The 5th International Conference of the Arab Society for Medical Research

Under the theme

Medical Research and Health Challenges in the Arab World

Under the Patronage of

The League of Arab States

Conference Chairman

Prof. Dr. Ashraf Shaalan

President of the Arab Society for Medical Research
President of the NRC-Egypt

Conference Co-Chairman

Prof. Azza Abdel Shaheed

Vice-President of the Society

Conference Deputy-Chairman

Prof. Karam Mahdy

Secretary General of the Society

October 28 – 31st, 2016
Dreams Beach Resort
Sharm El Sheikh, Egypt

Contents

Welcome message

Dear Colleagues

It is great pleasure to welcome you to the 5th International conference of the Arab Society for Medical Research, which held in Dreams Beach Resort, Sharm El Sheikh – Egypt, which consider one of the major tourist hotspot and resort city in Egypt.

The main theme of the meeting this year is Medical Research and Health Challenges in the Arab World; the scopes of interest have been extended to include the most recent advances in the different domains of the medical sciences. The Arab society is aiming at faster co-operation and networking of medical schools of Arab countries in order to advance medical research globally.

The conference program includes the recent research in different medical fields in Arab Countries, in addition to some advanced countries such as Japan.

We hope all participants will enjoy the pleasure of warm Egyptian hospitality and culture. We assure you that this meeting will represent a memorable addition to our scientific knowledge.

Conference Chairman
Chairman of the Arab Society for Medical Research
Chairman of National Research Centre, Egypt
Prof. Dr. Ashraf Shaalan

Organizing Committee

Professor	:	Ashraf Shaalan Karam Mahdy Azza Abd El- Shaheed Mostafa El Mesairy Abdel Razik Farrag
Assistance	:	Mahmoud A. Abdel Moneim
Secretary	:	Ahmed Soliman Abdel Hameed Ragab
Public Relations	:	Mohamed Sobhey Ahmed Tharwat

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(Arranged Alphabetically)

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Abdulameer A. Al-Mussawi (Iraq)
Aly El-Nofely (Egypt)
Amina Gamal El Din (Egypt)
Amina H. Awad (Egypt)
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Magda H. Mahran (Egypt)
Maher Al-Dabbas (Jordan)
Maivel H. Ghattas (Egypt)
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Ragaa Issa (Egypt)
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Sajjad S. Issa (Iraq)
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Sayed El Tomy (Egypt)
Siham I Abd ELDayem (Egypt)
Tarek El-Banna (Egypt)
Tarek Salah El Din (Egypt)
Wafaa E. Abdel Aal (Egypt)
Yasser E. Nassef (Egypt)

List of Speakers

(Arranged Alphabetically)

Abdulameer A.Al-Mussawi (Iraq)
Adel AbdulAal (Bhrian)
Ahlam H. Mahmoud (Egypt)
Ahmed Mandil (Egypt – WHO)
Aly El-Nofely (Egypt)
Amal A. El Gohary (Egypt)
Amal H. Hamza (Egypt)
Amal M. Saad (Egypt)
Amina A. Gamal el Din (Egypt)
Amina H Awad (Egypt)
Asmaa F Abdelmonem (Egypt)
Awatif H. Issa (Iraq)
Aya Khalil (Egypt)
Aziza H. Kamel (Egypt)
Azza M. Ahmed (Egypt)
Balsam A. Marina (Iraq)
Dalal Alhasan (Bahrain)
Elmeya Safar (Egypt)
Eman Hamza (Bahrain)
Enas Abdel-Rasheed (Egypt)
Enayat Omara (Egypt)
Eslam S. Ghazy (Egypt)
Fathia Elrefaei (Egypt)
Fatima N. Abulfateh (Bahrain)
Fatma Ibrahim Sonbol (Egypt)
Fauzia S. Elghanni (Libya)
Gehan M Ahmed (Egypt)
Hala A. Abdelgawad (Egypt)
Hanem Fathy Khater (Egypt)
Howayda A. Khaled (Egypt)
Iman A. Fahmy (Egypt)

Inas R. EL-Alameey (Egypt)
Jaffar M. Al Bareeq (Bahrain)
Khalid A. Aljohani (Saudi Arabia)
Magda H. Mahran (Egypt)
Maha Mohssen (Egypt)
Maher Al-Dabbas (Jordan)
Maivel H. Ghattas (Egypt)
Manal Kamel (Egypt)
Manal Abdel-Salam (Egypt)
Masanori Yoshioka (Japan)
Mohamed Elshehaby (Egypt)
Mona El-Neketi (Egypt)
Mona M. Gamal (Egypt)
Mosad A. Ghareeb (Egypt)
Nadia S Metwally (Egypt)
Naglaa F. Abbas (Egypt)
Nehal M khairy (Egypt)
Ragaa Issa (Egypt)
Refat A. Sadeq (Egypt)
Sajjad S. Issa (Iraq)
Salwa A. Ahmed (Egypt)
Samah A. El-Newary (Egypt)
Sameerah M. Ibrahim (Iraq)
Sanaa K. Bardaweel (Jordan)
Saneya Wahba (Egypt)
Shenouda M. Girgis (Egypt)
Siham I Abd EL Dayem (Egypt)
Soad Nady (Egypt)
Tarek El-Banna (Egypt)
Wafaa E Abd El- Aal (Egypt)
Walid E. Abdallah (Egypt)
Yasser E. Nassef (Egypt)

Main Topics

- **Biochemistry & Clinical Pathology**
- **Pediatrics & Child Health**
- **Community Medicine**
- **Environmental & Parasitic Diseases**
- **Pharmacology & Natural Products**
- **Ophthalmology**
- **Pathology**
- **Microbiology**
- **Physiotherapy**
- **Bio-banking and Stem Cells**
- **Biases in Research Study**
- **Child Development**

General information

Date: October 28-31, 2016

Venue: Dreams Beach Resort, which is consider one of the world's most fascinating locations at Sharm El Sheikh, on the beach of Alakaba, North Sinai – Egypt.

Data Show & Slides: Please submit your CD/slides to the slide delivery Hall at least one hour before the presentation time.

Posters: The posters should be placed in the Maim Hall.

Badges:

Red	**:**	Chairpersons
Blue	**:**	Organizing Committee
Yellow	**:**	Speakers/Posters
Green	**:**	Attendants

Conference at Glance

Date	Time		Main Hall (Hall A)		Hall B
October 28th 2016	06:00 AM	Departure from NRC, Cairo			
	01:00 - 03:00 PM	Hotel check in			
	01:00 – 03:00 PM	Lunch			
	03:00 - 06:00 PM	Break			
	06:00 - 08:00 PM		Registration & Opening Ceremony		
	08:00 - 10:00 PM	Dinner			
October 29th 2016	07:00 - 10:00 AM	Breakfast			
	10:00 – 11:00 AM		Pediatrics &Child Health (I)	Posters I	Pharmacology & Natural Product (I)
	11:00 - 12:00 PM		Pediatrics & Child Health (II)		Pharmacology & Natural Product (II)
	12:00 - 01:00 PM		Community Medicine		Biochemistry & Clinical Pathology
	01:00 – 03:00 PM	Lunch			
	03:00 – 04:00 PM		Environmental and Parasitic Diseases	Posters II	Pathology
	04:00 – 05:00PM		Ophthalmology (I)		Microbiology
	05:00 – 06:00 PM		Ophthalmology (II)		Physiotherapy
	06:00 – 07:00 PM	Break			
	07:00 – 10:00 PM	Dinner			
October 30th 2016	07:00 - 10:00 AM	Breakfast			
	10:00 - 10:30 AM		Closing Ceremony		
	10:30 - 01:00 PM	Social			
	01:00 – 03:00 PM	Lunch			
	03:00 –08:00 PM	Social/ Shopping			
	08:00 – 10:00 PM	Dinner			
October 31st 2016	07:00 - 10:00 AM	Breakfast			
	12:00 AM	Departure from Sharm El Sheikh			

CONFERENCE PROGRAM

October 28th 06:00 - 08:00 PM

Main Hall

06:00 – 07:00 **Registration**

07:00 – 07:20

Opening Ceremony

Welcome Addresses

- **Prof. Dr. Karam Mahdy**

  Conference Deputy-Chairman, Secretary General of the Society, Egypt

- **Prof. Dr. Azza Abd El-Shaheed**

  Conference Co-Chairman, Vice President of the Society

- **Prof. Dr. Ashraf Shaalan**

  Conference Chairman, President of the Arab Society for Medical Research and the National Research Centre, Cairo, Egypt

- **H.E. Mr. Ahmed Aboul-Gheit**

  Secretary General of the League of Arab State

October 28th **07:20 - 08:00 PM**

Plenary

The Main Hall

Chairs: Prof.	Osama Azmy Karam Mahdy Azza Abdel Shaheed
07:20 – 07:30	**Biobanking and Stem Cells: New Era of Research Ethics, Are we ready for in our Arab Countries?** Wafaa El- Sayed Abd El- Aal
07:30 – 07:40	**Biases in Research Study: How to Avoid Them** Jaffar M. Al Bareeq
07:40 – 07:50	**Child Development: Is It Morphological, Physiological, or Psychological?** Aly El-Nofely
07:50 – 08:00	**Health Research Priorities: An EMR Perspective** Ahmed Mandil
08:00 – 10:00	**Dinner**

October 29th	10:00 - 11:00 AM

Pediatrics & Child Health (I)

Hall A (Main Hall)

Chairs: Prof.	AzzaAbdel Shaheed Saneya A. Wahba Amina H. Awad
10:00 - 10:10	**Serum Levels of Asymmetric Dimethylarginine, Malondialdehyde and Paroxonase Activity among Egyptian Non Obese Asthmatic Children** Inas R. EL-Alameey
10:10 - 10:20	**Infant and Child Feeding Practices among Mothers in a Selected Slum Area in Cairo City, Egypt: A Descriptive Study** Saneya Wahba
10:20 - 10:30	**Evaluation of Angiopoietin-2 Serum Level as a Marker of Cardiovascular Risk in Children with Chronic Kidney Disease** Manal Abdel-Salam
10:30 - 10:40	**Breakfast Skipping and its Associated Factors Among Primary School Children in Cairo Governorate, Egypt** Amina H Awad
10:40 - 11:00	**Discussion**

October 29th	11:00 - 12:00 AM

Pediatrics & Child Health (II)

Hall A (Main Hall)

Chairs: Prof.	Tarek Salah El Din Azza M. Ahmed Yasser E. Nassef
11:00 - 11:10	**Role of Trace Elements, Heavy Metals and Vitamins in Iron Deficiency Anemia among Egyptian School Children** Yasser E. Nassef
11:10 - 11:20	**Measurements of Serum Cystatine C and B_2 Microglobulin for the Early Detection of Acute Kidney Injury in the High Risk Neonates** Azza M. Ahmed
11:20 - 11:30	**Central Obesity in Relation to Lipid Profile and Adiponectin among Egyptian School Children** Aya Khalil
11:30 - 11:40	**Post-Tonsillectomy Hemorrhage and Other Complications** Fatima N. Abulfateh
11:40 - 12:00	**Discussion**

October 29th	12:00 – 01:00 PM

Community Medicine

Main Hall (Hall A)

Chairs: Prof.	Osama Azmy Jaffar M. Al Bareeq Khalid A. Aljohani
12:00 - 12:10	**Study on Abdominal Obesity at Basra University Staffs** Sajjad S. Issa
12:10 - 12:20	**The Accuracy of PET CT Scan in Detecting Axillary Lymph Node Metastasis in Breast Cancer in KHUH: Case Series and Literature Review** Eman Hamza
12:20 - 12:30	**Patient Safety Climate: A Multicenter Exploration Study** Khalid Abdullah Aljohani
12:30 - 12:40	**Hyperbaric Oxygen Therapy as an Adjunct in the Management of Diabetic Foot Complications** Adel AbdulAal
12:40 - 12:50	**Electronic Continuous Medical Education Program in King Hamad University Hospital** Dalal Alhasan
12:50 - 01:00	**Discussion**
01:00 - 03:00	**Lunch**

October 29th	10:00 - 11:00 AM

Pharmacology & Natural Product (I)

Hall B

Chairs: Prof.	Moustafa M. El Missiry Sayed El Tomy Nadia S Metwally
10:00 - 10:10	**Does lycopene Tomato Paste Consumption Effectively Decrease Clastogenicity in Streptozotocin-induced Diabetic Rats?** Shenouda M. Girgis
10:10 - 10:20	**Protective and Therapeutic Impact of Taurine on some Biochemical, Immunological and Histological Parameters in Diabetic Rats** Nadia S Metwally
10:20 - 10:30	**Impact of *Salsola tetrandra* and *Salsola baryosma* on Liver Rat Toxicity with Acute Overdose of Paracetamol** Ahlam H. Mahmoud
10:30 - 10:40	***In Vitro* Antioxidant, Antimicrobial and Cytotoxic Activities and Green Biosynthesis of Silver & Gold Nanoparticles Using *Callistemon Citrinus* Leaf Extract** Amal M. Saad
10:40 - 11:00	**Discussion**

October 29th	11:00 - 12:00 AM

Pharmacology & Natural Products (II)

Hall B

Chairs: Prof.	Tarek El-Banna Manal Kamel Maher Al-Dabbas
11:00 - 11:10	**Incidence and Antimicrobial Resistance of Vancomycin Resistant *Staphylococcus aureus*in Tanta University Hospital, Egypt** Tarek El-Banna
11:10 - 11:20	**Antioxidant and α-Amylase Inhibitory Activities of Selected Medicinal Plants Grown in Jordan** Maher Al-Dabbas
11:20 - 11:30	**Study of Some Chemical Constituents and Biological Activity of two Plants from *Convolvulaceae* Family** Walid E. Abdallah
11:30 - 11:40	**Current Knowledge, Attitude, and Patterns of Oral Contraceptives Utilization Among Women in Jordan** Sanaa K. Bardaweel
11:40 - 12:00	**Discussion**

October 29th	12:00 – 01:00 PM

Biochemistry and Clinical Pathology

Hall B

Chairs: Prof.	Abdul Fatah Gbaj Maivel H. Ghattas Masanori Yoshioka
12:00 - 12:10	**Development of Immunoassays of Catecholamines and Their Metabolites** Masanori Yoshioka
12:10 - 12:20	**Polymorphism of Interferon Gamma promoter and Receptor Associated with Tuberculosis Patients in Basra Province, South of Iraq** Awatif H. Issa
12:20 - 12:30	**Potential Neuroprotective and Therapeutic Effect of Resveratrol in Management of Alzheimer's disease Induced Experimentally** Amal H. Hamza
12:30 - 12:40	**Elevated BAFF and APRIL in Juvenile Idiopathic Arthritis Patients: Relation to Clinical Manifestations and Disease Activity** Enas Abdel-Rasheed
12:40 - 12:50	**Microsomal Epoxide Hydrolase Gene Polymorphism as a Risk Factor for Developing Insulin Resistance and Type 2 Diabetes Mellitus** Maivel H. Ghattas
12:50 - 01:00	**Discussion**
01:00 - 03:00	**Lunch**

October 29th	03:00 - 04:00 PM

Environmental and Parasitic Diseases

Hall A

Chairs: Prof.	Hanem Fathy Khater Magda Hassan Mahran Sajjad S. Issa
03:00 - 03:10	**Real time Kinetics of Toxoplasma B1 Gene and their Seroprevelance Markers Following Miltefosin** Nehal M khairy
03:10 - 03:20	**Behavioral Changes Caused by Toxoplasmosis** Hanem Fathy Khater
03:20 - 03:30	**Zoonotic Health Hazards Concerning Brucellosis in Libya Animals and Human in Contact** Fauzia S. Elghanni
03:30 - 03:40	**Study of Zoonotic Enteric Viral Infections Circulating among Egyptian children** Aziza H. Kamel
03:40 - 03:50	**IL-17 Induced the Recruitment and Functional Activity of Granulocytes Isolated from Patients Coinfected with Schistosomiasis and Hepatitis C Virus** Soad Nady
03:50 - 04:00	**Discussion**

October 29th	04:00 - 05:00 PM

Ophthalmology (I)

Main (Hall A)

Chairs: Prof.	Fathia Elrefaei Mona M. Gamal
04:00 - 04:15	**Parasitic Diseases Affecting the Heart in Childhood** Ragaa Issa
04:15 - 04:30	**Health Hazards of Electromagnetic Fields as a Pollutant Agent on Cornea and Retina of Rats' Eye** Fathia Elrefaei
04:30 - 04:45	**Multivariate Analysis of Microbial Keratitis in Egypt** Maha Mohssen
04:45 - 05:00	**Discussion**

October 29th	05:00 - 06:00 PM

Ophthalmology (II)

Main (Hall A)

Chairs: Prof.	Ragaa Issa Iman A Fahmy
05:00 - 05:15	**Treatment of the Branch Retinal Vein Occlusion with Nd: Yag Laser Thrombolysis. An Experimental Study** Salwa Abdelkawi Ahmed
05:15 - 05:30	**Effect of Diclofenac on the Intraocular Pressure Lowering Action of Latanoprost in Albino Rabbits with Induced Ocular Hypertension** Amal A. El Gohary
05:30 - 05:45	**Contact Lens Associated Bacterial Keratitis (CLMK): Review Article** Magda Hassan Mahran
05:45 - 06:00	**Discussion**
06:00 - 07:00	**Break**
07:00 - 10:00	**Dinner**

October 29th	03:00 - 04:00 PM

Pathology

Hall B

Chairs: Prof.	Wafaa Abdel Aal Amina Gamal El Din Naglaa Abbas
03:00 - 03:10	**Ameliorative Effect of Aqueous Extract of *Brassica oleracea* in Rotenone Induced Oxidative Stress Model of Parkinson's Disease** Enayat Omara
03:10 - 03:20	**Potential Targets for Therapy in Triple Negative Breast Cancer** Amina A. Gamal el Din
03:20 - 03:30	**Immunohistochemical Expression of Alpha-methylacyl Coenzyme-A Racemase (AMACR) in Prostatic Carcinoma: Correlation with Image Morphometric Parameters** Naglaa F. Abbas
03:30 - 03:40	**Protective Effects of *Androctonus amoreuxi* Scorpion Extract and Sitagliptin Treatment on the Liver Injury of Streptozotocin-Diabetic Rats** Howayda A. Khaled
03:40 - 03:50	***Cordia dichotoma* Fruits Improves Lipid Metabolism in Rats Fed on Atherogenic Diet: Metabolic Study** Samah A. El-Newary
04:50 - 05:00	**Discussion**

