Keywords :

Cystoseira; C27-brassinosteroid-related; Cytotoxicity.

Faculty of National
Cancer Institute

Faculty of National Institute of Laser Enhanced Science

Dept. : Medical Laser Applications

Name : Ahmed Kassab



Title : Effects of short inter-stimulus intervals on olfactory and trigeminal event-related potentials

Authors : Ahmed Kassab, Friederike Schaub, Julia Vent, Karl-Bernd Hu Ttenbrink and Michael Damm

Published In : Acta Oto-Laryngologica

ISSN: 0001-6489

Impact Factor : 0.868

Abstract :

Conclusion: Chemosensory event-related potentials (CSERPs) were identified in all measurements using the 20 s and the 10 s inter-stimulus interval (ISI) protocol, reducing the recording time to 75% or 57% compared with the standard protocol. A possible explanation for the rising CSERP amplitudes by shortening the ISI in CO₂ stimulation is due to a phenomenon known as trigeminal sensitization during repeated stimulation. Objectives: CSERPs are influenced by the ISI. The aim of this study was to evaluate the changes in CSERPs by decreasing the ISI from 30 s to 20 s or 10 s, respectively.

Subjects and methods: Ten normosmic healthy subjects participated this study. Phenyl ethyl alcohol (PEA), hydrogen sulphide (H₂S) and carbon dioxide (CO₂) were used in CSERP measurements with different ISI protocols (30 s (standard), 20 s and 10 s). (Amplitudes and latencies of ISI protocols were submitted to ANOVA for repeated measurements and t tests for paired samples.

Results: The amplitudes of CSERPs with PEA and H₂S stimuli were decreasing with shortening the ISI significantly. In contrast, the highest amplitudes of trigeminal CSERPs were recorded with the 10 s ISI protocol with CO₂. The ANOVA revealed a significantly different effect of shortening the ISI on CSERPs on the right and the left side.

Keywords :

Chemosensory; Olfactory; odour; Threshold; Nasal; Adaptation; Habituation; Phenyl ethyl alcohol; Hydrogen sulphide; Carbon dioxide

Faculty of National Institute of Laser Enhanced Science

Dept. : Application of laser in Metrology,
photochemistry and Agriculture

Name : **Mohamed Abdel Harith**



Title : Theoretical Modeling of Laser Ablation of Quaternary Bronze Alloys: Case Studies Comparing Femtosecond and Nanosecond LIBS Experimental Data

Authors : Lucilla Fornarini, Roberta Fantoni, Francesco Colao, Antonio Santagata, Roberto Teghil, Asmaa Elhassan and Mohamed A. Harith

Published In : Journal of Physical Chemistry A

ISSN: 1089-5639

Impact Factor : 2.871

Abstract :

A model, formerly proposed and utilized to understand the formation of laser induced breakdown spectroscopy (LIBS) plasma upon irradiation with nanosecond laser pulses at different fluences and wavelengths, has been extended to the irradiation with femtosecond laser pulses in order to control the fractionation mechanisms which heavily affect the application of laser-ablation-based microanalytical techniques. The model takes into account the different chemico-physical processes occurring during the interaction of an ultrashort laser pulse with a metallic surface. In particular, a two-temperature description, relevant to the electrons and lattice of the substrate, respectively, has been introduced and applied to different ternary and quaternary copper-based alloys subjected to fs and ns ablation both in the visible (527 nm) and in the UV (248 nm). The model has been found able to reproduce the shorter plasma duration experimentally found upon fs laser ablation. Kinetic decay times of several copper (major element) emission lines have been examined together with those relevant to the main plasma parameters. The plasma experimental temperature, derived assuming a Boltzmann distribution, and the electron density following the Saha equation have been compared with the corresponding theoretical data. A satisfactory description of plasma parameters and main matrix constituent composition has been obtained in the time window where local thermal equilibrium was assumed for LIBS data analysis. Improved analytical capabilities are predicted upon delayed detection of plasma emission in femtosecond LIBS, in relation to the better LOD achieved and to the improved data reproducibility expected.

6490

Results support the utilization of ultrafast laser sources for trace detection, despite the residual fractionation occurring in the examined range of fluences which affects the linearity of experimental calibration curves built for tin and lead after internal standardization on copper. The validation of model results by experimental data allowed highlighting, from first principles, of the ablation mechanisms for the two temporal regimes and information on how this affects the accurate microanalysis of Cu-based alloys.