October 29th	04:00 - 05:00 PM

Microbiology

Hall B

Chairs: Prof.	Refat Abd El Samee Sadeq Fatma Ibrahim Sonbol Siham I Abd ELDayem
04:00 - 04:10	**Antibacterial Properties of Larval Secretions of the Blowfly, *Lucilia sericata* (Diptera: Calliphoridae)** Mohamed Elshehaby
04:10 - 04:20	**Biocidal Efficacy Study of Non-thermal Plasma on Microbial Planktonic and Biofilm Forms** Refat Abd El Samee Sadeq
04:20 - 04:30	**Metabolites from the Fungal Endophyte *Aspergillus austroafricanus* in Axenic Culture and in Fungal-Bacterial Mixed Cultures** Mona El-Neketi
04:30 - 04:40	**Antibiotics in Viridans Streptococci Isolate from Odontogenic Infections in Tan University Dental Clinic, Egypt** Fatma Ibrahim Sonbol
04:40 - 04:50	**Prevelance of Carbapenemases Producing Imipenem Resistant Gram Negative Bacterial Isolates from Tanta University Hospital, Egypt** Eslam S. Ghazy
04:50 - 05:00	**Discussion**

October 29th	05:00 - 06:00 PM

Physiotherapy

Hall B

Chairs: Prof.	Gehan M Ahmed Hala A.Abdelgawad
05:00 - 05:15	**Effects of Overweight and Obesity on Motor Development in Young Children** Hala A. Abdelgawad
05:15 - 05:30	**Physical Therapy Intervention in Neck Pain and Radiculopathy** Gehan M Ahmed
05:30 - 05:45	**Effect of Counterforce Brace on Isokinetic Measurements and Myoelectric Activity of Wrist Muscles in Lateral Epicondylitis** Asmaa F Abdelmonem
05:45 - 06:00	**Discussion**
06:00 - 07:00	**Break**
07:00 - 10:00	**Dinner**

Poster (I)

Hall A

Chairs: Prof. Aly El-Nofely
Elmeya Safar
Awatif H. Issa
Hanaa Hamdy

10:00 - 01:00

Laboratory Acquired Blood-Born Parasitic Infections from Accidental Exposure: ***A Review article***
Elmeya Safar

The Relation between Advanced Glycation End Products and Cataractogenesis in Diabetics
Iman A. Fahmy

Induction of Apoptosis in Peripheral Blood Mononuclear Cells by Anti-Fas Monoclonal Antibodies in Rheumatoid Arthritis Patients with or without Uveitis
Siham I Abd EL Dayem

Effect of Grape Seed Extract on Oxidative Stress Induced by Argon Laser Beam during Eye Treatment
Mona M. Gamal

A New Kaempferol Glycoside with Antioxidant Activity from *Chenopodium ambrosioides* Growing in Egypt
Mosad A. Ghareeb

The Impact of the Education Program on Knowledge among Nurses Regarding Nosocomial Infection in Basra City, South of Iraq
Abdulameer Abdullah Al-Mussawi

01:00 - 03:00 **Lunch**

October 29th **03:00 - 06:00 PM**

Poster (II)

Hall A

Chairs: Prof. Hafiza A. Sharaf
Fatma Bassyouni
Abdulameer A. Al-Mussawi
Khaled A. Abdelshafeek

Pharmacological Activity Evaluation of New Heterocyclic Compounds Containing Chromoneindole and Chromonepyrazole Derivatives as Anti-inflammatory and Antidiabetic Agents with Study of Molecular Modeling

Fatma Bassyouni

Development and Evaluation of Span-Based Proniosomes as Drug Carrier for Glimepiride

Hamdy M. Dawaba

Association of *WDR36* Gene Polymorphism with Primary Open Angle Glaucoma in the Egyptian Population

Howyda I. Abdel-Halim

Design, Synthesis and Molecular Modeling Studies of New Benzimidazole Derivatives as Anticancer Agents

Mohammad A. Elmorsy

Isolation of Some Chemical Constituents (Lipids & Glucosinolates), Antidiabetic Activity and Molecular Docking of Active Constituents from *Cleome africana*

Wael Abdullah

06:00 - 07:00 **Break**

07:00 - 10:00 **Dinner**

October 30th	**10:00 - 10:30 AM**
10:00 – 10:30	**Closing Ceremony & Recommendations** **Main Hall**
Chairs: Prof.	Ashraf Shaalan Karam Mahdy Azza Abdel shaheed Moustafa M. El Missiry
10:30 – 01:00	**Social**
01:00 – 03:00	**Lunch**
03:00 – 06:00	**Social**
06:00 – 08:00	**Shopping**
08:00 – 10:00	**Dinner**

October 31th	10:00 - 12:00 AM
07:00 – 10:00	Breakfast
10:00 – 12:00	Hotel check out & Departure from Sharm El Sheikh

Conference Abstracts

Plenary session

Bio-banking and Stem Cells: New Era of Research Ethics, Are we ready for in our Arab Countries?

Wafaa El Sayed Abd El- Aal

Clinical Trial Unit, NRC.
Email: wabdelaal@yahoo.com

Introduction:

Establishment of Cord Blood Bio-banks in Arab countries is very important to improve transplant opportunities for Arab populations suffering from blood diseases. Governments in different Arab countries have to coordinate and collaborate in this era with unification of legislations and guidelines.

What is bio-banking and why is it important?

A bio-bank is an organized storage of human samples of bodily fluid or tissue, with the associated information to support medical research. Umbilical cord blood transplants are now used to treat numerous types of immune- and blood-related disorders and genetic diseases. Cord blood (CB) banks play an important role in these transplants by processing and storing CB units.

Ethical debate about bio-banking:

- Ownership of Samples and results and privacy of research participants
- Transfer of samples and data: this is a very important issue especially in our region. MTA is mandatory.
- Sharing of benefits
- Commercialization

Current status in Arab Countries

We discussed situation in different Arab countries e.g. Jordan, Saudi Arabia, United Arab Emirates, Egypt and Qatar.

Recommendations:

- Public CB banks require significant financial support to establish a high-quality, CB units.
- Public trust is very important for success of CB programs in Arab countries.
- Great need for knowledge transfer and training.

Biases in Research Study: How to Avoid Them

Jaffar M. Al Bareeq

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King Hamad University Hospital, Kingdom of Bahrain
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A bias is a tendency, which could prevent unbiased consideration or evaluation of an idea, selecting or encouraging one finding or result over others. Bias could occur at any stage of research, including pretrial, during the trial, after trial, data collection and data analysis. Bias in research could begin in the conception stage through preconceived ideas.

Pre-trial bias could be avoided in the study design if risk and outcome were clearly defined, distinct objective or validated methods were identified; select standardized and blind data collection. The patients should be recruited from the same general population; otherwise, bias would be unavoidable. To avoid channeling bias, select two interventions that carry the same risk and apply rigorous selection criteria.

Bias during trial could be avoided by blinding the interviewer to exposure status; prospective studies could eliminate chronology bias; use objective data or prospective studies to avoid recall bias; cater for lost-to-follow-up patients prior to the study; clearly define exposure prior to study; use objective diagnostic studies; consider cluster stratification to minimize variability in surgical technique; physical examination should confirm reported history of healing or other changes by the patient and finally, to avoid selection bias, define the study population, make certain the population is accessible and reliable.

Bias after trial could be avoided by registering the trial with an accepted clinical trials registry and to publish the trial despite the negative outcome and the objection of the sponsors; confounding factors could be controlled by case-control design and randomization and never allow gift authorship based on position.

Child Development: Is It Morphological, Physiological, or Psychological?

Aly El-Nofely

Biological Anthropology Department, National Research Centre, Dokki, Cairo, EGYPT
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Most probably growth and development are the most frequently used terms in Axiology and related sciences, however their content are not equally conceived with the same depth till now. Although there is a general agreement among biology scholars that growth can be simply defined as increase in size due to self multiplication of the living substance, but the term development is perceived in different ways. Some scholars relate development to morphology and physiology, others to psychology and behavior. Reviewing the relevant literature one could observe that development differs morphologically from growth, due to the fact that growth implies formation of new unites, but development involves elimination of units as well. Besides, differentiation of forming unites and differential rate of growth in the three spatial dimensions and changes in proportions of an organ or the whole body are main developmental processes. Pediatricians are inclined more to assess development on basis of changes in gross motor activities i.e. physiology of the neuromuscular system. Sociologists, educationists and psychologists are prone more towards considering development as changes and advancement in cognition, emotion, behavior and personality in general. It seems most probable that child development involves the whole three aspects, morphology, physiology and psychology, since the three aspects are inseparable and each complements and interacts with the others to carry the growing individual to the mature state.

***Keywords*:** Biology, Development, Morphology, Physiology, Psychology

Health Research Priorities: An EMR Perspective

Ahmed Mandil, Coordinator, Research Development & Coordination

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Prioritization of health research is important for sound resource allocation and related decision making. There are many tools for setting research priorities but no ideal template. Hence, there are no universal methods or standards that apply to all. The broad domains which should be considered in any research priority setting process include: feasibility (technical, economic, logistic); national health priorities; public health benefit / impact. Steps of prioritization include: review of background material; common understanding of the challenges; identifying knowledge gaps in each of the programmes in hand; and converting knowledge gaps into research domains. In EMRO, we work with national healthcare delivery agencies / disease control programs to yield information about health research priorities; converge / review information by relevant departments / areas or work; discuss with in-house departments / areas of work using different exercises; and update lists, based on feedback / outcome of meetings. Such exercises need capacity-building on health research prioritization; carrying out scientific priority-setting exercises, involving different stakeholders. The presentation will provide examples of research priorities for the main strategic areas of work of EMRO, including: health systems strengthening; health security and communicable diseases; non-communicable diseases and mental health; emergency preparedness and response, in addition to reproductive, maternal, child, adolescent health and nutrition. Eventually, we have to keep in mind: technical feasibility (capacity building in epidemiology, biostatistics, research methods & ethics, knowledge management & translation); economic feasibility (effective national mechanisms for health research funding; institutionalization of research & development within different healthcare delivery agencies / disease prevention and control programs); logistic feasibility (supporting health research institutions within framework of national health agendas); public health impact and sustainable development (linking research-generated evidence emanating from academia and health research institutions with health policy making).

Pediatrics & Child Health (I)

Serum Levels of Asymmetric Dimethylarginine, Malondialdehyde and Paroxonase Activity among Egyptian Non-obese Asthmatic Children

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Background/Aim: Asthma is a chronic airway disease, characterized by oxidant antioxidant imbalance with generation of oxidative stress related mediators. The study aimed to evaluate the role of asymmetric dimethylarginine, and malondialdehyde as oxidant markers and serum paroxonase activity as antioxidant marker in asthma pathogenesis, and to determine their relationship to the asthma severity, and lung function among non-obese asthmatic children in Egypt.

Patients and Methods: This cross sectional case control study was conducted on 60 patients with asthma compared with thirty apparently healthy children of matched age and sex.

Results: Serum asymmetric dimethylarginine, and malondialdehyde levels were significantly increased in asthmatic patients, while serum paraoxonase activity was significantly decreased in asthmatic patients compared to healthy controls ($P< 0.05$). ANOVA test followed by Post Hoc test revealed highly significant elevation of the serum levels of oxidant markers in the patients with severe asthma ($P<0.001$) compared to the patients with moderate and mild asthma respectively. Serum level of malondialdehyde was strong predictor of asthma severity by multiple regression analysis ($P< 0.05$).

Conclusion: The study revealed imbalance between oxidative and antioxidant defense systems in asthmatic children. Serum level of malondialdehyde was the only biomarker having significant association with disease severity.

***Keywords*:** asthmatic children, Egyptian, non obese**,** asymmetric dimethylarginine, malondialdehyde, paroxonase activity

Infant and Child Feeding Practices among Mothers in a Selected Slum Area in Cairo City, Egypt: A Descriptive Study

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Background: The World Health Organization (WHO) and United Nations Children's Fund (UNICEF) recommend early initiation of breastfeeding and exclusiveness for the first 6 months of life and addition of complementary foods at six months of age with continued breastfeeding till at least two years. The aim of this study was to assess breast feeding and complementary feeing practices among mothers in a selected slum area in Cairo.

Subjects and Methods: Four hundred and sixty nine children in the age of <0-60 months were included in the study. Mothers were interviewed by trained community health workers about breast feeding initiation, exclusiveness and complementary feeding using a pretested, structured questionnaire. Data were analyzed using SPSS software (version 16.0). Frequencies were calculated for descriptive analysis.

Results: Breastfeeding was practiced by 92.9% of mothers for roughly 1 year and continued between the age of 1-2 years by 40.7% of them. Initiation of breast feeding was practiced by 87.6% of mothers in the first hour after delivery. Only a small proportion (12.6%) of mothers practiced exclusive breastfeeding during the first six months. Prelacteal feeding as sugar-water, herbal teas were given to infants by 22% of the mothers. Complementary foods whether solid, semi solid or soft foods were introduced earlier than the international recommendation of six months by 84.8% of the cases according to family and friends advise. Yoghurt and beans were commonly given to the infants at the age of 2-3 months in 57.7% and 20.9% of the cases respectively.

Conclusion: Appropriate educational interventions on breastfeeding and complementary feeding are important to improve existing infant feeding practices, this needs to empower the counseling skills of community health workers.

***Keywards*:** breastfeeding, initiation, exclusive, prelacteal feeding, complementary feeding.

Evaluation of Angiopoietin-2 Serum Level as a Marker of Cardiovascular Risk in Children with Chronic Kidney Disease

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Background/Aim: Cardiovascular complications are a major clinical problem in uremic patients accounting for 44% of all deaths in this population. Angiopoietin cytokines are involved with controlling micro vascular permeability, vasodilatation and vasoconstriction by signaling smooth muscle cells surrounding vessels. Aim: To assess Angiopoietin-2 serum level as an early marker of cardiovascular risks in children with chronic kidney disease on regular hemodialysis and correlate with intimal medial thickness and echo data in those children.

Patients and methods: The study included 40 children with CKD on regular hemodialysis (HD), and they were selected from the hemodialysis unit of Al-Zahraa Hospital, Al-Azhar University, during the period from December 2014 to April 2015. Another group of 40 apparently healthy children, matches age and sex with patients group as a controls. Angiopoietin-2 serum level, Doppler ultrasound (U/S) to assess: intima-media thickness (IMT) and the peak systolic velocity (PSV) of the main arteries including the (aorta, carotid and femoral) arteries, conventional echo and tissue Doppler imaging (TDI) of mitral and tricuspid annular velocities are obtained for both groups.

Results: Children on regular HD have significantly higher (Angiopoietin-2) serum level compared to their controls, and it is (161.35 ± 38.30 ng/ml) and (9.25 ± 12.64 ng/ml) respectively (p, 0.000) and increases in the aorta, carotid and femoral (IMT) with significant increase in their mean systolic velocities in patients group compared to the controls. Significant increase in tricuspid valve late diastolic velocity (TVA) vel m/s) and (E/e' ratio) obtained by (TDI), its abnormalities threshold is detected in patients group than controls, with significant increase right ventricular systolic pulmonary pressure in patients compared to the controls. **Conclusions**: Higher prevalence of right ventricular dysfunction is detected by conventional and TDI echo in children on hemodialysis. Angiopoietin-2 can be used as an ideal biomarker which may progress to play an adjunctive role with echocardiography in assessing cardiovascular risk of children with CKD on regular hemodialysis.

***Keywords*:** Angiopoietin-2 - Cardiovascular - Children – Chronic Kidney Disease

Breakfast Skipping and Its Associated Factors among Primary School Children in Cairo Governorate, Egypt

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Background: Breakfast defined as the first and the most important meal of the day where children can benefit from its consumption in several ways. The aim of this work was to study the prevalence of skipping breakfast and its associated factors.

Subjects and Methods: Thirty hundred and fifteen governmental primary school children aged ten to eleven were included in the study. Pretested questionnaires were used by nutritionists to collect data from the children about socio demography, breakfast consumption and reasons for skipping breakfast. The data was analyzed using SPSS version 16.

Results: Results showed that 32.2% of the children skipped their breakfast during the survey day**.** Girls were significantly more likely to skip breakfast than boys (52.2% girls, 47.8% boys, p-value <0.001). More than two third (69.5%) of those who skipped breakfast had foods with them to be eaten during the school day break. Reasons given for skipping breakfast were; child was not habituated (44.7%), lack of time (34.5%), fasting (7.6%), no appetite (6.1%), no food available (3.8%) and mothers were sleeping (3.0%). Father job which reflects education and economic status was the most important factor for not skipping breakfast. Although 24.1% of mothers were employed, they were keen to offer breakfast to feed their children.

Conclusion: Eating breakfast should be recommended by both parents and teachers**.** Teachers have a good role to play by allowing the children ten minutes before starting the educational class to eat the foods they have.

***Keywords*:** Breakfast skippers, Primary school children, Socio demography.

Pediatrics & Child Health (II)

Role of Trace Elements, Heavy Metals and Vitamins in Iron Deficiency Anemia among Egyptian School Children

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Background/Aim: Iron deficiency anemia (IDA) is a wide spread syndrome among children especially in the developing countries due to malnutrition, infection or inflammation. The aim of our study was to determine the levels of serum trace elements as copper (Cu), zinc (Zn), iron (Fe), magnesium (Mg), and selenium (Se) in IDA Egyptian school children. The work was extended to estimate the level of heavy metals; lead (Pb) and cadmium (Cd) as well as the levels of vitamin A and D.