Keywords:

LIBS; Modeling; Bronze alloys; Femtosecond and nanosecond laser.

Faculty of National Institute of Laser Enhanced Science

Dept. : Environmental, Photochemical and Agriculture Applications

Name : Al-Sayed A. Al-Sherbini



Title : Study the effect of α, β, γ -cyclodextrins on the critical micelles concentration (c.m.c.) of sodium dodecyl sulphate (SDS) by using 1-methyl-4-[4'-aminostyryl] pyridinium iodide

Authors : El-Sayed A.M. Al-Sherbini

Published In : Colloids and Surfaces A:Physicochem

ISSN: 0927-7757

Impact Factor : 1.926

Abstract :

The study of the effect of α, β, γ -cyclodextrins on the critical micelles concentration (c.m.c.) of sodium dodecyl sulphate (SDS) has been carried out by UV-vis spectroscopic measurements. The results reveal that, the complex formation between α, β, γ -cyclodextrins and SDS micelles shifts c.m.c. to higher values depending on the cavity size. It was 1.24×10^{-2} , 1.4×10^{-2} , and 1.61×10^{-2} mol dm^{-3} for α, β, γ -cyclodextrins, respectively.

Keywords :

Critical micelles concentration (c.m.c.) ;Cyclodextrin (CD).

Faculty of National Institute of Laser Enhanced Science

Dept. : Laser Application in Metrology, Photochemistry and Agriculture

Name : Rehab M. H. Amin



Title : Rapid and sensitive microplate assay for screening the effect of silver and gold nanoparticles on bacteria

Authors : Rehab M Amin, Mona B Mohamed, Marwa A Ramadan and Thomas Verwanger and Barbara Krammer

Published In : Nanomedicine

ISSN: 1743-5889

Impact Factor : 6.1

Abstract :

Background and aim: Nanomaterials are the leading requirement of the rapidly developing field of nanomedicine and bionanotechnology, and in this respect, nanotoxicology research is gaining great importance. In the field of infections, nanoparticles are being utilized as therapeutic tools against microbes, thus understanding the properties of nanoparticles and their effect on microbes is essential prior to clinical application. The aim of this study was to evaluate a microplate-based assay for monitoring the toxicity of silver and gold nanoparticles on bacteria. **Method:** Escherichia coli, a Gram-negative bacteria, and Staphylococcus capitis, a Gram-positive bacteria, were exposed to different concentrations of gold and silver nanoparticles. **Results:** Analysis of bacterial growth showed that the toxicity of silver nanospheres is higher than that of gold nanospheres. The toxicity of silver nanoparticles is dependent on their concentration, whereas in the case of gold nanoparticles, there is no significant toxic effect. Therefore, the described microplate assay could be used as a rapid and sensitive method for detection of bacterial growth inhibition.

Keywords :

Gold; Microbiological effects; Nanoparticles ;Nanotoxicity; silver.

Faculty of National Institute of Laser Enhanced Science**Dept.** : Laser Application in Metrology, Photochemistry
and Agriculture**Name** : **Tareq Youssef****Title** : Photosensitized Effects of Rose Bengal on Structure and
Function of Lens Protein “ α -crystallin**Authors** : Youssef T., Kassem M., Abdella T., Harith M. A. and Lenci F.**Published In** : Photochemistry and Photobiology**ISSN:** 0031-8655**Impact Factor** : 2.287**Abstract** :

The conformational changes of the bovine lens protein “ α -crystallin” have been investigated in the presence of the photosensitizer Rose Bengal (RB), in the dark as well as after visible light irradiation. Absorption and fluorescence emission spectra of RB [$5 \times 10^{-6} \text{M}$] and Fourier transform-IR spectra of α -crystallin [5 mg mL^{-1}] were significantly altered upon RB α -crystallin complex formation. RB was found to bind to α -crystallin in a molecular pocket characterized by a low polarity, with Trp most likely involved in this interaction. The binding constant (K_b) has been estimated to be of the order of $2.5 \text{ (mg / mL)}^{-1}$. The intrinsic fluorescence of α -crystallin was quenched through both dynamic and static mechanisms. Light induced photosensitized effects showed structural modifications in α -crystallin, including tertiary and secondary structure (an increase in unordered structure) alterations. Notwithstanding those photoinduced structural variations detected in α -crystallin when complexed with RB, the protein still retains its ability to play the role of chaperone for β -crystallin.