Subjects and Methods: This cross section study was performed on 120 children (age 6-12 years). Iron deficiency anemia was observed in 90 individuals (32 male and 58 female). Thirty healthy children (without anemia) were regarded as control.

Results: The results revealed significant decrease in Zn, Fe, Mg, Se and vitamins A and D levels in IDA patients as compared to control group, while Cu is significantly increase ($p<0.001$). The levels of lead and cadmium were significantly ($p<0.0001$) higher in IDA patients than controls. Hemoglobin (Hb), mean corpuscular volume (MCV), red blood cell (RBC) and ferritin levels in subjects with IDA were significantly lower than control. Significant degrees of correlations between these hematological indices and the selected elements were observed as well as between these elements with each other. According to the anthropometric measurements, the children with IDA were underweight and undergo a stage of stunting and wasting.

Conclusion: 82% of the IDA children suffered from at least two micronutrient deficiencies. In addition, iron deficiency may increase susceptibility to lead poisoning because it has been speculated that iron deficiency can cause increased absorption of lead. Cu is the only trace element that is not associated with iron deficiency level suggesting that copper biochemical processes dependent and participate during iron deprivation.

***Keywords*:** Iron Deficiency Anemia, Children, Trace Elements, Heavy Metals, Vitamins

Measurements of Serum Cystatine C and B_2 Microglobulin for the Early Detection of Acute Kidney Injury in the High Risk Neonates

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Objectives: Acute kidney injury (AKI) in the newborn is a common problem in the neonatal intensive care unit. This work was conducted to study the pattern of different kidney disorders in the neonatal intensive care units (NICU), Cairo University during a period of one year. Also, to investigate the role of cystatin C and Beta-2 microglobulin as biomarkers, for diagnosis and monitoring of renal diseases.

Patients and Methods: This study included 80 neonates who presented with different patterns of renal disorders that were admitted to NICU, Cairo University. Inclusion criteria were: acute renal injury, hypertension, proteinuria, hematuria and urinary tract infection. All the neonates were subjected to full history taking and detailed clinical examination. Laboratory investigations will be monitored at day 0, day 4 and on discharge by the following: complete blood count, serum sodium, potassium, calcium, phosphorus, blood urea nitrogen (BUN), creatinine, serum cystatine C and serum Beta-2 microglobulin.

Results: total number of admitted cases was 1143 neonates, signs or laboratory findings suggestive of kidney involvement were present in 6.8% of them, AKI represent 49.8% cases. The commonest cause of AKI was sepsis (72.5%). Initial serum cystatine C and B2 microglobulin revealed no difference while at day 4 and on discharge there was significant difference between AKI and non AKI group ($P<0.05$). On admission serum cystatine C and creatinine revealed no difference while the difference at day 4 was significantly higher in the AKI group, on discharge there was no difference.

Conclusion: Although renal insult in babies admitted to NICU had a low prevalence it contributed to mortality of 30%, AKI was the most common cause of kidney affection. Serum cystatine-C and B2 microglobulin may be considered as sensitive predictive parameters for reduced glomerular filteration rate. It is of value for the laboratory diagnosis of AKI.

***Keywords*:** Acute kidney injury- cystatine C- B2 microglobulin- neonates.

Central Obesity in Relation to Lipid Profile and Adiponectin among Egyptian School Children

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Background/Aim: The simplest way to assess central obesity is to measure waist circumference (WC), which is the precursor for many cardiovascular diseases. The present study aims to the relation between central obesity; indicated by waist circumference, adiponectin and cardiovascular disease risk factors (blood pressure, lipid profile) among obese children.

Subjects and Methods*:* This study was a cross sectional case-control one. Anthropometric measurements (weight, height, BMI, waist and hip circumferences), blood pressure, serum adiponectin and lipid profile (cholesterol, TG, HDL, LDL) were obtained on 40 obese children and 40 healthy non-obese control, aged 6- 11 years.

Results: Waist circumference (WC) was significantly wider among obese males than among obese females, but it had insignificant sex difference among control. Obese males had statistical significant higher values in all the anthropometric measurements under study, some markers of lipid profile (triglyceride, total cholesterol), and diastolic blood pressure (DBP), and lower values in high density lipoprotein (HDL) and adiponectin. The same results were observed on comparing obese and control females, except for blood pressure (either systolic or diastolic). Central obesity (WC > 90th percentile for age and sex -72 cm) was detected among obese not controls. WC had positive significant correlation with diastolic blood pressure, triglyceride and total cholesterol for obese males, and triglycerides only for obese females, and negative significant correlation with high-density lipoprotein (HDL), total cholesterol/ HDL ratio and adiponectin for both obese males and females. When the effect of age was excluded in the partial correlations, these significant correlations disappeared.

Conclusion: Central obesity; indicated by WC, is significantly correlated with adiponectin and lipid profile; except LDL; for both sexes, and with diastolic blood pressure among obese males only. The age has an important effect on these correlations.

***Keywords*:** Waist circumference, Central obesity, Blood pressure, lipid profile-Adiponectin.

Post-Tonsillectomy Hemorrhage and Other Complications

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Background/Aim: Post-tonsillectomy hemorrhage is a serious complication; if not managed properly, it could be life threatening. The present study aims to evaluate the incidence of post-tonsillectomy bleeding.
Design: A Retrospective Study.
Setting: ENT Department, King Hamad University Hospital, Bahrain.
Method: Seven hundred twenty-nine patients operated for tonsillectomy from February 2012 to February 2014 were included in the study. Patients who had tonsillectomy in other hospitals were excluded from the study. Some surgeons used hot technique, others used cold technique. Some patients had been operated for adenoidectomy and turbinate reduction by laser. Data documented were age, gender, type of tonsillectomy technique used, type of hemorrhage (primary or secondary), type of management postoperatively and other postoperative complications.
Result: Seven hundred twenty-nine patients were operated for tonsillectomy from February 2012 to February 2014. Twenty-eight (3.8%) patients had post-tonsillectomy bleeding, 9 (1.2%) were children and 19 (2.6%) were adults. Two (0.2%) were primary and 26 (3.6%) were secondary bleeding. Twelve (1.6%) patients underwent tonsillectomy by hot technique and 16 (2.2%) by cold technique. Twenty (2.7%) patients were managed by admission and observation. Eight (1.1%) were managed by cautery or ligation in the operation theater. The female to male ratio was 11:17. Other complications encountered were broken tooth, neck pain, nasal bleeding, and fever.
Conclusion: In this study, the incidence of post-tonsillectomy bleeding was 3.8% and no mortality was recorded during the period of the study. Further multicentric study with a larger sample is recommended.

***Keywords*:** Post-Tonsillectomy- Hemorrhage - Complications

Community Medicine

Study on Abdominal Obesity at Basra University Staffs

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Background/Aim: obesity among adult has become a major public health problem in developed and developing countries, including Iraq. With wide range of adverse outcomes of include psychological and physical effects and obesity is a major risk factor for cardiovascular diseases, diabetes, hypertension and cancers. The aim of this work is to study the prevalence of obesity and abdominal obesity in Basra university staff, defined by body mass index (BMI) and waist circumference measures according to American Heart Association.

Material and Methods: A descriptive cross- sectional study was designed involving Basra university staff for the study of abdominal obesity. The university of Basra had two locations: karmet Ali (108 samples) and Bab Alzubiar (158 samples), A randomly selected sample was taken from a list of the college; from the selected college we were chosen staff randomly. The total number of the selected college was 10, were all the departments in that colleges was included and the total number selected of staff was 266, from them were females 146 and 120 males .the demographic data has been obtained from each person in the study, The working team was asked to measure the height, weight, waist circumference and Random Blood Sugar for each selected sample, using a weight and height scale, tape measure and portable blood sugar measurement instrument. (SPSS), Version17 was utilized for the purpose for statistical analysis of the data.

Results: The results were 45 % was males and 55 % was females, BMI: 19.5 % had healthy weight, 36.8 % were overweight, 27.8 were obese, 12 % were severely obese, 3.8 % were morbidly obese, and 43.6 % of the sample was obese. 37.5 % of the males were obese and 48.63 % of the females were obese .30.8 % carried positive history of obesity and 36.8 % of the sample was practicing sport exercise, 87.6 % were having normal blood sugar while 12.4 % were having abnormal blood sugar (diabetics), 18 % of the females had normal waist circumference and 47.5 % of the males had normal waist circumference , that is mean 87 % of the female had abdominal obesity and 52.5 % of the males had abdominal obesity .the prevalence of abdominal obesity was 31.57 %, high significant correlation between waist circumference and gender, significant correlation between BMI and practicing exercise and there is highly significant correlation

between BMI and positive history of obesity in the family. High significant relationship between body weight and waist circumference and high significant relation between waist circumference and history of obesity, significant relation between waist circumference and number of daily meals and high significant relation between waist circumference and random blood sugar.

Conclusion: the prevalence of obesity among Basra university staff is 43.6 %, obesity is higher in females compared to males, where 37.5 % of the males were obese and 48.63 % of the females were obese, 12.4 % of the Basra university staff were having abnormal blood sugar (diabetics) Abdominal obesity is more is females as compared with females, where mean 87 % of the female had abdominal obesity and 52.5 % of the males had abdominal obesity. The prevalence of abdominal obesity was 31.57 %

***Keywords*:** Obesity, Abdominal obesity. Body Mass Index (BMI), waist circumference

The Accuracy of PET CT Scan in Detecting Axillary Lymph Node Metastasis in Breast Cancer in KHUH: Case Series and Literature Review

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Objective: To record the accuracy of positron emission tomography CT scan in detecting axillary lymph node metastases in patients with primary breast cancer in comparison to the pathology results.

Patients and Methods: In our retrospective study, 21 women who were newly diagnosed with invasive breast cancer were staged using FDG –PET/ CT scan. Images were reviewed by two experienced radiologist for any abnormal increase in axillary FDG uptake. Imaging results were compared later with axillary lymph node pathology (sentinel lymph node biopsy, FNA cytology from axilla or axillary clearance).

Results: All of our patients had histopathology results that matched the PET/CT finding except for 2 patients which matched the CT scan alone but not the PET scan. Sensitivity of the PET/CT for detection of axillary lymph node metastasis in this series was 80% and the specificity was 100%. Both our sensitivity and specificity was noted to be high compared to other published data.

Conclusions: PET/CT scan is highly sensitive and specific in detecting axillary lymph nodes metastases in breast cancer. The fact that the sensitivity reached 80% and the specificity was 100% in our study, can be attributed to the small patient sample (21 cases) and the improvement in the new generation of the PET/CT scanners with higher resolution led to further increase in the diagnostic value. On the other hand, the literature review showed that PET and PET/CT had lower sensitivity than axillary biopsy. Therefore, replacing lymph node biopsy with PET/CT may lead to more false negative patients at risk of recurrence. The present evidence does not support the routine use of PET/CT for the assessment of the clinically negative axilla.

***Keywords*:** Breast Cancer, Axillary Metastases, Positron Emission Tomography (PET),

Patient Safety Climate: A Multicenter Exploration Study

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Background: Patient safety is a cornerstone of healthcare organizations performance. Measuring patient safety culture may reflect organizational efforts and readability to improve patient safety practices.
Aim: To explore patient safety climate in five medical centers
Method: Utilizing the Safety Climate questionnaire, a cross-sectional descriptive design was undertaken to explore safety climate in five hospitals of Madinah Region/ Saudi Arabia. A convenient sample of 670 nurses who provide direct care to the patients responded to the survey with overall response rate of 84%.
Result: Safety climate means were close at study locations: (M=3.10, SD=.76), (M=3.11, SD= .80), (M=3.16, SD=.74), (M=3.45, SD=.65) and (M=3.23, SD=.65) with overall result of (M=3.26, SD=.73). However, ANOVA showed significant differences among three locations who had involved in the national accreditation move $F(4,665) = 8.7$, $p=.00$.
Conclusion: Safety climate measures serve organizational awareness about the need to improve staff knowledge and attitude toward safety practices. Involvement into national accreditation processes showed significant differences in organizational safety climate change.
Recommendations/ Implications for practice: Patient safety is major challenge to every healthcare organization. Therefore, measuring safety climate should be performed on regular basis to know the impact of patient safety programs and accreditation processes. More systemic efforts needed to enhance safety climate.

Hyperbaric Oxygen Therapy as an Adjunct in the Management of Diabetic Foot Complications

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Objective: To evaluate the use of hyperbaric oxygen therapy on the rate of lower limb amputation and total wound healing in the management of diabetic foot.
Setting: Hyperbaric Unit, King Hamad University Hospital.
Design: A Retrospective Study.
Method: All diabetic patients with a breach of the skin of the foot and who had received either wound care or combined with hyperbaric oxygen therapy from January 2012 to September 2013 were included in the study. Data documented were the following: lower limb amputation, minor amputation, surgical debridement, healing status achieved and the effect of hyperbaric oxygen therapy on any of these outcomes.
Result: Seventy-six patients had Diabetic Foot Ulcers of different stages. The Wagner grading system and University of Texas diabetic foot severity scale were both used to determine the most sensitive and specific tool for future use. Fifty-two (68%) patients were included for analysis, 25 (48%) were grade 3-4 Wagner Classification and 29 (56%) 2D-3D University of Texas Classification, 44 (85%) were male and 8 (15%) were female. The majority were in the age group of 45-64 years. Full healing was achieved in 42 (80.8%) patients. Four (8%) patients had major amputation procedure. All patients analyzed had received hyperbaric oxygen as adjunctive therapy.
Conclusion: In this study, only four (8%) patients had major amputation procedure. Hyperbaric oxygen therapy reduced overall major limb loss and helped in acceleration of wound healing achieved. An integrated team approach played a role in achieving good patient outcomes despite late presentation.

Electronic Continuous Medical Education Program in King Hamad University Hospital

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Background/Aim: Continuous Medical Education (CME) was established many years ago in USA and Western Europe based on research, which showed that some health professionals do not update their knowledge and expertise to optimize patients care. The main objective of CME credit system is to protect the patient and update the physician's knowledge in the practice of the art of medicine. The present study aimed to evaluate new electronic CME program and its impact on healthcare delivery.

Design: Prospective study.

Setting: King Hamad University Hospital (KHUH), Bahrain.

Method: An electronic program was designed and established to record CME activities submitted as self-claims using the "KHUH online Program". The program was launched on 6 January 2013. The CME activities included in our program are the following: Lecture, conference, workshop, course, seminar, postgraduate degree course, publication/editorial work/presentation of original paper or poster, self study and distance learning. The activity is verified by the Head of Department (HOD) and the Director of Education and Proficiency Center (DEPC). Physicians were advised to check their CME credits periodically and they could generate a report of their activity for relicensing purpose. Physicians were trained to use the program. Fifty physicians were given an evaluation form to assess the impact of CME on their medical practice.

Results: The program was launched on 6 January 2013. The first report of its usage was issued on 20 February 2013, which showed that 77% of radiology, 66% of ophthalmology, 47% of pediatric and 37% of pathology physicians have used the program. Physicians in other specialties used it to less extent (30% ENT, 21% orthopedic, 20% general surgery, 15% internal medicine, 14% urology and 3% accident & emergency). Anesthesia & ICU and gynecology & obstetrics had zero usage. The second report was issued on 20 March 2013, it showed that 87.5% of ophthalmology, 87.5% of radiology, 47% of pediatrics, 42.8% of orthopedic, 37.5% of pathology, 33.3% of urology, 30% of ENT, 22% of internal medicine, 21% of gynecology & obstetrics, 20% of general surgery, 8.8% of anesthesia & ICU and 3.8% of accident & emergency physicians have used the program. None of the department had zero usage, but those who had zero usage in the first had low scores in the second. The third report was issued on 24 April 2013 which showed similar pattern to the second report. The evaluation of the fifty physicians revealed that 46

(92%) thought that the program met the objective, 45 (90%) were prepared to use the knowledge in medical practice, 45 (90%) the program was suitable to their knowledge and background, 40 (80%) the program was easy to use, 42 (84%) the instructions were easy to use, 39 (78%) the verification by the HOD and the DEPC was clear and relevant, 43 (86%) the interest in medical development was maintained by the program and 38 (76%) thought that the program would affect their medical practice.

Conclusion: The electronic CME program usage has increased substantially within one month. The majority of physicians thought that the interest in medical development was maintained by the program and it would influence their practice of medicine.

***Keywords*:** Continuous, Medical, Education, CME, Online, Program

Pharmacology and Natural Products (I)

Does Lycopene Tomato Paste Consumption Effectively Decrease Clastogenicity in Streptozotocin-Induced Diabetic Rats?

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Objective: The present study was to determine the possible therapeutic effects of oral tomato paste lycopene supplementation on clastogenicity induced by hyperglycemia in diabetic rats.

Materials and Methods: Diabetes was induced by streptozotocin (STZ) injection. Twenty eight male Wistar rats were divided into 4 groups (7 rats per group) as follow: 1- the first group served as control. 2- the second was a diabetic (STZ induced) group, 3- the third was a diabetic+lycopene treated group and 4- the fourth was a lycopene treated group. The treatment period was 2 monthsand the animals were subjected to micronucleus assay.

Results: The results of the present study revealed that a significant increase in micronucleus frequency in the diabetic group (STZ-induced) compared to control. However, supplementation with lycopene in STZ-induced diabetic group decreased significantly the incidence of MN frequency and restore the MN range to the normal control.

Conclusion: In conclusion, oral tomato paste lycopene supplementation effectively decrease clastogenicity in Streptozotocin-induced diabetic rats through its antioxidant activity.

***Keywords*:** Lycopene, anticlastogenic, streptozotocin, diabetes, rats.

Protective and Therapeutic Impact of Taurine on Some Biochemical, Immunological and Histological Parameters in Diabetic Rats

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Background: Taurine is a non protein amino acid found in most animal tissues. It is a powerful antioxidant which shares in combating the harmful effect of the reactive oxygen species, associated to many chronic diseases as diabetes mellitus which characterized with hyperglycemia and disorders in the metabolic pathways of the body that leads to the release of ROS in the cells.

Methods: The present work evaluates the biochemical and immunological role of taurine (500 mg/kg bwt) in ameliorating diabetes harm in rats and compared with the effect of the antidiabetic drug (amaryl). Six groups were established for the experiment. Group1: control rats without any supplementations. Group 2 was diabetic non treated rats. Group 3**:** rats received taurine for three weeks. Group 4**:** rats were supplemented with taurine for three weeks then injected streptozotocin (STZ) (prophylactic gp). Group 5**:** rats were injected with STZ then supplemented with taurine for four weeks (therapeutic gp). Group 6: rats were injected STZ then treated with amaryl drug for four weeks. Serum glucose and insulin levels in addition to liver function enzymes and lactate dehydrogenase enzyme were determined. Glutathione reductase enzyme activity and lipid peroxidation were monitored in liver tissue by measuring malondialdhyde resulting from lipid peroxidation. With respect to the immunological responses the thymocytes and splenocytes numbers were counted besides measuring serum IgG level. Histological and immunohistochemical studies were performed in pancreatic sections.

Results: showed the ability of taurine in decreasing glucose level and increasing insulin with the same efficacy as amaryl drug besides affecting liver enzymes and improving the antioxidant system in cells. Taurine also restored the decrease in mean number of thymocytes and splenocytes caused by DM. Sera IgG levels from pre- and post-treatment with taurine showed non significant increase compared to the diabetic non treated group.

Conclusion: post-treatment supplemention of taurine is recommended for T2DM.

Keywords**:** Taurine –Diabetes –Insulin – Amaryl –Antioxidants-Thymocytes-Splenocytes-IgG.

Impact of *Salsola tetrandra* and *Salsola baryosma* on Liver Rat Toxicity with Acute Overdose of Paracetamol

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Objective: The study was conducted to explore the defensive impact of *Salsola tetrandra* and *Salsola baryosma* plant extracts against paracetamol-instigated intense hepatotoxicity in rats was investigated.

Methods: Hepatotoxicity was actuated by administration a single oral dose of paracetamol (3 g/kg/b.w.). The extract of the aerial parts of plants (100 mg/kg) was utilized on a pre-and post-treatment basis.

Results: *Salsola tetrandra* and *Salsola baryosma* extract reduced the liver parameters; ALT, AST, ALP and total bilirubin level in prophylactic and therapeutic treatment. A similar pattern was observed in pre- and post-treatment of the plants extracts with a reduction in urea, creatinine levels, MDA content, POX-1 enzyme activity, serum IL-1 and TNF-α level. Histopathological and histochemical of liver tissue was in harmony with the biochemical studies showing marked improvement in liver tissue was seen in the *Salsola tetrandra* and *Salsola baryosma*-treated groups. It was found that post-treatment demonstrated preferred results over pre-treatment in paracetamol hepatotoxicity.

Conclusion: The results demonstrated that the extracts of *Salsola tetrandra* and *Salsola baryosma* have hepatoprotective consequences for paracetamol-incited hepatotoxicity in rats.

Keywords**:** *Salsola* extracts- Paracetamol- liver function- IL-1 and TNF-α- Histopathology.

In Vitro Antioxidant, Antimicrobial and Cytotoxic Activities and Green Biosynthesis of Silver & Gold Nanoparticles Using *Callistemon Citrinus* Leaf Extract

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Objective: The current study was aimed to synthesis and characterization of silver (AgNPs) & gold (AuNPs) nanoparticles using *Callistemon citrinus* leaf extract, and to evaluate their *in vitro* antioxidant, antimicrobial, cytotoxic activities as well as their total phenolic content (TPC).
Material and Methods: Silver and gold nanoparticles were characterized via UV-vis absorbance spectroscopy, transmission electron microscopy (TEM), and X-ray diffraction (XRD) analyses. The antioxidant activity was evaluated using dot-blot and DPPH staining, and phosphomolybdenum assays. Also, the *in vitro* antimicrobial activity was evaluated via disc agar plate method. The cytotoxic activity was evaluated via brine shrimp lethality test (BSLT), and TPC was estimated via Folin-Ciocalteu's assay.
Results: The transmission electron microscopy (TEM) analysis showed that the sizes of the synthesized AgNps ranged from 8-14 nm with maximum UV/vis absorbance at 450nm. Also, the synthesized AuNPs exhibited an average size of 5.8 to 8.84nm with maximum UV/vis absorbance at 535nm. Moreover, the results revealed that TPC of the tested extracts was ranged from 548.85 to 123.30 mg gallic acid equivalent (GAE)/g dry extract. The total antioxidant capacity (TAC) was ranged from 643.90 to 147.96 mg ascorbic acid equivalent/g dry extract. Furthermore, there is a promising antimicrobial activity against four strains with inhibition zones ranged from 8.5 to 15.5mm, Penicillin G was used as positive control at concentration of 100 µg/disc. In terms of LC_{50} the *n*-butanol extract (63.09 µg/ml) was the most potent cytotoxic, followed by EtOAc (100.0 µg/ml).
Conclusion: In, conclusion the leaves of *Callistemon citrinus* showed a noticeable antioxidant, antimicrobial & cytotoxic activities and the ability to produce AgNPs and AuNPs.

***Keywords*:** *Callistemon citrinus* (L.); antioxidant; antimicrobial; cytotoxic; TPC; AgNPs; AuNPs; UV-vis; TEM, XRD.

Pharmacology & Natural Products (II)

Incidence and Antimicrobial Resistance of Vancomycin Resistant *Staphylococcus aureus* in Tanta University Hospital, Egypt

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Objective: The incidence of vancomycin resistant S*taphylococcus aureus* (VRSA) and their antibiogram against different antimicrobials were examined. Possible mechanisms of resistance to vancomycin and other antimicrobials were studied.
Method: Vancomycin resistance was screened using disk diffusion test and its MICs values were determined by agar dilution method. Susceptibility of VRSA isolates to 15 antimicrobial agents was tested by agar dilution method. Resistance mechanisms to vancomycin and β-Lactams and quinolones were studied. Inducible clindamycin resistance and biofilm formation were also determined.
Results: Out of 437 staphylococci recovered from clinical samples 89 (20.36%) were VRSA and 117 (26.77%) were vancomycin intermediate (VISA). All VRSA isolates were resistant to 10-15 antimicrobials and had a high multiple antibiotic resistance (MAR) index value (>0.2).These isolates were multidrug resistant (MDR). Most of tested isolates (70.3%) contained plasmids of molecular sizes of 4 to 120 kb.PCR analysis of VRS isolates and their cured derivatives revealed that all tested isolates harbored *van*A gene. Transmission electron microscopy showed that VRS isolates had increased cell wall thickness in comparison with VSS and this thickness was directly proportional to vancomycin MIC values. A total of 88.7% of isolates produced β-Lactamase enzyme. Efflux mechanism was detected in all VRSA isolates that were resistant to ciprofloxacin. Higher biofilm formation was found to increase in VRSA isolates with higher vancomycin MICs. Detection of inducible clindamycin resistance was performed on all VRSA isolates that were resistant to erythromycin and sensitive to clindamycin. A percentage of 82.8% tested positive which means that *erm* gene is present in these isolates.
Conclusion: This study has demonstrated that emergence of vancomycin resistance among *S. aureus* has increased and this underscores the need for strategies to prevent the spread of antimicrobial resistance.
Keywords: antimicrobial - vancomycin resistant *Staphylococcus aureusin* - multidrug resistant (MDR).

Antioxidant and α-Amylase Inhibitory Activities of Selected Medicinal Plants Grown in Jordan

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Background/Aim: This study aimed at evaluation of antioxidant activity and porcine pancreas α-amylase inhibitory activity *in vitro* for four medicinal plants grown in Jordan, which are used in folkloric medicine to reduce the complication of diabetes; these are: *Artemisia herba-alba, Olea europaea, Rosmarinus officinalis* and *Teucrium polium*.
Materials and methods: Aqueous extracts of aerial parts of four medicinal plants (*Artemisia herba-alba, Olea europaea, Rosmarinus officinalis and Teucrium polium*) grown in Jordan were investigated for the total phenol compounds and flavonoids contents, antioxidant activity and porcine pancreas α-amylase inhibitory activity *in vitro*.
Results: Aqueous extract of *Rosmarinus officinalis* was the highest in phenolic and flavonoids contents (107.6 mg GAE/100 g and 482 mg QE/100 g, respectively) among other three extracts and it shown to has the highest reducing power and DPPH inhibition activities (30.9 % and 57.3%, respectively at concentration of 25 ppm). In addition the aqueous extract of *Rosmarinus officinalis* showed a remarkable α-amylase inhibitory activity (70% at a concentration of 20µg/ml). *Teucrium polium* aqueous extract shown to contain the least amounts of phenolic and flavonoids compounds of (43.4 mg GAE/100 g and 206.0 mg QE/100g, respectively), and the lowest reducing power and DPPH inhibition activities (14.8 % and 38.3%, respectively at concentration of 25 ppm) and weak α-amylase inhibitory activity (5% at a concentration of 20 µg/ml).
Conclusion: All plants extracts at different concentrations showed a potential antioxidant activity better than the standard BHT on DPPH radical scavenging assay. Phenolic compounds shown to have strong and significant correlation with both reducing power activity (r =0.92, P<0.01) and alpha amylase inhibitory activity at 180 seconds (r =0.98, P<0.01). Flavonoids compounds found to have strong and significant correlation with DPPH inhibitory activity at 50 ppm (r =0.95, P<0.01) and alpha amylase activity at 180 seconds (r =0.83, P<0.01).

***Keywords*:** Artemisia herba-alba, Olea europaea, Rosmarinus officinalis, Teucrium polium, Antioxidant activity, α-amylase inhibitory activity**.**

Study of some chemical constituents and biological activity of two plants from Convolvulaceae family

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Objectives: This study aim to investigate the chemical constituents of the aerial parts of *Convolvulus arvensis* L. and the leaves of *Ipomoea carnea* Jacq. (Convolvulaceae family), in addition to evaluation of biological activity of their extracts.

Material and methods: the two plants were collected, dried and grinded separately to fine powder, after then it extracted with 80% aqueous methanol. The methanolic extract of both plants was divided into two portions, from the first one, the flavonoids were isolated and the alkaloids were isolated from the second portion using column preparative paper and thick layer chromatography.

Results: the phenolic constituents of the chloroform and ethyl acetate fractions of the aerials parts of *C. arvensis* L. resulted in isolation and identification of Scopoletin, Quercetin, Rutin (quercetin-3-*O*-rutinoside) and Scopolin and the alkaloidal constituents were identified as Hygrine, Cuscohygrine and Lophocerine. The phenolic compounds of the leaves of *I. carnea* were found to contain Scopoletin, Apigenin, Kaempferol and Kaempferol-3-*O*-neohesperidoside. While, the alkaloidal constituents are 2-Pyrrolidinone and Lophocerine. The LD_{50} of the i.p. administration of the defatted alcoholic extract of *C.arvensis* (aerial parts), alc. extrct of *I.carnea* (leaves) and the pure total alkaloidal mixture from *I.carnea* (leaves) was calculated as 2.5mg/kg ,7.5 mg/kg and 300 mg/kg body weight (respectively, in mice). Investigation of psychomimetic properties revealed that i.p. injection of the alcoholic extract of *C.arvensis* in doses up to 5 mg/kg did not show any change in the behavioral response of mice. I.P. injection of the alcoholic extract of the leaves of *I. carnea* caused depression of the mice and did not reach hypnotic or sedative stage, but there was a decrease in the spontaneous motility, loss of rigidity reflex and motor incapacitation. Intraperitoneal administration of pure total alkaloidal extract of the leaves of *I. carnea* produced an initial stimulatory phase,

Conclusion: the flavonoidal and alkaloidal constituents were isolated and identified in both plants in addition to determination of LD_{50} and psychomimetic properties of both alc. extr. of the two plants**.**

***Keywords*:** *Convolvulus arvensis, Ipomoea carnea,* phenolic, alkaloids, psychomimetic properties.

Current Knowledge, Attitude, and Patterns of Oral Contraceptives Utilization among Women in Jordan

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Objectives: The aim of this study was to assess knowledge, attitude, and patterns of oral contraceptives (OCs) utilization among women in Jordan. **Methods:** A face-to-face questionnaire inquiring demographic information and issues related to knowledge and use of OCs was completed by women (n=1571), who have had used OCs at least once in their lifetime. A model was created to assess the effects of knowledge, attitude and previous experience on the appropriateness of OCs utilization.
Results: Jordanian women exhibited positive attitudes towards OCs efficacy and safety. This positive attitude was approvingly associated with the appropriateness of use. However, only half of participating women reported that they knew how to use OCs. Most women received recommendations for OCs use from a physician. Moreover, physicians have the greatest influence on women's knowledge about OCs. Side effects were reported in 75.1% of participating women. Most reported side effects were headache, mood swings, irritability and weight gain. Interestingly, the occurrence of side effects was the main reason for OCs discontinuation. **Conclusion:** The study showed that women who have positive attitude toward OCs tend to utilize them more appropriately. However, there is still need for educational programs to enhance knowledge about OCs utilization in Jordan.

***Keywords*:** knowledge, attitude, oral contraceptives, women, Jordan

Biochemistry and Clinical Pathology

Development of Immunoassays of Catecholamines and Their Metabolites

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Objectives: Catecholamines are working as neurotransmitter and hormone. They are involved in so many diseases such as Parkinsonism, depression, cancer and dementia. Julius Axelrod established the metabolism and working mechanism of catecholamine and was awarded Nobel Prize in 1970. Sensitive immunoassays of catecholamine and their metabolite each were desired to study on the diagnoses of various related diseases. They are unstable and present in very low concentration in body fluids. Thus, we tried to develop the sensitive immunoassays. First, we had been succeeding in producing specific antibodies to epinephrine; norepinephrine and dopamine by using antigen coupled the hapten with albumin by Mannich reaction. The basic metabolite such as 3-methoxy-4-hydroxyphenyl-2-methylamino ethanol (metanephrine) was also produced the antibody to. According to advance in antibody production the hybridoma technique for the monoclonal antibody, developed by Cesar Milstein, awarded Nobel Prize in 1984, we as well applied a monoclonal antibody to neutral metabolite, 3-methoxy-4-hydroxyphenylglycol (MHPG), was measured to diagnosis of depression. The acidic metabolites, 3-methoxy-4-hydroxyphenylacetic acid (homovanillic acid, HVA) and D-3-methoxy-4-hydroxymandelic acid (VMA) respectively were useful to mass screening for neuroblastoma by using monoclonal antibodies, which methods were allowed as kits by FDA and Japanese government. The paper reviews these developments for the future use.

Methods: An antigen is important to producing the specific antibody. Amino-residue of each catecholamine protected with *N*-maleyl group was reacted with bovine serum albumin by Mannich reaction in the presence of formaldehyde. The *N*-maleyl group of the conjugate was moderately liberated to give rise to the antigen. The metabolites were unnecessary to protect with the maleyl group. Catecholamine or metabolite was displaced in the neighbor position of phenol with amino methyl-lysine residue of albumin. The antigen was injected with Freund's Complete Adjuvant to the rabbit or mouse. The conventional or monoclonal antibody was used to radioimmunoassay or enzyme immunoassay.

Results: Each immunoassay showed high specificity to discriminate not only the fine structure of the hapten, but also body ingredients. The antibody to natural D-epinephrine binds with D-form, but not L-form, norepinephrine, dopamine, nor the other metabolites. The kits of HVA and

VMA were useful to screen the urine from the infant with neuroblastoma and worldwide. Discussion: It was very difficult to make specific antibodies to three endogenous catecholamines and their metabolites of fine structure, before our success. The secret of specific antibody preparation was depended on the synthetic method of the conjugation, which is chemically moderate. The preparation of antibody took long time to increase the affinity. Thus, the methods to make the antibodies are established and repeatable for anyone. The mass screening of neuroblastoma with HVA and VMA was easily applied to new born infants. Positive infants were operated. It was, however, not yet defined to estimate good or bad prognosis of the cancer. In that case, I recommend the other biomarker, 2'-deoxycytidine, which was found increased in breast cancer, bladder cancer, hepatoma and acute leukemia by our joint project with National Cancer Institute, Cairo University for more than 30 years. The method of immunoassay of 2'-deoxycytidine was established by us for the future use.

Conclusion: We have established immunoassays of all the members of catecholamines and their metabolites for diagnosis and research.

***Keywords*:** Immunoassays, Catecholamines, Metabolites

Potential Neuroprotective and Therapeutic Effect of Resveratrol in Management of Alzheimer's disease Induced Experimentally

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Background/Aim: Alzheimer's disease (AD) is a chronic neurodegenerative disorder characterized by progressive dementia. Extracellular Amyloid beta plaque formation and intracellular tau hyperphosphorylation in the brain are hallmarks of AD pathology. Studies have indicated the protective effects of resveratrol, a major polyphenolic component of grapes and red wine against AD. However, the mechanisms underlying the neuroprotective effects of resveratrol have been poorly understood. Here we examined the effect of resveratrol on oxidative stress, inflammation, and acetylcholine esterase (AchE) to understand its mechanism of action using aluminum chloride ($AlCl_3$) induced AD rat model.

Materials and Methods: Rats were divided into six groups (ten rats each) as follows Gp (1): healthy group which received 1 ml oral saline daily. Gp (2): healthy rats treated with resveratrol orally for 90 days. Gp (3): Alzheimer's disease induced group, Aluminum chloride ($AlCl_3$) were orally administrated daily for 45 days. Gp (4): Rats treated with resveratrol for 45 days then administrated $AlCl_3$ to induce AD (protective effect of resveratrol) Gp (5): Alzheimer's disease induced group then treated with resveratrol in the same dose (therapeutic effect of resveratrol) Gp (6): Alzheimer's disease induced group treated with memantine.