Faculty of National Institute of Laser Enhanced Science

Dept. : Laser Application in Metrology, Photochemistry
and Agriculture

Name : Tareq Youssef



Title : Fluorescence Study on the Interaction Between Hypericin and
Lens protein“Alpha-crystallin

Authors : Tareq Youssef

Published In : Photochemistry and Photobiology

ISSN: 1751-1097v

Impact Factor : 2.287

Abstract :

Hypericin has been reported as a potent photosensitizing agent exhibiting antiviral, antibacterial, antineoplastic activities. Although its photophysics and mode of action are strongly modulated by the binding protein, detailed information about its mechanism of interaction with possible cellular targets, including proteins, is still lacking. Previous in vitro studies demonstrated that hypericin can be uptaken by intact lens and is able to bind to the major lens protein “ α -crystallin.” In this study, the mechanism of interaction of this potent drug with α -crystallin was studied using the chemical denaturant guanidine hydrochloride (GdnHCl) and the hydrophobic surface probe, 8-anilino-¹-naphthalenesulfonic acid (ANS). Fluorescence measurements showed that the increased exposure of tryptophan resulting from partial unfolding of α -crystallin incubated with 1.0 mol L⁻¹ of GdnHCl corresponds to the maximum accessibility of hydrophobic sites to ANS at the same GdnHCl concentration. Interestingly at this additional hydrophobicity of the protein, hypericin exhibited its maximum fluorescence intensity. This in vitro study implied that hydrophobic sites of α -crystallin play a significant role in its interaction with hypericin. The binding between α -crystallin and hypericin was found to be enhanced by partial perturbation of the protein.

Faculty of National Institute of Laser Enhanced Science

Dept. : Laser Applications of Metrology

Name : Wessameldin S. Abdelaziz



Title : Gain coefficient calculation for short wave laser emission from nickel-like Sm

Authors : Wessameldin S. Abdelaziz

Published In : Phys. Scr

ISSN: 1434-6060

Impact Factor : 1.398

Abstract :

The energy levels, transition probabilities and effective collision strengths for the $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}$ and the $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9 4l$ ($l = s, p, d$ and f) states of nickel-like Sm are used in the calculation of the reduced population of 55 fine structure levels over a wide range of electron density values (from 10^{20} to 4×10^{22}) and at various electron plasma temperatures. For those transitions with positive population inversion factor, the gain coefficients are evaluated and plotted against the electron density.

Faculty of National Institute of Laser Enhanced Science

Dept. : Laser Applications of Metrology

Name : Wessameldin S. Abdelaziz



Title : Soft X-ray laser emission from W46+

Authors : Wessameldin S. Abdelaziz

Published In : The European Physical

ISSN: 0031-8949

Impact Factor : 0.971

Abstract :

Using published atomic data, the populations of the excited states $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9 4l$ ($l = s, p, d, \text{ and } f$) – $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10}$ of Ni-like W have been calculated for electron densities in the range 10^{20} – 10^{23} cm^{-3} and electron temperatures in the range 0.5–1 keV. For those transitions with positive population inversion factor, the gain coefficients are determined and plotted against the electron density.

Faculty of National Institute of Laser Enhanced Science

Dept. : Laser science and its interaction

Name : **Gamal E. A. Khalil**



Title : Single molecule spectroscopy of red- and green- Emitting fluorene-based copolymers

Authors : Gamal E. A. Khalil

Published In : Current Organic Chemistry

ISSN: 0021-9606

Impact Factor : 3.149

Abstract :

Single molecule fluorescence spectroscopy is used to study the optical properties of two polymers; a fluorene-based statistical co-polymer that contains a low fraction (10%) of a red emitting thiophene group, and the green emitting polymer poly(9,9-dioctylfluorene-alt-benzothiadizole). These polymers were studied when isolated at low concentration in a polymer matrix (either polynorbornene or polystyrene). For the red-emitting polymer, we compare the relative emission intensity from the green emitting benzothiadiazole groups with the red-emitting thiophene. We find that red-emission from the thiophenes is significantly suppressed in the single molecule regime, suggesting that interchain energy transfer dominates intra-chain processes in such polyfluorene co-polymers. We then use fluorescence spectroscopy and polarisation anisotropy measurements to show that the conformation of both polymers are dependent on their host matrix, adopting a more collapsed, globular conformation in polystyrene and a more extended chain conformation in polynorbornene.