Results: The AD rats displayed significantly increased serum amyloid beta (Aβ), tau protein, AchE, CRP, IL-6, TNF-α, TGF-β, and MDA levels and significantly decreased, serum catalase and SOD activities. Oral treatment of resveratrol for 45 days before or after the induction of AD resulted in a significant reversal in the levels of above studied markers. Additionally AD rats treated with AD drug, memantine had comparable effects to that of resveratrol. Furthermore, our biochemical results were greatly supported by the histopathological results of brain sections.

Conclusion: Modulating effects of resveratrol on Aβ, tau, oxidative stress and inflammatory markers underscore therapeutic and preventive potential of resveratrol against AD.

***Keywords*:** Resveratrol, Alzheimer's disease, inflammation, oxidative stress, tau protein, beta-amyloid.

Elevated BAFF and APRIL in Juvenile Idiopathic Arthritis Patients: Relation to Clinical Manifestations and Disease Activity

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Objective: To assess the level of B-cell activating factor belonging to the tumor necrosis factor family (BAFF) also known as B-lymphocyte stimulator (BLyS) and A proliferation-inducing ligand (APRIL) in the serum of Juvenile idiopathic arthritis (JIA) patients and to detect their relation to the clinical manifestations and disease activity in the different subtypes of the disease.

Methods: Seventy-four consecutively recruited JIA patients were clinically examined, the Juvenile arthritis disease activity score in 27 joints (JADAS-27) calculated and Childhood Health Assessment Questionnaire (CHAQ) used to measure the functional status. Thirty-four healthy matched children served as controls. Routine laboratory examinations were recorded and serum BAFF and April were determined.

Results: The JIA patients were 20 systemic-onset, 31 oligoarticular and 23 polyarticular. Serum BAFF and APRIL were elevated in JIA patients being higher in systemic onset and both significantly correlated. APRIL significantly correlated with both JADAS-27 and CHAQ scores while BAFF correlated only with JADAS-27. The APRIL serum levels were significantly associated with the presence of RF and ANA. The BAFF serum levels were significantly higher in oligoarticular onset JIA patients with uveitis compared to those without.

Conclusion: Our results suggest increased BAFF and APRIL serum levels in JIA patients denoting their possible role in the disease and calling for additional research to elucidate the intrinsic mechanisms explaining APRIL and BAFF over expression.

***Keywords*:** BAFF - APRIL - Juvenile idiopathic arthritis patients

Microsomal Epoxide Hydrolase Gene Polymorphism as a Risk Factor for Developing Insulin Resistance and Type 2 Diabetes Mellitus

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Objectives: The purpose of this study was to investigate the effects of mEPHX1 polymorphisms on risk of type 2 diabetes mellitus (T2DM) and insulin resistance (IR).

Subjects and Methods: One hundred and twelve patients with the diagnosis of T2DM and 150 control subjects were enrolled in the study. We investigated the two polymorphisms of the mEPHX1 gene (exon 3 Tyr113His and exon 4 His139Arg) using PCR-RFLP.

Results: Among diabetics, the frequencies obtained for the exon 3 mEPHX1 Tyr113 and His113 alleles were 46.9 and 53.1 %, respectively. In the control group, the frequencies were 70.7 and 29.3 %, respectively (P = 0.0001, OR = 2.73, 95 % CI = 1.9-3.91). The prevalence of mEPHX1 exon 3 Tyr/His and His/His was statistically significant (P = 0.004; 0.0001, respectively) when compared with the mEPHX1 exon 3 Tyr/Tyr homozygous carriers in both T2DM patients and in controls. We found that the His113 allele carriers had higher fasting insulin level, HOMA-IR, β cell activity, and lower insulin sensitivity compared to the wild type (P = 0.0001, 0.029, 0.0001, and 0.001, respectively). In contrast, there was no significant difference in exon 4 polymorphisms between patients and controls. However, our data revealed that the His139/His139 genotype carriers had higher fasting insulin level, and lower insulin sensitivity compared to Arg139 allele carriers (P = 0.02, and 0.001, respectively).

Conclusion: Our study has shown for the first time that minor Tyr113 allele of mEPHX1 polymorphism had a higher risk of T2DM and IR occurrence with lower insulin sensitivity, while mEPHX1 exon 4 polymorphism had no significant association with T2DM and IR

***Keywords*:** Microsomal Epoxide Hydrolase Gene Polymorphism - Risk Factor - Insulin Resistance - Type 2 Diabetes Mellitus

Polymorphism of Interferon Gamma Promoter and Receptor Associated with Tuberculosis Patients in Basra Province, South of Iraq

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Background/Aim: The battle with tuberculosis disease unfortunately did not end. Tuberculosis is back once again to become a serious threating to developing and developed countries. Familial clustering data, animal models, twin studies and complex segregation analysis and many others studies had been given adequate evidences in which that there is a genetic basis to accept the infection with tuberculosis. The IFN-γ gene is composed of four exons, with three introns, located on chromosome 12q24 spans approximately 5.4 kb. Also variations in the regulatory genomic regions such as promoter of IFN-γ have been related toTB. This study aimed to determine the correlation between the variation in the promoter region of IFN-γ gene and IFN-γ receptor with TB outcome among Tuberculosis Patients in Basra Province, South of Iraq.

Materials and Methods: Blood samples were taken from 74 patients. Each TB patients Confermed by direct sputum AFB, culture and. Gene Xpert MTB/RIF, also 44 individuals selected as control they had no previous history with infection by PTB. Genomic DNA extracted from patients and control .Two sets of primers for PCR amplification and sequencing of IFN-γ were used, IFN sense: 5′-ggaactccccctgggaatattct-3′ and IFN antisense 5′-agctgatcaggtccaaagga-3′ and INFG1 sense: 5'- ttcctcgaaatatactgcatca-3' plus 5'-tattgtaactcatgctgatgat -3'.The PCR product was DNA fragment was 863bp long for IFN-γ and 190bp for INFGR1. All samples were sequenced by GeneScript company (GeneScript Make Research Easy, China). Multiple alignment after processing was done for sequences with high quality. Hardly Weinberg Equilibrium using χ2 test (HWE) was used for calculated allelic haplotype frequency. IFN-γ level in sera of patients and healthy controls was estimated by using of Human IFN-γ ELISA kit.

Results: The results of genetic study were explained that there are nine main single nucleotide polymorphisms (SNPs) that found in IFN-γ promotor of patients but not control these SNPs that vary distributed frequencies among the patients. It appeared that (G→T) SNPs were the most common with a percentage of (31%) of all SNPs, followed by (G→C) SNPs and (G→T) SNPs with a percentage of (35.5%). Two alleles had already deposited in GenBank at accession number KT869022.1 and KU959596.1. The allelic polymorphism recorded in INGR1, the allele $(CA)_{12}$ seems to be present on infected and healthy individuals as same,

while the individuals which had $(CA)_{17}$ and $(CA)_{22}$ appeared to be the most susceptible to infection with (TB), but the $(CA)_{13}$,$(CA)_{14}$ and $(CA)_{19}$ repeats of *IFNGR1* were responsible for protective against tuberculosis. The mean IFN-g serum level was significantly depressed in Patients with active TB (26.92 pg./ ml) compared with healthy control (28.40 pg/ml), with standard deviation (5.29) and (10.73) respectively.

Conclusion: we concluded that there is a genetic defect in certain genes, the most suitable idea the explain re-outbreaks from time to time and recommended study the genetic factors that lead to increasing the susceptibility to tuberculosis disease in Iraqi community.

***Keywords*:** Interferon Gamma Polymorphism, Interferon Gamma promoter, Interferon Gamma Receptor, tuberculosis/genetics, single nucleotide polymorphism

Environmental &Parasitic Diseases

Real time Kinetics of Toxoplasma B1 Gene and Their Seroprevelance Markers Following Miltefosin

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Background: Toxoplasmosis is a parasitic zoonotic disease common in Egypt. It used to be asymptomatic before immunosuppression diseases such as Cancer and AIDS emerged, which aggravated toxoplasmosis infection. New anti-toxoplasmic therapy that lacked the side effects of the currently applied ones is highly in demand. There is also a need for accurate, reproducible and rapid diagnostic and follow-up techniques. The conventional serological methods are now substituted with advanced techniques like real time PCR for the investigation of potential activity of suspected new treatment regimens.

Objectives: Investigating the potential antitoxoplasmic effect of the antileishmanial compound Miltefosin on murine animal models infected subcutaneously and/or intraperitonealy with RH strain *Toxoplasma gondii* tachyzoites, using Quantitative Real time PCR in correlation to other serological markers as IgG, IgM and TNF alfa.

Methods: A group of 280 albino mice infected with 3000 *Toxoplasma gondii* tachyzoites were divided into two major groups according to route of infection: subcutaneous (group I) and intraperitoneal (group II), each was subdivided into five equal subgroups (n=28) according to type of treatment: Miltefosin (M), sulfamethoxazol (S), clindamycin (CLN) and a combination of Sulfamethozol and clindamycin (N). A group of 28 mice was set as control (C). Animals received treatment daily; Anti-tox IgG, IgM and TNF alfa were measured in daily blood samples. Tissue count of Toxoplasma B1 gene was measured in liver, heart and lung using real time quantitative (RT-PCR) daily for treatment follow-up.

Results: In-vitro exposure of tachyzoites to 0.6 mg miltefosin for 7 hours was enough to reduce their count to 50% (LD50). Treatment with (S) reduced toxoplasma B1 gene count by (72%) in heart, (66.5%) in liver, and (62.9%) in lung respectively starting from day (2) compared to controls. Treatment with (N) reduced toxoplasma B1 gene count by (0.1%) in heart, (16%) in liver, and (0.2%) in lung respectively starting from day (4) compared to controls. Treatment with miltefosin reduced the organism

count by (18%), (1%) and (1%) in heart, liver and lung respectively compared to controls. Significant reduction in IgG, IgM and TNF-α was reported for groups S and N compared to controls. Significant increase in IgG, IgM and TNF-α was reported for group M compared to controls ($p < 0.05$ for all statistics).

Conclusion: On the molecular level, Miltefosin and Clindamycin lacked anti-toxoplasmic effect in all tested organs till the death day however, in vitro effect on tachyzoites couldn't be ignored, while Sulfamethoxazole showed marked anti-toxoplasmic effect. Miltefosin has positive effect on innate arm of immunity which is omitted by Sulfamethoxazole.

***Keywords*:** Toxoplasmosis, Miltefosin, Sulfamethoxazol, TNF, IgG, IgM, clindamycin,

Behavioral Changes Caused by Toxoplasmosis

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Background: The protozoan, *Toxoplasma gondii,* infects humans, animals, birds, and rodents, but the primary host is the felid family. Humans can get infected by handling cat litter or soil contaminated with cat feces or by consumption of raw or undercooked meat containing tissue cysts of *Toxoplasma*. Toxoplasmosis could increase the risk of having a car accident two to three times because the cysts found in the nerves and muscle tissues could reduce the ability of people to concentrate and impair the psychomotor performance of human subjects. Fortunately, the risk decreased the longer the person had been infected. Such infections lead to changes in personality profile depending on the gender of the infected person. Male carriers have lower IQs, a tendency to achieve a lower level of education and have shorter attention spans. A greater probability of breaking rules and taking risks; furthermore, they are more independent, anti-social, suspicious, jealous, and morose. Studies showed that these men are considered less attractive to women. Women carriers are suggested to be more outgoing, friendly, promiscuous, and intelligent and are deemed more attractive to men compared with non-infected controls. Moreover, the greater susceptibility to schizophrenia and manic depression were expected in all infected persons. The increase of dopamine in the brain represents the missing link between latent toxoplasmosis and schizophrenia and the infection damages astrocytes in the brain, such damage is also seen in schizophrenia. Some medications that used to treat shizophrenia as Haloperidol stop the growth of *Toxoplasma* in cell culture.
Conclusion: This work explains how could a parasite transmitted by a cat increases car accidents and changes personality profile leading to schizophrenia. Moreover, cultural changes could occur in populations where this parasite is very common, owing to mass personality modification regarding cultural aspects that relate to ego, work, rules, money, and material possessions**.**

Zoonotic Health Hazards Concerning Brucellosis in Libya Animals and Human in Contact

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Background/Aim: Brucellosis is an infectious disease caused by the bacteria of the genus *Brucella*. These bacteria are primarily passed among animals, and they cause disease in many different vertebrates. Various *Brucella* species affect sheep, goats, cattle, camels, dogs, and several other animals. It causes abortion in females and inflammation of the testes (orchitis) in males. Humans become infected by coming in contact with animals or animal products that are contaminated with these bacteria. In humans brucellosis can cause a range of symptoms that are similar to the flu and may include fever, sweats, headaches, back pains, and physical weakness. Severe infections of the central nervous systems or lining of the heart may occur. Brucellosis can also cause long-lasting or chronic symptoms that include recurrent fevers, joint pain, and fatigue. **In Libya,** there is a program to eradicate brucellosis in cattle and camels from 1997 to 2007. The present study aim to Seropositivity of brucellosis in camels and cows after program to eradicate brucellosis in cattle and camels.

Materials and methods: In this work (5504 blood samples from camel and 2124 blood samples from cattle) were randomly collected from the most region of Libya tested by Rose Bengal and confirmed by STA and Enzyme Linked Immunosorbent Assay (Elisa).

Results: The study results were that the rate of infection in camels (0.5%) while in cattle (0.09%) and therefore that the survey and eradication program of brucellosis in camels and cattle in Libya from 1997 to 2007 gave excellent results.

Conclusion: Continue collection of random samples will to maintain the low seropositivity rates which were recorded and need to test new animals before introducing them to their herds.

***Keywords*:** *Brucella abortus*, *Brucella melitensis*, Rose Bengal antigen, ELISA, SAT

Study of Zoonotic Enteric Viral Infections Circulating among Egyptian Children

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Background/Aim: Enteric viruses are considered as the most important causes of gastroenteritis among young children. The most important causative agents of viral gastroenteritis are: group A rotaviruses (RV), noroviruses (NoV), adenoviruses (AdV) types 40, 41 (group F), and astroviruses (AstV). The aim of this work is to study the epidemiological profile of enteric viruses circulating among Egyptian children suffering from gastroenteritis.

Material and Methods: Fifty stool samples were collected from children suffering from gastroenteritis, aged from 3 months to 5 years old. Environmental samples were collected during the same period, from September 2015 to February 2016. Two of the main enteric viruses (NoV and AdV) were detected by PCR in collected samples, using specific primers targeted to the capsid and polymerase coding genes.

Results: At least one virus was detected in 86% of fecal samples. AdVs and NoVs were detected in 80% *(N=40)* and 20% *(N=10)* of fecal samples, respectively. The screening of environmental samples showed that AdVs and NoVs were detected in 22% *(N=11)* and 2% *(N=1)* of groundwater samples, respectively. The phylogenetic analysis of the NoVs isolates showed that all detected clinical strains (100%) belonged to genogroup II (GGII), while the environmental NoV detected strain belonged to genogroup IV (GIV). Among the AdVs clinical positive isolates, 92.5% (*N=37*) clustered with *Mastadenovirus* group C, while 7.5% (*N=3*) clustered with *Mastadenovirus* group F. On the other side, all detected AdVs environmental isolates belonged to *Mastadenovirus* group C. The analysis of both clinical and environmental samples revealed the circulation of some zoonotic strains.

Conclusion: This work helped to study the molecular epidemiology of enteric virus's strains circulating in Egypt. Moreover, this study gave an image of zoonotic enteric viral infections and their transmission through the environment. The ability of these viruses to be transmitted to humans through the environment remains a problem to be assessed.

Keywords**:** *Enteric viruses, gastroenteritis, noroviruses, adenoviruses, zoonotic infections.*

IL-17 Induced the Recruitment and Functional Activity of Granulocytes Isolated from Patients Coinfected with Schistosomiasis and Hepatitis C Virus

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Objective: The aim of this study was to investigate the role of Th17 cytokines on granulocytes recruitment and functional activity in *Schistosoma mansoni*/hepatitis C virus (HCV) co-infected patients.

Patients and Methods: Granulocytes were isolated from whole blood of *Schistosoma*/HCV co-infected patients and stimulated overnight with *Schistosoma* soluble egg antigen (SEA) in the presence of IL-17, IL-22, or both cytokines. In parallel, granuloma was induced *in vitro* using SEA-coated polyacrylamide beads in the presence of the isolated granulocytes as well as IL-17 and/or IL-22 then the sizes of granulomas were measured after one week. Supernatants levels of tumor necrosis factor-alpha (TNF-α hydrogen peroxide (H_2O_2) and nitric oxide (NO) were measured using ELISA.

Results: Granulocytes activated overnight with SEA in the presence of IL-17 produced significant ($P< 0.0001$) levels of TNF-α and H_2O_2. Presence of IL-17 increased the granuloma index significantly ($P = 0.0017$) after one week of granuloma induction. Additionally, TNF- α and H_2O_2 levels in the granuloma supernatant were increased significantly ($P = 0.0009$ and $P = 0.0074$ respectively) as compared to that of *Schistosoma* alone infected granulocytes. However, IL-22 alone or when combined with IL-17 decreased significantly TNF-α ($P = 0.0112$ and $P = 0.0007$ respectively), NO ($P < 0.0001$ and $P = 0.002$ respectively) and H_2O_2 ($P = 0.002$ and $P = 0.053$ respectively) levels in the granuloma supernatant.

Conclusion: IL-17 induced the recruitment and functional activity of granulocytes isolated from patients coinfected with schistosomiasis and hepatitis C virus.

***Keywords*:** IL-17, granulocytes, Schistosomiasis, HCV, coinfection.

Ophthalmology (I)

Parasitic Diseases Affecting the Heart in Childhood

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Objective: Several parasitic diseases occasionally affect the heart, causing myocarditis, cardiomyopathy and pericarditis. Heart defects usually develop while a baby is still in the womb. About a month after conception, the heart begins to develop. Pediatric myocarditis is inflammation of the heart muscle in an infant or young child. Myocarditis is rare in young children. It is slightly more common in older children and adults. It tends to be more severe in newborns and young infants than in children over age 2. Symptoms may be mild at first and hard to detect. However, in newborns and infants, symptoms may sometimes appear suddenly.