Keywords :

Single molecule, laser spectroscopy, organic semiconductors, concentration dependent.

Faculty of National Institute of Laser Enhanced Science**Dept. :** Laser Science and Interactions**Name :** Maram T. Abou Kana**Title :** Kinetic Studies on the Dilatometric-Free Radical Copolymerization of New Modified Laser Dye Monomer with Methyl Methacrylate and Characterization of the Obtained Copolymer**Authors :** S. M. Sayyah, M. Rehahn, A. H. Elwahy and M. T. H. Abou Kana**Published In :** Journal of Applied Polymer Science**ISSN:** 0021-8995**Impact Factor :** 0.0**Abstract :**

The synthesis of the new modified laser dye from fluorescein ester (II) and acryloyl chloride was performed. The structure of the new monomer 2-(6-acryloyloxy-3-oxo-3H-xanthene-9-yl)-benzoic acid ethyl ester [AOXBE] was confirmed by ^1H NMR, IR, ^{13}C NMR, mass spectroscopy, and elemental analysis. Free radical copolymerization of AOXBE with methyl methacrylate (MMA) was discussed using dilatometric technique. The effect of different solvents on the rate of copolymerization reaction was carried out. The rate equation was found to be $R_p = [\text{Initiator}]^{0.5473} [\text{Monomer}]^{1.5}$. It was also noticed that the increase of AOXBE concentration in the monomer feed has an inhibition effect on the rate of copolymerization.

Keywords :

Copolymerization; Monomers; Photochemistry; Radical polymerization.

Faculty of National Institute of Laser Enhanced Science

Dept. : Medical Applications of Lasers

Name : Tarek Fahmy Elwakil



Title : Cyclin D1 gene amplification in proliferating haemangioma

Amal M. Mohamed, Tarek F. Elwakil, Ibrahim M. Taher,

Authors : Mohamed M. Elbarbary, Hesham F. Kayed, Hassan A. Hussein and Ola M. Eid

Published In : Cell Tissue Res

ISSN: 0302-766X

Impact Factor : 2.74

Abstract :

Cyclin D1 gene amplification has been reported to promote abnormal endothelial cell proliferation and angiogenesis; these findings constantly present in proliferating haemangiomas. The present study was conducted to evaluate cyclin D1 gene amplification by fluorescence in situ hybridization analysis in tissue biopsies of 22 proliferating haemangiomas from 20 infants. Two significant correlations of cyclin D1 gene amplification with the early onset and the duplication of proliferating haemangiomas have been observed. Moreover, a significant correlation ($P \leq 0.05$) has been found between the treatment parameters of proliferating haemangiomas with the amplified versus the normal cyclin D1 gene. Proliferating haemangiomas with the amplified cyclin D1 gene required more frequent flashlamp pulsed dye laser treatment sessions at the maximum dosimetry and more frequent intralesional steroid injections at the maximum dose/injection but treatment outcomes were limited. The more frequent post-treatment complications among proliferating haemangiomas with cyclin D1 gene amplification might be attributable not only to the associated more aggressive natural course, but also to the higher treatment parameters needed for effective treatment. Within the limitations of the present study, cyclin D1 gene amplification was seen for the first time in proliferating haemangiomas. We have found that the amplification of the cyclin D1 gene can predict the more aggressive natural course of proliferating haemangiomas and the limited outcome and higher incidence of complications after non-excision treatment modalities. The present findings reflect the possible usefulness of antisense cyclin D1 to improve the therapeutic outcome of proliferating haemangiomas.

Keywords :

Cyclin D1 gene amplification; Fluorescence in situ hybridization; Haemangioma; Laser; Non-excision treatment; Human.

Faculty of National Institute of Laser Enhanced Science**Dept. :** Medical Laser Applications**Name :** Manal Salah**Title :** Methylene Blue Mediated Photodynamic Therapy for Resistant Plaque Psoriasis**Authors :** Manal Salah, Nevien Samy and Maha Fadel**Published In :** Drugs in Dermatology**ISSN:** 1545-9616**Impact Factor :** 0.0**Abstract :**