Methods: Pediatric myocarditis can be hard to diagnose because the signs and symptoms often mimic those of other heart and lung diseases, or a bad case of the flu. A rapid heartbeat or abnormal heart sounds with a stethoscope. A physical examination may detect fluid in the lungs and swelling in the legs in older children. There may be signs of infection, including fever and rashes.

Results: Newborns have the highest risk for serious disease and complications (including death). In rare cases, damage to the heart muscle is so severe that a heart transplant is needed. Cardiomyopathies are diseases of the myocardium associated with cardiac dysfunction. Parasite damage to the heart most often affects either the aortic valve or the mitral valve. Damage to the heart valves causes skipped beats, irregular beats, angina, shortness of breath. chest, arm, upper back and neck pain. A chest x-ray showed an enlargement of the heart.

Conclusion: The protozoan parasite, Entamoeba histolytica rarely causes a pericarditis while Toxoplasma gondii may cause myocarditis, usually in immunocompromised hosts.

***Keywords*:** Parasitic diseases, myocarditis, pericarditis, pancarditis, heart disease, heart failure:

Health Hazards of Electromagnetic Fields as a Pollutant Agent on Cornea and Retina of Rats' Eye

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Background/Aim: Electromagnetic fields (EMF) is a big issue involved in radio waves, cell and cordless phones, microwave ovens, many household appliances and overhead transmission lines. This work is mainly concerned with the effects of EMF (50Hz) on corneal DNA and retinal rhodopsin.
Materials and Methods: Five groups of Swiss albino- rats A, B, C, D and E of 25 males each. Rats of groups A and B were exposed to EMF 1.5 Kv/m and 5 Kv/ m (50Hz) respectively for one month. Rats of group C were exposed to 5 Kv/m (50 Hz) EMF and left for 45 days for the late study. Rats of groups D and E were used as control for direct and delayed studies respectively. At the end of exposure to EMF; DNA was isolated from the desiccated cornea and purified. Rhodopsin was extracted from the rats' retina according to Dowling and Grignolo et.al. Spectrophotometer (UV-Visible), SD Spolyacrylamide gel electrophoresis, standard markers, column chromatography were used to estimate absorption spectra, total protein, molecular weights and electrophoretic mobility for the corneal DNA and the retinal rhodopsin samples of the studied groups.
Results: After EMF exposure the results showed abnormality in the rats' behavior accompanied by a decrease in DNA concentration and characteristic absorption band at 260nm.Also there was a decrease in the protein content, molecular weights and fluctuations in the electrophoretic mobility of retinal rhodopsin for the all studied groups.
Conclusion: In conclusion the damaging process to the eye tissues resulting from exposure to EMF is irreversible and we must protect our eyes from such fields through supplementation of antioxidants and wearing suitable eye glasses.

***Keywords*:** Electromagnetic fields, Corneal DNA, Retinal Rhodopsin, Eye.

Multivariate Analysis of Microbial Keratitis in Egypt

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Background/Aim: Microbial keratitis is a potentially sight threatening disorder and the leading cause of monocular blindness worldwide. This study analyses the prevalence, microbiology, clinical risk factors and treatment of infectious microbial keratitis.

Patients & Methods: A prospective review of all cases presenting with keratitis at Cornea Outpatient department of Research Institute of Ophthalmology from September 2008, to September 2012, were included in this study. Full ophthalmic examination with slit lamp bio microscopy was performed and corneal scrapings were sent for microbiological diagnosis.

Results: Of the 380 patients who attended the outpatient department 213 (56.05%) patients were confirmed to be positive for microbial keratitis whereas 167(43.95%) showed no growth.123 (57.75%) of positive cases were males with age ranged from (4 to 88 years) and 90 (42.25%) of cases were females with age ranged from (2 to 87 years).The most common predisposing cause of ulceration was trauma 45 (21.23%) followed by contact lens wearing 40 (18.78%). Pure bacterial cultures were obtained from 122 (57.28%) eyes, whereas pure fungal cultures were obtained from 48 (22.53%) eyes. 43 (20.19%) eyes showed mixed growth.

Conclusion: This limited study has revealed and reinforced that suppurative corneal ulcers are caused by both bacterial and fungal agents. The most commonly isolated bacteria were *Staph epidermidis* 40 (18.78%). The most common predisposing cause of infectious microbial keratitis was corneal trauma 45 (21.7%). Early stage of diagnosis and formulation of an uncompromising management protocol can prevent profound visual morbidity Gentamicin (10 µg), Amikacin (30 µg), Gatafloxacin (5 µg), Ceftazidime (dj 30 µg), Erythromycin (10 µg) Chloramphenicol (30 µg) and Vancomycin (30µg) were found to be better efficacious drugs against most of the bacterial pathogens noted in in-vitro susceptibility testing.

***Keywords*:** Suppurative corneal ulcer, Microbial keratitis Infective keratitis, Etiological agent.

Ophthalmology (II)

Treatment of the Branch Retinal Vein Occlusion with Nd: Yag Laser Thrombolysis. An Experimental Study

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Objective: The aim of the research is to evaluate the histopathological changes of the retina after Nd: YAG thrombolysis in branch retinal vein occlusion.

Material and Method: Four rabbits were considered as a control (n=8 eyes), occlusion of the branch retinal veins were performed by dye enhanced photothrombosis in right eyes of 12 rabbits to induce thrombi in the retinal veins. Rose bengal solution (50 mg/kg) was injected in an ear vein immediately before the laser application. Argon green laser application was performed with a power of 15-30 mW, a spot size of 100 μm, and duration of 0.3 seconds. After one week, transluminal Nd: YAG laser thrombolysis was done to the site of occluded veins. A Goldman three mirror lens was used to focus the Nd: YAG laser onto the venous thrombus. The laser energy level commenced at 0.5 mJ and was increased to 1 mJ (about 12 pulses) until the thrombus was partially or completely shattered. After two weeks rabbits were scarified, the retinae were isolated for histopathological examination.

Results: slit lamp biomicroscopic funds examination showed reperfused veins, and occlusion of viens after argon laser application followed by complete recovery of the retina after 2 weeks. The histopathological examination showed improvment of photoreceptor retinal layers after one week and complete recovery occurs after two weeks of Nd: YAG laser thrombolysis.

Conclusion: Transluminal Nd: YAG laser thrombolysis represented a novel therapeutic modality in treatment of retinal vein occlusion.

***Keywords*:** Branch retinal vein occlusion (BRVO), Nd: YAG laser, thrombolysis

Effect of Diclofenac on the Intraocular Pressure Lowering Action of Latanoprost in Albino Rabbits with Induced Ocular Hypertension

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Background: Glaucoma is a neurodegenerative disease characterized by visual field loss, cupping of the optic nerve head and irreversible loss of retinal ganglion cells and elevated IOP is considered a major risk factor . The $PGF_{2\alpha}$ analog, latanoprost is a highly effective ocular hypotensive drug used widely to treat patients with primary open angle glaucoma (POAG).
Aim: to test the effect of the COX inhibitor diclofenac on the intraocular pressure (IOP)-lowering action of the prostaglandin analog, latanoprost.
Methods: Twelve albino rabbits were divided into four groups with six eyes in each group. Group I served as control. Ocular hypertension was induced in groups II, III and IV by a single subconjunctival injection of betamethasone (0.5 ml, 7 mg/ml) on day 1 and animals were followed up for 6 days. Group II was left untreated. In group IV, diclofenac was applied topically 5 times on day 5 and 3 times on day 6 before latanoprost eye drops. On day 6, in groups III and IV, latanoprost was applied topically once to rabbit eyes and the IOP was measured before application and 15min, 30min, 1h, 2h, 3h and 4h after latanoprost application. Photopic electroretinogram (ERG) recordings were performed for all groups before the experiment and on day 6 post betamethasone injection measuring b-wave amplitude, full-field photopic negative response (PhNR) amplitude and PhNR/b-wave ratio.
Results: The IOP was significantly elevated in groups II, III and IV reaching 28.8±3.38, 26.28±3.34 and 29.93±2.04 mmHg ,respectively compared to control (16.55±2.86 mmHg) on the 6^{th} day. In group III, latanoprost application produced significant reduction of IOP reaching 15.07±2.96 mmHg four hours after latanoprost with improvement of ERG parameters. In group IV, pretreatment with diclofenac antagonized the IOP-lowering effect of latanoprost and prevented the improvement of ERG parameters.
Conclusion: Diclofenac can antagonize the IOP-lowering effect of latanoprost. Therefore, careful follow-up of IOP is required when these two drugs are co- administered.

***Keywords*:** latanoprost, diclofenac, glaucoma, rabbits, electrophysiology.

Contact Lens Associated Bacterial Keratitis (Clmk) Review Article

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Background: Bacterial keratitis (corneal ulcer) is an umbrella term for an inflammatory or infectious event. A corneal ulcer is caused by a break in the corneal epithelium with or without stromal involvement and can lead to the entrance of a micro-organism through the break. The use of contact lenses (CLs) has been widely associated with corneal alterations ranging in symptomatology and severity. Bacterial keratitis is most commonly caused by aggressive gram-negative *Pseudomonas spp*.
Conclusions: CLMK complications can range from self-limiting to potentially sight-threatening. The presence of CL alters the natural environment increasing the risk of infection. Risk factor analysis indicates that disease load is reduced by 60–70% by avoidance of overnight lens use and specific attention to storage case hygiene and replacement, not swimming in CLs, adequate lens disinfection, and avoidance of tap water for cleaning and soaking lenses. Daily disposable lenses are associated with less severe disease. Egypt being a developed country, incorrect usages and unhygienic maintenance of CLs is a leading cause of such eye infections among CL wearers, especially in urban areas, with female preponderance due to cosmetic care. In contrast, when trauma is the predisposing factor for microbial keratitis, a male preponderance is noted; this is due to the more outdoor activities for males than females.

***Keywords*:** Contact Lens, Bacterial Keratitis, corneal ulcer, *Pseudomonas spp*.

Pathology

Ameliorative Effect of Aqueous Extract of *Brassica oleracea* in Rotenone Induced Oxidative Stress Model of Parkinson's Disease

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Background/Aim: Parkinson's disease is a neurodegenerative disorder characterized by motor impairment, cognitivedecline and psychiatric symptoms. The present study aims to evaluate therapeutic effect of aqueous extract of *Brassica oleracea* against rotenone induced behavioral alterations, biochemical, histopathological and immunohistochemical studies in a rat model of Parkinson's disease (PD).

Material and Methods: Male Sprague-Dawley rats were divided into four groups, group 1 control, group 2 treated with rotenone injection (2 mg/kg) for 4 weeks, group 3 and 4 treated with *Brassica oleracea* var. *botrytis* extract **(**300 and 500 mg/kg) after rotenone injection (2 mg/kg) for 4 weeks.

Results: The administration of rotenone produced significantly decreased dopamine, superoxide dismutase (SOD), catalase (CAT), glutathione (GSH), acetylcholine esterase (AChE,) glutathione peroxidase (GPx), glutathione-S-transferase (GST) contents, increased malondialdehyde (MDA) level and locomotors activity; however, in the group treated with aqueous extract of *Brassica oleracea* at doase (300 & 500 mg/kg b.w) for 4 weeks significantly increased the antioxidant status enzymes and also decreased the level of MDA, and AChE activity when compared with rotenone treated group, in a dose-dependent manner. Histopathological examination of different brain regions stained with hematoxylin-eosin revealed several neurodegenerative changes. These changes include vacuoletions, eosinophilic cells, pyknotic nuclei, and gliosis; this damage significantly attenuated and reduced the neuronal degeneration after treatment with of aqueous extract of *Brassica oleracea*. In addition, immunohistochemical studies demonstrated that of aqueous extract of *Brassica oleracea*. groups had significant increased thyrosine hydroxylase and reduced in caspase-3, cyclooxygenase-2 and inducible nitric oxide synthase.

Conclusion: *Brassica oleracea* extract could ameliorate brain oxidative stress induced by rotenone via upregulating the antioxidant defense mechanism and by attenuating lipid peroxidation. *Brassica oleracea* extract thus may be used as potential therapeutic agent in preventing neurodegenerative diseases.

***Keywords*:** Ameliorative effect - *Brassica oleracea* - Rotenone - Oxidative Stress - Parkinson's disease

Potential Targets for Therapy in Triple Negative Breast Cancer

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Background/Aim: Triple Negative Breast Cancer (TNBC) are aggressive tumours with the poorest outcomes and prognosis; accounting for 15–20% of all breast cancer cases. They lack ER, PR, HER2 overexpression and also lack molecular targets used in targeted therapy. This leaves them with limited treatment options. Understanding the molecular basis of triple negative breast cancer is crucial for characterizing this entity and for identifying potential targets for effective new drug development. The key objective of this study is the identification of potential targets for therapy in TNBC cases and description of their morphologic profile in terms of histopathology type, histopathologic grade, lymph node status, tumour size, tumour stage and patient's age.

Material and Methods: Paraffin blocks of a total of 150 cases were recruited. Paraffin sections were stained with haematoxylin and eosin and immunohistochemically using primary antibodies for protein products of genes of each of Androgen Receptor (AR), PARP1, mTOR, CHEK1 and the proliferation marker Ki67. Appropriate Streptavidin Biotin detection system was applied.

Results: Immunohistochemical study showed that PARP1 was expressed in 74%, AR in 66.66%, CHk1 in 70%, mTOR in 6%, and Ki67 in 66.66% of TNBC cases. Invasive duct carcinoma was found in 62%, Invasive lobular carcinoma in 20%, Medullary carcinoma in 12%, Tubular Carcinoma in 3.33% and Mucinous carcinoma in 6.66% of TNBC cases. Tumour grades varied between grade II and grade III. The clinical stage II was encountered in 50% of cases, stage III in 22% of cases and stage I in 8% of cases.

Conclusion: In TNBC cases, PARP1, AR and Chek1 show promise as potential targets for therapy in this early stage study but their clinical performance still needs to be definitively proven in larger number of patients.

***Keywords*:** Potential Targets -Therapy - Triple Negative - Breast Cancer

Immunohistochemical Expression of Alpha-Methylacyl Coenzyme-A Racemase (AMACR) In Prostatic Carcinoma: Correlation with Image Morphometric Parameters

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Background/Aim: Prostate cancer is the second leading cause of death in men. Although, prostatic specific antigen (PSA) is the most used biomarker for monitoring prostate cancer, it has poor specificity. This study aimed to evaluate the diagnostic utility of Alpha-methylacyl coenzyme-A racemase (AMACR) as predictive marker for prostate carcinoma. The expression of AMACR will be correlated with nuclear and glandular Morphometric parameters aiming to enhance the possibility of finding sensitive immune marker for diagnosing prostatic carcinoma.

Methodology: Prostatic lesions including (30) benign prostatic hyperplasia (25) PIN and (50) prostatic carcinoma, were included in this study. Immunohistochemical staining for AMACR was done in formalin -fixed paraffin-embedded tissue sections. Nuclear and glandular Morphometric parameters for all cases were evaluated using image analysis system.

Results: Using semi-quantitative scoring, AMACR expression was found in 94 % of cases of prostatic carcinoma, and 78 % of cases of high grade PIN and all cases of benign hyperplasia and low grade PIN were negative. AMACR expression was significantly correlated with nuclear density (hyperchromasia) and glandular- stromal ratio in cases of prostatic carcinoma.

Conclusion: Expression of AMACR plays an important role in the diagnosis of prostatic lesions, and may be used as a potentially important prostatic tumor marker. A combination of AMACR and morphometry is of great value in increasing the diagnostic accuracy of prostatic carcinoma and may have value for resolving suspicious cases.

***Keywords*:** Prostatic Carcinoma, Immunohistochemistry, AMACR, Morphometry

Protective Effects of *Androctonus amoreuxi* Scorpion Extract and Sitagliptin Treatment on the Liver Injury of Streptozotocin-Diabetic Rats

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Background/Aim: Oxidative stress is involved in both the pathogenesis and complications of diabetes. *Androctonus amoreuxi* scorpion tea was previously reported to modulate physiological responses in streptozotocin-induced diabetic rats. This study attempts to evaluate liver protective role of scorpion tea and sitagliptin on complication of diabetes in diabetic rats.
Material & Methods: Thirty six rats were divided six groups (n=6). Diabetes was induced in male albino rat by intraperitoneal injection of 65 mg/kg STZ. Three days later, the animals randomly divided to 3 groups: diabetic group, diabetic + S. Tea (300 mg/kg) and diabetic + ST (10 mg/kg) the fourth and fifth group received S. tea or ST daily for 30 days, besides control group received intraperitoneal injection of saline. Liver histological and biochemical markers were monitored at the end of experimental period.
Results: Results of our study revealed that treatment with scorpion tea or sitagliptin produced significant liver protection manifested by a significant decrease in serum levels of alanine aminotransferase (ALT), alkaline phosphatase (ALP), gamma-glutamyltransferase (GGT) and lactate dehydrogenase (LDH). This study also demonstrates reduced liver injuries by significant reduction in total oxidative capacity in streptozotocin-induced diabetic rats where it restoring the total antioxidant capacity levels. Histopathologically, livers of diabetic rats showed severe liver injury. These changes were attenuated in diabetic animals treated with scorpion tea or sitagliptin.
Conclusion: Results of this study suggest that *A. amoreuxi* scorpion extract and sitagliptin have protective effects against hepatic complications in diabetic rats.

***Keywords*:** *Androctonus Amoreuxi,* sitagliptin, rats

Cordia dichotoma Fruits Improves Lipid Metabolism in Rats Fed on Atherogenic Diet: Metabolic Study

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Background/Aim: *Cordia dichotoma*. Forst. (*Boraginaceae*), known as sebestan plum, soap berry, fragrant manjack, it has many common names as Indian cherry, lasura, Sekendal, Kendal Nunang Paw, Paw man and mokhate in Egypt. This study aimed to investigate the hypolipidemic mechanism of aqueous extract of *Cordia dichotoma* fruits.