Topical treatment of resistant psoriatic plaque stage lesions may be difficult and the systemic therapies seem inappropriate. Therefore, a topical 0.1% methylene blue (MB) hydrogel was prepared and evaluated for percent drug content, drug uniformity, pH, rheological and organoleptic characters such as feel tackiness, grittiness sensation and transparency in addition to release kinetics study in vitro. The efficiency of the photodynamic therapy (PDT) of MB photo-activated using 565 mW Light emitting diode (LED) 670 nm was evaluated in patients with resistant plaque psoriasis. The gel was evaluated in mono-blinded study. The patients were subjected to repeated sessions of irradiation, skin biopsies from each patient in the beginning and at the end of the sessions were taken for histopathological studies. Results showed the hydrogel was transparent non gritty and the drug uniformly dispersed with pH = 7.2 and viscosity value = 25.04 Pa. The drug content was found to be 99.4 ± 0.15 %. Drug release was following zero order kinetics with rate constant $K = 0.348 \pm 0.01$ and $T_{1/2} = 0.95 \pm 0.5$ h. Sixteen patients experienced complete clearance of their treated lesions. Skin appeared normal in colour, texture and pliability with no complications indicating no skin sensitivity. Histopathological examinations showed nearly normal epidermis at the end of all sessions. We concluded that the prepared hydrogel was safe, stable and very effective. The results are encouraging to accept MB as a photosensitizer for PDT and as a safe and effective method for treatment of selected cases of resistant localized psoriasis.

Keywords :

Psoriasis; Methylene blue; PDT- hydrogel.

Faculty of National Institute of Laser Enhanced Science

Dept. : Medical Laser Applications

Name : Maha Fadel M. Ali



Title : Liposomal Methylene Blue Hydrogel for Selective Photodynamic Therapy of Acne Vulgari

Authors : Maha Fadel, Manal Salah and Nevien Samy and Mona Solieman

Published In : Drugs in Dermatology

ISSN: 1545-9616

Impact Factor : 0.0

Abstract :

Background: Photodynamic therapy (PDT) has been proposed as a treatment option for acne vulgaris .

Objectives: Selective photodynamic therapy of the sebaceous glands using liposomal delivery of Methylene Blue (MB) and evaluate the tolerability in patients with mild to moderate facial acne vulgaris using a controlled and investigator-blinded study design.

Materials and methods: Liposomes loaded Methylene Blue (LMB) was prepared, formulated in hydrogel (MB 0.1%) and studied for different pharmaceutical properties. Permeability and selective sebaceous gland targeting in mice skin was studied. Gel containing LMB was used for treating patients complaining of mild-moderate acne vulgaris once a week for 2 weeks. Clinical assessments of patient's improvement and efficacy including changes in lesions counts, pain and local adverse effects were evaluated by the dermatologists .

Results: The mechanism of the drug released from liposomes (in pH = 5.5&7) was following zero order kinetics with significant increase in drug release in pH = 5.5. Drug released from Free Methylene Blue (FMB) gel was a significantly higher ($P \leq 0.05$) with Higuchi's diffusion model than LMB gel which followed zero order kinetics. Free MB gel showed superficial destruction in mice hair shaft while LMB showed complete destruction of pilosebaceous unit. Only after 2 session's 83.3% reduction in the mean numbers of inflammatory acne lesions and 63.6% reduction in the mean number of non-inflammatory acne lesions, At 12 weeks, 90% of patients had moderate to marked improvement of their acne in the treated areas. Most of patients had no pain; also no serious adverse side effects were recorded. All the patients had no edema. Slight transient hyperpigmentation was seen only in 3 patients .

Conclusion: Liposomal MB hydrogel selectively delivered MB to sebaceous gland and was effective in photodynamic treatment of mild to moderate and severe acne vulgaris.

Keywords:

Liposomes; Acne Vulgaris; Methylene blue; PDT; hydrogel.

Faculty of National Institute of Laser Enhanced Science

Dept. : Medical Laser Applications

Name : Maha Fadel M. Ali



Title : PLGA Biodegradable Nanoparticles Loaded Zinc Phthalocyanine for Photodynamic Therapy in Tumor-Bearing Mice

Authors : Maha Fadel, Kawser Kassab and Doa Abdel Fadeel

Published In : Lasers in Medical Sciences

ISSN: 0268-8921

Impact Factor : 1.675

Abstract :