Materials & Methods: Metabolic experiment set out using two models of rats; healthy and atherogenic model fed on standard atherogenic diet respectively. Extract tested with two doses; 0.5 and 1.0 g/ kg body weight for four weeks.

Results: Administration atherogenic diet caused significant augment on total cholesterol (TC) and triglycerides (TG) intake, lipid profile; TC, TG, low density lipoprotein cholesterol (LDL-C), very low density lipoprotein cholesterol (VLDL-C), liver TC and TG in comparison with those fed on standard diet. On the other hand, high density lipoprotein cholesterol (HDL-C) and antioxidant enzymes; glutathione-S-transferase (GST), glutathione peroxidase (GPx), glutathione reductase (GR), catalase (CAT) and superoxide dismutase (SOD) were significantly reduced when rats fed on atherogenic diet. Forces feeding C. dichotoma extract reduced total body weight gain and total feed intake and magnified fresh and dry weight of fecal excretion compared with atherogenic control. *C. dichotoma* minimized fat, TC and TG intake significantly and maximized those on fecal excretion in comparison with atherogenic control values. *C. dichotoma* extract normalized lipid profile of serum and liver with respect of atherogenic control. Liver status also enhanced significantly represented by increasing antioxidant enzymes; GST, GPx, GR, CAT and SOD and reduction oxidative stress parameters; H_2O_2 and MDA, compared to atherogenic control.

Conclusion: Hypolipidemic mechanism of *C. dichotoma* extract could be lower ability of animal to ingest and absorb fat, TC and TG and get rid of them in fecal excretion.

***Keywords*:** *Cordia dichotoma* fruits, hyperlipidemia, mechanism, antioxidants.

Microbiology

Antibacterial Properties of Larval Secretions of the Blowfly, *Lucilia sericata* (Diptera: Calliphoridae)

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Background/Aim: Secretions aseptically collected from larvae or maggots of the greenbottle fly *Lucilia sericata* (Meigen) (Diptera: Calliphoridae) exhibit antimicrobial activity along with other activities beneficial for wound healing. With the rise of multidrug-resistant bacteria, were examined .new approaches to identifying the active compounds responsible for the antimicrobial activity within this treatment are imperative.

Materials and methods: Collecting the flies and breeding the larvae ,The adult forms were kept in 45×45×45 cm Gerberg cages at 24 ◦C, 70% relative humidity and12 h light photoperiod. The flies were fed on liver or meat or beef. Extracting larval excretions and secretions (ES) The ES were prepared following the methodology described by El-Ebiarie and Taha (2012).

Results: include five different pathogenic bacterial strains. Three of them are gram positive bacteria, namely: *Staphylococcus aureus*, *streptococcus sp*, and *proteus sp* and two of them are gram negative bacteria, namely: *E. coli* and *Salmonella typhi* considering the activity against organisms typically associated with clinical infection, may be a source of novel antibiotic-like compounds that may be used for infection control Therefore, the aim of this study was to use a novel approach to investigate the output of secreted proteins from the maggots under conditions mimicking clinical treatments.

Conclusions: Results revealed that the secretions aseptically markedly inhibit the growth of both gram-positive and gram-negative bacteria and could be considered a potential source for developing new antibacterial drugs.

***Keywords*:** *Lucilia sericata*, antibacterial, larval therapy, methicillin-resistant, *Staphylococcus aureus*, *streptococcus sp,* secretions.

Biocidal Efficacy Study of Non-thermal Plasma on Microbial Planktonic and Biofilm Forms

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Background: Atmospheric pressure non-thermal plasma (APNTP) is a promising, relatively novel method for destroying microorganisms either in planktonic or biofilm form, alternative to "conventional" methods which have numerous drawbacks.

Subjects and Methods: This study was performed on *S. aureus*, *CoNS*, *P. aeruginosa* and *E. coli* isolates from patients with indwelling medical devices associated infections in different intensive care units (ICUs), Zagazig University Hospitals. Detection of biofilm forming ability of these isolates was done by tube method (TM). Planktonic and biofilm counterpart of selected biofilm forming isolates were exposed to APNTP for different durations to assess the biocidal efficacy of plasma on both microbial forms by colony forming unit (CFU) count and /or XTT assay. APNTP morphological changes in *E. coli* and *S. aureus* were assessed by Transmission electron microscopic (TEM) imaging.

Results: APNTP treatment of *S. aureus*, *E. coli* suspensions caused progressive reduction in surviving bacterial count and metabolic activity with increasing treatment duration and at 180 seconds of exposure complete sterilization achieved. Similar but more prolonged effect was detected on *CoNS* and *P. aeruginosa* suspensions. Its exposure for 240 seconds was needed for its complete sterilization. There was no difference between bacterial percentage reduction calculated by CFU count and XTT assay except in *P. aeruginosa* suspension for 60 seconds. No observed difference between APNTP effect on planktonic Gram positive (GP) and Gram negative (GN) bacteria. On the other hand, GN bacterial biofilm was more resistant to APNTP than GP bacterial biofilm.TEM showed that in both *S. aureus* and *E. coli* there were significant morphological changes after exposure to plasma.

Conclusion: The efficacy of APNTP was proved for in-vitro decontamination of planktonic and biofilm forms of *S. aureus*, *CoNS*, *P. aeruginosa* and *E. coli* that are responsible for many HCAIs.

***Keywords*:** Non-thermal plasma, planktonic, biofilm

Metabolites from the Fungal Endophyte *Aspergillus austroafricanus* in Axenic Culture and in Fungal-Bacterial Mixed Cultures

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Background: Endophytic fungi are a fascinating and prolific source of biopharmaceuticals.

Material and Methods: The endophytic fungus *Aspergillus austroafricanus* was isolated from fresh healthy leaves of the aquatic water plant *Eichhornia crassipes* and fermented axenically on solid rice medium as well as in mixed cultures with *Bacillus subtilis* or with *Streptomyces lividans*.

Results and discussion: Chromatographic analysis of the ethyl acetate extract of axenically grown *A. austroafricanus* afforded two new compounds, including the xanthone dimer austradixanthone (**1**), and the bisabolane derivative (+)-austrosene (**2**), along with five known compounds (**3 - 7**). Austradixanthone (**1**) represents the first example of a highly oxygenated heterodimeric xanthone derivative. When *A. austroafricanus* was grown in mixed cultures with either *B. subtilis* 168 trpC2 or with *S. lividans*, the accumulation of several diphenyl ether derivatives (**9** – **11**) including the new compound austramide **(8)** was induced up to 29 fold compared to axenic cultures of the fungus. The structures of the new compounds were unambiguously elucidated using extensive 1D- and 2D-NMR spectroscopy, high-resolution mass spectrometry as well as chemical derivatization.

Biological importance: Compound **7** exhibited moderate cytotoxic activity against the murine lymphoma L5178Y cell line with an EC_{50} value of 12.6 μM. In addition, compounds **9** and **10** which were enhanced in mixed fungal/bacterial cultures proved to be active against *Staphylococcus aureus* (ATCC 700699) with minimal inhibitory concentrations (MICs) of 25 µM each (6.6 μg/mL) whereas compound **11** revealed moderate antibacterial

activity against *B. subtilis* 168 trpC2 with a minimal inhibitory concentration (MIC) value of 34.8 μM (8 μg/mL).
Conclusion: Endophytic fungi compromise a promising tool in the field of drug discovery from microorganisms. Axenic culture technique produced a moderate cytotoxic drug (Compound **7**), while microbial co-cultivation approach enhance accumulation of the antibacterial drugs (compounds **9-11)**.

***Keywords*:** *Aspergillus austroafricanus*; endophytic fungi; *Eichhornia crassipes*; co-culture; xanthones; bisabolane derivative; diphenyl ether; cytotoxic activity; antibacterial activity.

Antibiotics in Viridans Streptococci Isolated from Odontogenic Infections in Tanta University Dental Clinic, Egypt

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Aim of the work: To investigate incidence and mechanisms of antibiotic resistance among facultative anaerobic viridans streptococci causing odontogenic diseases.

Materials and methods: A total of 166 streptococci isolates were recovered from oral clinical samples. All isolates were identified based on their colonial morphology on Mitis-Salivarius agar and API 20 Strep identification system. The susceptibility of the recovered isolates to 10 antibiotics was determined using agar dilution method. Resistance mechanisms to tested antibiotics were investigated via testing beta-lacamase production, detecting alterations in PBPs, phenotypic detection of macrolides and lincosamides resistance using D-test and PCR detection of genes responsible of determining macrolides and lincosamides resistance.

Results: Six species were identified namely *S. mutans, S. mitis, S. salivarius, S. oralis, S. sanguinis, and S. anginosus*. The most commonly isolated species was *S. mutans* (~23 %) while the least isolated one was *S. sanguinis* (12%). Out of 166 recovered isolates 58 isolates were resistant to 2 - 9 of the tested antibiotics. The highest incidence of resistance was to macrolide antibiotics while the lowest incidence was to cefepime (4^{th} generation cephalosporin). Beta-lactam resistance was found to be through alterations of PBPs in resistant isolates and none of the resistant isolates showed production of β-lactamases. For macrolides and lincosamides resistance, M phenotype was predominant in the tested isolates confirmed by presence of the corresponding gene *mef(A),* followed by $cMLS_B$ then finally the $iMLS_B$, both were confirmed by presence of the corresponding gene *erm(B).*

Conclusion: It was concluded that antibiotic resistance, mediated by different mechanisms, among viridans streptococci group is not uncommon and became alarming especially because they may transfer resistance determinants to more pathogenic organisms or to other oral flora which can cause infections, especially in immunocompromised hosts.

***Keywords*:** Odontogenic diseases, viridans streptococci, antibiotic resistance.

Prevelance of Carbapenemases Producing Imipenem Resistant Gram Negative Bacterial Isolates from Tanta University Hospital, Egypt

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Objective: Carbapenemase production is a cause of multi antibiotics resistant in Gram-negative bacteria, so adequate detection of carbapenemase-producing bacteria is crucial for infection control measures and appropriate choice of antimicrobial therapy. This study detects the occurrence and prevalence of Metallo beta lactamase production among some clinical bacterial isolates from Tanta university hospital, Egypt**.**

Methods: Over a period of 7 months, from April 2014 to October 2014, 1000 clinical samples were collected and sub cultured on MacConkey agar. IMP resistant isolates (IMPR) were detected using Agar Dilution Method with the break point concentration 16 µg/ml of imipenem. MIC of imipenem against the tested resiatant isolates was determined using agar dilution technique. These isolates were screened phenotypically for carbapenemase using Modified Hodges Test (MHT) followed by Spectrophotometry determination of carbapenemases activity using UV-1800 UV-VIS Spectrophotometer. Double-disk synergy test (DDST) was performed for detection of Metallo β lactamase (group B carbapenemases). Antimicrobial resistance pattern for Metallo β lactamase producing isolates were determined using Kirby-Bauer diffusion method.

Results: Among 1000 clinical samples, a total of 600 clinical isolates of G -ve bacteria were isolated on MacConkey agar (385 non lactose fermenter - 215 lactose fermenter). Using Agar Dilution Method containg the break point concentration 16 µg/ml of imipenem, it was found that 110 isolates are IMP resistant comprising of Pseudomonas ssp (22,20%), E-coli ssp (10, 9%), Klebseilla ssp (30, 27.3%),Proteus ssp (21, 19%), Shigella ssp (8, 7.2 %), Sallmonella ssp (5, 4.5%). MIC for imipenem was determined for IMPR isolates and found that 9 (8.1%) isolates (MIC= 256 µg/ml), 11(10%) isolates (MIC= 128 µg/ml), 26 (23.6%) isolates (MIC= 64 µg/ml), 26 (23.6%) isolates (MIC=64 µg/ml), 31(28.1%) isolates (MIC=32 µg/ml), 23(20.9%) isolates (MIC=16 µg/ml) and 10 (9%) isolates (MIC=8 µg/ml), MHT showed that 42 (38.2%) of IMPR isolates are carbapenemases producers while spectrophotometric method showed that 35 (31.8%) of IMPR isolates with carbapenemases activity . DDST showed that 24 (21.8%) of 110 IMPR isolates were Metallo β lactamase producers. Susceptibility test towards Metallo β lactamase producers was done using

19 antibiotic discs and the highest resistance was recorded towards all extended spectrum cephalosporins (100%), Aztreonam (97.1%), sulfamethoxzole-trimethoprime (88.6%) and the least resistance towards colistin (22.9%)followed by tigycycline (25.7%).
Conclusion: phenotypic tests are simple tests for detecting carbapenemases especially metallo β lactamase for infection control measures and appropriate choice of antimicrobial therapy. Molecular studies will be continued on these carbapenemases producing isolates and testing some compounds as inhibitors for carbapenemases activity.

***Keywords*:** Carbapenemase, Metalloβlactamases, Modified Hodge test, Spectrophotometry, Double-disk synergy test (DDST)

Physiotherapy

Effects of Overweight and Obesity on Motor Development in Young Children

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Background/Aim: The motor developmental sequence may be delayed as a consequence to childhood obesity. The purpose of this study was to examine the relationship between weight and developmental delays in young children.

Subjects: 75 children with mean age 15.1 ± 2.1 months assigned in 3 groups Group A: normal weight <85th percentile for weight. Group B: overweight ≥90th percentile for weight. Group C: obese ≥95th percentile for weight.

Methods: secondary analysis of the Early Childhood Longitudinal Study Birth Cohort data was conducted to detect the association between different weight statuses (normal weight <85th, overweight ≥90th, obese ≥95th percentile for weight) and delays in motor development using the peabody developmental screening test.

Results: Children classified as overweight (obese ≥95th percentile for weight) had higher percentages of delays, as well as children classified as (overweight ≥90th percentile for weight) had less percentages of delays, while (normal weight <85th percentile for weight) had nearly no percentages of delays.

Conclusion: Overweight children are more likely than their normal-weight peers to have motor developmental delays. Preventing obesity during infancy may facilitate reducing developmental delays in young children.

***Keywords*:** Childhood obesity; developmental delay; motor delay

Physical Therapy Intervention in Neck Pain and Radiculopathy

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Neck pain is pain that occurs anywhere from the bottom of the head to the top of the shoulders. Pain may spread to the arms and may cause limit neck and head movements with functional impairment.

Neck pain may be due to strain or sprain of the ligaments or neck muscles from a sudden movement and sleeping without good neck position like sleeping on stomach. Poor posture, obesity, and weak muscles disrupt the spine's balance and often causing neck pain.

With age and repeated efforts, the intervertebral discs lose their height and water content leading to its tear or stretch .Damage the discs result in abnormal motion between the bones "bone to bone"leads to pain.

Disc disorders vary from degenerative disc disease, internal disc disruption and herniated nucleus pulposus. Cervical spondylosis is a degenerative disc disease due to age related changes, but the condition also is affected by lifestyle, genetics, smoking, nutrition, and physical activity. Spondylosis may be associated with neck pain, headaches and limited ability to move the neck .Large osteophytes may compress nerve root (Radiculopathy) lead to arm pain. Arm pain can go in the shoulder thumb, middle finger, or little finger.

The physical therapy program is designed according to the stage and severity of the lesion. Acute stage includes medications and neck immobilization in addition to brief ice application. Treatment for chronic pain includes several different general categories. The prescribed program is aiming to improve impaired physical function resulting from injury. The physical therapist enhances rehabilitation and recovery by clarifying a patient’s functional limitations with identifying the treatment goals and precautions.

***Keywords*:** Neck pain-cervical radiculopathy-Physical Therapy.

Effect of Counterforce Brace on Isokinetic Measurements and Myoelectric Activity of Wrist Muscles in Lateral Epicondylitis

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Background / Aim: Counterforce braces are commonly used for treating the symptoms of lateral epicondylitis. The purpose of this study was to the examine the effect of the counterforce brace on the rmyoelectric (EMG) activity and isokinetic measures (torque, mechanical fatigue and agonist/antagonist ratio) of the dominant arm wrist extensors in subjects suffering from lateral epicondylitis.

Materials and Methods: Thirty subjects with an age ranging from 35-50 years participated in this study. Patients were examined with and without using the counterforce brace. The EMG, agonist/antagonist ratio and peak torque were recorded after five maximal contraction using angular velocity of 120 degrees/sec. The post fatigue torque was also calculated after five maximal contractions at120 degrees/sec. The recorded EMG and isokinetic data were collected simultaneously and analyzed using repeated measure MANOVA with alpha level set at $p<0.05$.

Results and conclusion: Results revealed that the counterforce brace significantly reduced the EMG activity and peak torque of the wrist extensor muscles ($P=0.01$ and 0.02) but had no effect on the mechanical fatigue or the agonist/antagonist ratio.

***Keywords*:** Counterforce brace, Isokinetic measurements, Myoelectric activity, Wrist muscles, Lateral epicondylitis.

Poster I

Laboratory Acquired Blood-Born Parasitic Infexctions from Accidetal Exposure: *A Review article*

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Background: Parasitic diseases are receiving increasing attention in developed countries because of their importance in travelers, immigrants, and immunocompromised persons.
Conclusion: The main aim is the potential hazards of handling specimens that contain viable parasites and about the disease that can result. Blood and tissue protozoa are the most important to be discussed because the risk they pose to laboratorians and because protozoa in contrast to most helminthes, multiply in human host, even in small inoculum can cause illness. Parasitic diseases involved are: Babesiosis, African trypanosomiasis (sleeping sickness), American trypanosomiasis, (Chagas' disease), Leishmaniasis, and Malaria.