Nanoparticles formulated from the biodegradable copolymer poly(lactic coglycolic acid) (PLGA) were investigated as a drug delivery system to enhance tissue uptake, permeation, and targeting of zinc(II) phthalocyanine (ZnPc) for photodynamic therapy. Three ZnPc nanoparticles formulations were prepared using a solvent emulsion evaporation method and the influence of sonication time on nanoparticle shape, encapsulation and size distribution, in vitro release, and in vivo photodynamic efficiency in tumor bearing mice were studied. Sonication time did not affect the process yield or encapsulation efficiency, but did affect significantly the particle size. Sonication for 20 min reduced the mean particle size to 374.3 nm and the in vitro release studies demonstrated a controlled release profile of ZnPc. Tumor-bearing mice injected with ZnPc nanoparticles exhibited significantly smaller mean tumor volume, increased tumor growth delay and longer survival compared with the control group and the group injected with free ZnPc during the time course of the experiment. Histopathological examination of tumor from animals treated with PLGA ZnPc showed regression of tumor cells, in contrast to those obtained from animals treated with free ZnPc. The results indicate that ZnPc encapsulated in PLGA nanoparticles is a successful delivery system for improving photodynamic activity in the target tissue.

Keywords :

PLGA; nanoparticles; Zinc phthalocyanine; PDT; diode laser.

Faculty of National Institute of Laser Enhanced Science**Dept. :** Medical Laser Applications**Name :** Kawser Kassab**Title :** Evaluating the Antitumor Activity of Combined Photochemotherapy Mediated by A Meso-substituted Tetracationic Porphyrin and Adriamycin**Authors :** Kawser Kassab**Published In :** Acta Biochimica et Biophysica Sinica Advance Access Published**ISSN:** 1672-9145**Impact Factor :** 1.086**Abstract :**

The combined anticancer modality comprising porphyrins as photodynamic sensitizers and anticancer drugs has been an interesting subject for many researchers. In this study, the photochemotherapeutic effect mediated by simultaneous photoactivation of tetracationic meso- tetrakis (*N*-methyl- 4- pyridyl) porphine tetratosylate (TMPyP) and adriamycin (ADM) were explored using human hepatocellular carcinoma cell line (HePG2). The efficiency of TMPyP acting in concert with ADM in the dark and in the presence of photoirradiation was evaluated, by studying cell viability, caspase-3 activity and ultrastructural changes in the cells after incubation with each of the two agents, separately, or simultaneously as a co-mixture. Under dark conditions, the simultaneous incubation of cells with TMPyP and ADM significantly enhanced cell death by 1.8 folds and 1.3 folds, compared with TMPyP or ADM treatment, respectively. After photoirradiation, the antiproliferative effect of the co-treatment with TMPyP and ADM increased further by 2 folds. Transmission electron microscopy and the measurements of caspase-3 levels in treated cells revealed that the co-treatment of cells with ADM and TMPyP followed by light irradiation directed the cell death towards necrosis and abrogated the apoptotic cell death pathway, which was exhibited in cells treated with ADM in absence and in presence of photoirradiation.

Keywords :

Photodynamic therapy, Photochemotherapy porphyrins, Adriamycin.

Cairo University, top 50 Authors,

A- According to *no of publications*

B- According to *total citations*

C- According to *h-index*

A- Cairo University, Top 50 Authors, According to No. of doc.

Author Name	Affiliation	No of doc
Ahmed A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	440
Ahmed M. Soliman	Department of Electronics and Communication Engineering	296
Yousry M. Issa	Department of Chemistry	185
Olfat El Sibai	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	161
Hazem Ali Attia	Faculty of Engineering, Electrical Power and Machines Department	157
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Ali A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	142
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Ahmed A E Kassem	Faculty of Pharmacy,	104
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Mohamed Salem Rizk	Department of Chemistry	90
Mohamed Mahmoud Abdel-Kader	Department of Physics	89
Mohammed M A Amer	Faculty of Pharmacy, Department of Analytical Chemistry	88
Ismail A Ismail A Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	83
Yasser M. Kadah	Faculty of Engineering, Department of Biomedical Engineering	83
Mohamed El-Nadi	Department of Physics	82

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Amir F. Atiya	Faculty of Engineering, Department of Computer Engineering	73
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Amr Amin Adly	Faculty of Engineering, Electrical Power and Machines Department	69
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Ibrahim A. Ammar	Cairo University, Faculty of Medicine	69
Mohamed Mohamed Shoukry	University of Erlangen-Nuremberg, Institute of Inorganic Chemistry	69
Mohamed S. Karawya	Faculty of Pharmacy, Pharmacognosy Department	69
Mohamed A. Zayed	Department of Chemistry	64
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B- Cairo University, Top 50 Authors, According to total citation

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Ahmed A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	1308
Ahmed M. Soliman	Department of Electronics and Communication Engineering	955
Ahmed Mohamed Galal	Department of Chemistry	812
Amir F. Atiya	Faculty of Engineering, Department of Computer Engineering	791
Yousry M. Issa	Department of Chemistry	769
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Waheed A. Badawy	Department of Chemistry	536
Rabab M Gaafar	NCI	510
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Mohamed Saada El-Deab	Faculty of Science, Department of Chemistry	314
Mohamed T. Khayyal	Faculty of Pharmacy, Department of Pharmacology	292

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Author Name	Affiliation	Cited By
Kamal Mohammed Dawood	Department of Chemistry	262
Gehad Genidy Mohamed	Department of Chemistry	256
Mohamed Mohamed Shoukry	University of Erlangen-Nuremberg, Institute of Inorganic Chemistry	256
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A. H M Elwahy	Department of Chemistry	180
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Ahmed M. Soliman	Department of Electronics and Communication Engineering	19
Ahmed A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	16
Ahmed Mohamed Galal	Department of Chemistry	15
Hussien M Khaled	NCI	14
Mohamed Hilmy Elnagdi	Department of Chemistry	14
Mohamed Saada El-Deab	Faculty of Science, Department of Chemistry	14
Yousry M. Issa	Department of Chemistry	13
Hesham G. Al-Inany	Department of Obstetrics and Gynecology	13
Waheed A. Badawy	Department of Chemistry	13
Kamal Mohammed Dawood	Department of Chemistry	13
Gehad Genidy Mohamed	Department of Chemistry	13
Mohamed Shaarawy	Kasr El-Aini School of Medicine, Department of Obstetrics and Gynecology	12
Said S E H Elnashaie	Department of Chemical Engineering	12
Khaled M. Ismail	Department of Chemistry	12
Ahmed A W Soliman	Department of Chemistry	12
Amir F. Atiya	Faculty of Engineering, Department of Computer Engineering	11
Badr G. Ateya	Faculty of Science	11
Olfat El Sibai	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	11
Hamdy H H Hassan	Department of Physics	11
Ahmad S A S Shawali	Department of Chemistry	11
Youssef F. Rashed	Department of Structural Engineering	10
Barsoum N. Barsoum	Faculty of Science, Department of Chemistry	10
Rashad S. Barsoum	Cairo Kidney Center	10
Mohamed Salem Rizk	Department of Chemistry	10
Abdel Rahman Zekri	NCI	10
Hazem Ali Attia	Faculty of Engineering, Electrical Power and Machines Department	10
Ahmad M. Farag	Department of Chemistry	10

C- Cairo University, Top 50 Authors, According to h-index

Author Name	Affiliation	h-index
Nadia Ahmed Mohamed	Department of Chemistry	10
Fawzy A. Attaby	Department of Chemistry	10
Magdy W. Sabaa	Department of Chemistry	10
Samy A. Madbouly	Department of Chemistry	9
Gamal R. Saad	Department of Chemistry	9
A. H M Elwahy	Department of Chemistry	9
Mohammed M A Amer	Faculty of Pharmacy, Department of Analytical Chemistry	9
Rashika R. El Ridi	Faculty of Science, Department of Zoology	9
Mohamed Mohamed Shoukry	University of Erlangen-Nuremberg, Institute of Inorganic Chemistry	9
Gamal Esmat	Medicine	9
Ahmed A M Moala	Faculty of Agriculture, Department of Physics	9
Yasser M. Kadah	Faculty of Engineering, Department of Biomedical Engineering	9
A. A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	9
Hala G. El-Shobaky	Faculty of Science, Department of Chemistry	9
Nadia Mokhtar	NCI	8
Ashraf A. Abbas	Department of Chemistry	8
Ahmady A A Yassin	Department of Chemistry	8
Soliman A. Mahmoud	German University in Cairo, Department of Electrical and Electronic Engineering	8
Fathy Mohamed Abdelrazek	Department of Chemistry	8
Rany M. Shamloul	Department of Andrology	8
Mohamed Mamdouh Abdel Aziz	Faculty of Engineering, Electrical Power and Machines Department	8
Ali A. Shafik	Kasr El-Aini School of Medicine, Department of Surgery and Experimental Research	8
Rabab M Gaafar	NCI	8
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Said R. Grace	Faculty of Engineering, Dept. of Engineering Mathematics	8



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