***Keywords*:** Malaria, trypanosomiasis, leishmaniasis, babesiosis.

The Relation between Advanced Glycation End Products and Cataractogenesis in Diabetics

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Background/Aim: Advanced glycation end products (AGEs) play a pivotal role in cataractogenesis. Production of AGEs takes place throughout the normal aging process but its accumulation is found to be accelerated in diabetes. Advanced glycation end products formation and cataract progression are extremely slow processes and are triggered by the presence of free radicals. Oxidative stress along with AGEs may integrate resulting in acceleration of cataract formation.
Subjects and Methods: In the present study twenty patients with diabetic cataract, 20 patients with senile cataract, as well as 20 healthy non-diabetic subjects (age and sex matched healthy controls) were selected from the outpatient clinic of the Research Institute of Ophthalmology (RIO). Malondialdehyde (MDA) an oxidative marker, total antioxidant capacity (TAC), reduced glutathione (GSH), superoxide dismutase (SOD) antioxidant markers and AGEs were estimated in all studied groups.
Results: There were significant decreases in TAC, GSH, SOD activities in both senile and diabetic cataract groups compared to the control group. There was statistically significant increase in plasma MDA and AGEs levels in both the senile and diabetic cataract groups compared to the controls.
Conclusion: This study demonstrated increased accumulation of AGEs and increased lipid peroxidation products along with impaired antioxidant status in patients with both diabetic and senile cataract.

***Keywords*:** Senle cataract- Diabetic cataract- Aging- Advanced Glycation End Products (AGEs)- Oxidative stress- Antioxidants

Induction of Apoptosis in Peripheral Blood Mononuclear Cells by Anti-Fas Monoclonal Antibodies in Rheumatoid Arthritis Patients with or without Uveitis

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Introduction: Rheumatoid arthritis (RA) is a systemic inflammatory autoimmune disease associated with a number of articular and extra-articular organ manifestations. The imbalance between cell proliferation and apoptosis has been incriminated in the pathogenesis of autoimmunity.

Aim of the work: study were: to evaluate the apoptosis process of peripheral blood mononuclear cells (PBMNCs) in RA patients and RA patients with or without uveitis that may contributes to the inflammation in RA, to test the susceptibility of PBMNCs to the in vitro induction of apoptosis with anti-Fas monoclonal antibodies (mAb) and the possibility of using it as an apoptosis therapy to modulate the inflammatory process.

Material and Methods: PBMNCs were isolated and cultured in the presence or absence of anti-Fas (mAb). Evaluation of apoptosis was determined by measuring the (%) of cell viability and the levels of apoptosis (DNA and histones components of the nucleosomes) as indicated by levels of absorbance in the supernatant of cultured cells by ELISA before and after induction of apoptosis.

Results : revealed that before induction of apoptosis with anti-Fas (mAb) the mean % of cell viability of all the studied groups was high, however, highly significant reductions ($P < 0.001$) in cell viability were found in groups ($P<0.001$) after induction of apoptosis and the reduction was more pronounced in RA patients with uveitis ($P<0.001$). On the other hand, anti-Fas (mAb) induced significant elevations in the mean values of apoptosis levels (absorbance) in all RA patients ($P<0.01$) and RA with uveitis ($P<0.05$).Additionally, negative correlations were detected between % of cell viability and apoptosis levels, and between % of cell viability and inflammatory markers (DAS, CRP, Anti-CCp and ANA).

Conclusion: insufficient apoptosis of PBMNCs of RA patients, RA patients with and without uveitis may play an important role in RA disease and these cells can be induced to undergo apoptosis in vitro by anti-Fas (mAb). The study points out to the possibility of using anti-Fas (mAb) as an apoptosis induction therapy to modulate the inflammatory process.

***Keywords*:** Apoptosis, Peripheral Blood Mononuclear Cells, Anti-Fas Monoclonal Antibodies, Rheumatoid Arthritis

Effect of Grape Seed Extract on Oxidative Stress Induced by Argon Laser Beam during Eye Treatment

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Objective: Information regarding the protective effect of GSPE on retinal tissue during argon laser photocoagulation is rare. The present study was conducted to investigate the protective effect of GSPE on oxidative stress produced during retinal photocoagulation with different power of argon laser. The fractionation of laser dose was also tested.

Materials and Methods: Chinchilla rabbits underwent retinal photocoagulation with 200 mW, 400 mW and 400 mW as fractionated dose (FD) argon laser. Malondialdehyde (MDA) level, total antioxidant capacity (TAC), FTIR measurement and histopathological examination for both control and photocoagulated retinal tissue were carried out.

Results: Grape seed extract GSPE supplementation improves the level of TAC in rabbit retina exposed to argon laser in concurrent with a decrease in MDA level. FTIR spectroscopy and histological findings showed a positive result for GSPE in reducing laser effects on the retinal tissue.

Conclusion: GSPE has an extremely beneficial role in overcoming the resultant adverse biological effects of argon laser photocoagulation on retinal tissues due to its potent antioxidant properties. Retinal photocoagulation in two sessions was more protective for retinal tissue than single session argon laser.

***Keywords*:** Grape Seed Extract - Oxidative Stress - Argon Laser - Eye Treatment

A New Kaempferol Glycoside with Antioxidant Activity from *Chenopodium ambrosioides* growing in Egypt

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Objective: The current study aimed to identify the chemical constituents of *Chenopodium ambrosioides* (Linn.) leaves, and to evaluate the *in vitro* antioxidant of the different solvents extract and pure isolates.
Methods: The *in vitro* antioxidant was evaluated using 2,2' diphenyl-1-picrylhydrazyl radical ($DPPH^{\cdot}$) scavenging and Phosphomolybdenum assays. Structure elucidation of the isolated compounds was achieved via UV, IR, ^{1}H & APT ^{13}C-NMR, ^{1}H-^{1}H COSY, HMQC, and HMBC, spectroscopy.
Results: Bioassay-guided fractionation and isolation of the *n*-butanol extract of *Chenopodium ambrosioides* led to the isolation of a new kaempferol glycoside namely; kaempferol 3-*O*-α-L-rhamnosyl-(1'''→2'')-β-D-xylopyranoside (1), together with five known compounds identified as; kaempferol 3-*O*-α-L-$^{1}C_{4}$–rhamnopyranoside (afzelin) (2), kaempferol 7-*O*-α-L-$^{1}C_{4}$–rhamnopyranoside (3), caffeic acid (4), 1,2-benzopyrone (coumarin) (5), and kaempferol (6). Compound (1) showed *in vitro* antioxidant activity of SC_{50} 12.45 µg/ml, compared to the positive control ascorbic acid (AA) with SC_{50} of 7.50 µg/ml.
Conclusions: It can conclude that the leaves of *C. ambrosioides* can be used as promising natural antioxidants agents.

***Keywords*:** Chenopodiaceae*; Chenopodium ambrosioides;* Kaempferol 3-*O*-α-L-rhamnosyl-(1'''→2'')-β-D-xylopyranoside, Antioxidant, DPPH, 2D-NMR.

The Impact of the Education Program on Knowledge among Nurses Regarding Nosocomial Infection in Basra City, South of Iraq

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Background/Aim: Nosocomial infection an infection acquired in hospital by a patient who was admitted for a reason other than that infection. It is occur worldwide and causes of death and increased morbidity among hospitalized patients. The study aims to:- 1. Investigate nurses' knowledge about nosocomial infections. 2. Evaluate the effectiveness of the educational program regarding nosocomial infections on nurses.

Material and Methods: An educational program was carried out on a simple random sample of (50) nurses (from different educational levels) who work in different wards at Basra General Hospital. The project instrument was a questionnaire including information about both demographic characteristics and nosocomial infection. The sample was involved in pre and post test on the programme which lasted five days. The sample was tested during the first day (as pretest) with (20) items related to nosocomial infections. The same test was repeated after 4 days. The answers of both pre and post test were gathered and analyzed. Data of the present study were analyzed by the use of statistical package for social sciences (SPSS) program for descriptive statistical procedure through the determination of frequency(f), percentage(%),and mean score.

Results: The results show that the highest percentage (36%) of the sample were aging nurses group (20-29) years, although the lowest percentage (10%) of the sample were aging less than (20) years old. Highest percentage (54%) female, although the lowest percentage (46%) male. The highest percentage (36%) were secondary school graduate, while the lowest percentage (8%) were college education. High percentage (30%) with group(1-5) years, while the lowest percentage (10%) of the sample were number years more than (16) number years' work.

Majority nurses have deficit knowledge about etiology modes of transmission, spread nosocomial infections and symptoms. According to amrithmetic mean for pre-test score is (20.40), which mean that nurses don't have sufficient knowledge about nosocomial infection. Arithmetic mean for post-test score is (35.88) and according to T-test between pretest and posttest score is (18.11), which mean that there is a significant difference between pre-test and post-test score. Majority nurses have deficit knowledge about etiology modes of transmission, spread nosocomial

infections and symptoms. There was a high difference between knowledge between pre-test and post-test.
Conclusion: The present findings show the effectiveness of program through the high percent of excellent for the nurses responses concerning the nosocomail infection knowledge between the pre and post program for the case group, and the majority of nurses responses for the case group at post program were have good knowledge concerning nosocomail infection than the pre program.
***Keywords*:** Education Program, Nurses, Nosocomial Infection, questionnaire

Poster II

Pharmacological Activity Evaluation of New Heterocyclic Compounds Containing Chromoneindole and Chromonepyrazole Derivatives as Anti-inflammatory and Antidiabetic Agents with Study of Molecular Modeling

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Objective: The natural and synthetic chromones have been interested for their therapeutic effect and potential biological activity. The chromone derivatives forms the important compounds of pharmacophores of a large number of molecules have been applied in medicinal chemistry and many pharmaceutical industries. The objective of this study was an evaluation of some new derivatives of the chromones for their pharmacological activities for anti-inflammatory, analgesic and antidiabetic activities with study of molecular modeling using Molecular Operating Environment (MOE) program.

Materials and Methods: The aim of the present research is the synthesis of a new series of chromene derivatives namely: 2-amino-4-(1H-indol-3-yl)-6-phenyl-5,6,7,8-tetrahydro-4H-chromene (HL1) and 2-amino-4-(1,5-dimethyl-3-oxo-2-phenyl-2,3-dihydro-1H-pyrazol-4-yl)-6-phenyl-5,6,7,8-tetrahydro-4H-chromene derivatives (HL2) and their metal complexes with Co (II), Ni(II) or Cu (II), and then evaluated to their pharmacological activities as anti-inflammatory, analgesic and antidiabetic activities in mice with the determination the acute toxicity and LD_{50} in mice.

Results: The data shows that the most active compounds were 15 and 14 as anti-inflammatory agents when compared to an indomethacin as the reference drug and compounds 2a, 2b, and 3b as analgesic agents when compared to the acetylsalicylic acid, then that the compounds 3a, 15 and 3b have shown a good antidiabetic activity when compared to gliclazide as the reference drug. Molecular modeling study has been done to find out the interaction between ligand and receptor and compare the affinities of some

of the compounds synthesized to the target COX1 receptor. From the molecular modeling and the validation of the compounds 15, 2a, 2b and 3b have been performed as a potential target receptor using pharmacophore based correspondence with previous leads; compound 15 and 14 give the highest scores and a strong correlation docking with the concentrations of inhibition of the scores.
Conclusion: A new binding has been predicted after docking according to the MOE software program. The binding affinity evaluated by the binding free energies calculated as (S-score, kcal/mol), hydrogen bonds, and RMSD values.

***Keywords*:** Chromene derivatives, Metal complexe, Anti-inflammatory activity, Analgesic activity, antidiabetic activity.

Development and Evaluation of Span-Based Proniosomes as Drug Carrier for Glimepiride

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Objectives: The aim of this study was to develop proniosomal carrier systems for the antidiabetic drug glimepiride (GMD) using different types of Spans (Span 20, Span 40, Span 60 and Span 80).
Methods: Proniosomes were prepared using Coacervation phase separation method. Accurately weighed amounts of span and cholesterol were mixed and placed in glass vials. Cholesterol was added as 10% increments (0% to 50%). GMD (15 mg) dissolved in absolute ethanol (400 mg) was added then the vials were tightly sealed. Warming in water bath (55-60°C) for 5-10 minutes while shaking was performed. To each vial, 0.16 ml hot distilled water (55-60°C) was then added. The mixtures were cooled down at room temperature and kept in dark for further characterization. Niosomes were developed from proniosomes by adding 10ml of phosphate buffer (pH 7.4) followed by heating for 10 minutes and vortexing. The entrapment efficiency % (EE%) of GMD was determined using Freezthawing/ Centrifugation method. The in vitro release of GMD from proniosomes was determined using Franz Diffusion Cell and Mixed Cellulose Ester (MCE) Membrane. Phosphate buffer (pH 7.4) containing 10% methanol was used as a receiver medium. Samples were withdrawn at specified time intervals (0.5, 1, 2, 3, 4, 6, and 8 h) and were analyzed spectrophotometrically at 228 nm.
Results: Gel formation started at 20% and 30% of cholesterol concentration for Span 20 and Span 80, respectively. Span 40 and Span 60 produced white creamy gels in the presence or absence of cholesterol. The niosomes developed from Span 60 had the highest EE% while the ones developed from Span 80 showed the lowest values. The effect of cholesterol on the EE% varied according to the surfactant used. For Span 80, increasing cholesterol from 0% to 50% showed an increase in the EE%. Other Spans, increasing cholesterol from 0% to 50% showed a decrease in the EE%. Cholesterol free proniosomes of Span 20 and Span 80 gave the highest release rates. By increasing cholesterol into both systems, the release rates of GMD were significantly decreased. Cholesterol free proniosomes of Span 40 and Span 60 systems gave the lowest release rates. Addition of 10% and 20% cholesterol to both systems gave higher release rates but further increase in cholesterol (more than 20%), decreased the drug release rates.
Conclusion: Proniosomes for GMD using Spans were easily prepared. The EE% and in-vitro release of GMD was a function of cholesterol content. Future studies will be conducted to investigate the potentials of proniosomes for transdermal delivery of glimepiride.
***Keywords*:** Span-Based Proniosomes, Drug Carrier, Glimepiride

Association of *WDR36* Gene Polymorphism with Primary Open Angle Glaucoma in the Egyptian Population

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Background/Aim: Glaucoma is a heterogeneous group of optic neuropathies with a complex environmental and genetic basis and one of the leading causes of blindness. The gene *WDR36* has been linked to glaucoma and different variants of the gene were recently reported in patients with primary open-angle glaucoma (POAG) in different populations and ethnic groups worldwide. The present work aimed at the assessment of the association of *WDR36* gene polymorphism with POAG in an Egyptian population.
Subjects and Methods: Unrelated 84 POAG patients and 60 controls were recruited to this study. The diagnosis followed a strict inclusion and exclusion criteria. The gene variant *WDR36* c.1064A>G (rs118204022) was investigated in both patients and controls by Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) technique. The sequencing technique (Capillary Electrophoresis) and BLAST database were also used.
Results: The mutant genotypes (the total of AG and GG) of *WDR36* c.1064A>G showed statistically significant association with POAG ($p = 0.001$). The distribution of heterozygous genotype (AG) of *WDR36* c.1064A>G was also statistically significant in both male and female patients compared to their matched healthy controls, ($P = 0.03$). Interestingly, the homozygous mutant genotype (GG) was less represented and all females participated in this study had a complete absence of the GG genotypes.
Conclusions: This is the first study demonstrating that sequence variation of *WDR36* gene is associated with POAG in the Egyptian population. The results may provide new insights into the role of *WDR36* gene in the pathogenesis of glaucoma and consequently, helps to unravel the underlying mechanism of the disease and to find new diagnostic tools. The use of gene polymorphism detection is suggested to be a part of the population screening strategies. Further large scale studies in Egypt are recommended.
***Keywords*:** *WDR36* Gene Polymorphism, Glaucoma

Design, Synthesis and Molecular Modeling Studies of New Benzimidazole Derivatives as Anticancer Agents

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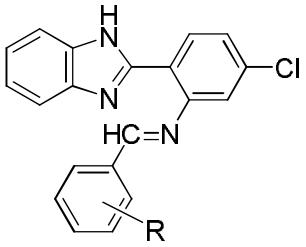
Objectives: New benzimidazole derivatives were designed, synthesized and evaluated for their potential anticancer activity using human cancer cell lines.

Materials and methods: The starting compound was synthesized through the cyclocondensation reaction of *O*-phenylenediamine with the appropriate reagent**.** Design of the newly synthesized benzimidazole derived Schiff bases **I** was defined by molecular modeling. Target compounds were obtained in reasonable yields utilizing efficient synthetic routes through the reaction of 2-(1*H*-benzo[*d*]imidazol-2-yl)-5-chloroaniline with a series of different aromatic aldehydes. All the synthesized compounds were characterized by elemental analysis, IR, ^{1}H-NMR and Mass spectroscopy.



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Results: by means of computational chemistry we managed to design some new anticancer agents and biological screening is being performed to determine their activity towards cancer cells especially breast and prostate cancer.

Conclusion: imidazole compounds are of a great value as anticancer compounds and more studies are needed to make full use of their activity towards the most common cancer types in Egypt.

***Keywords*:** Design, Synthesis, Benzimidazole Derivatives, Anticancer

Isolation of Some Chemical Constituents (Lipids & Glucosinolates), Antidiabetic Activity and Molecular Docking of Active Constituents from *Cleome africana*

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Objective: This study aim to investigate some chemical constituents and evaluation of the anti-diabetic activity of different extracts of *Cleome africana* growing in Egypt, in addition to prove the activity of active constituents by molecular docking.
Material and methods: the plant was collected, dried and grinded to a fine powder, extracted in a soxhlet-using pet. ether to give the lipid constituents which were fractionated into fatty alc., unsap. and fatty acids. The defatted plant material was extracted with methanol (80%). The methanolic extract was passed over an acidic aluminum oxide column followed by cellulose column to afford the glucosinolates, which were subjected to enzymatic hydrolysis.
Results: Investigation of the lipid constituents led to isolation and identification of eleven fatty alcohols and hydrocarbons from the acetone insoluble fraction. The fatty alcohols comprises four compounds in which tetratetracontanol is the main one 16.4%, hydrocarbons include seven components in which tetratetracontane is the major (24.44%). The unsap. fraction consists of a series of n-alkanes from n-C14 to n-C31 representing 93.66 % with n-C22 as a main compound. In addition to cholesterol 0.96%, campasterol 0.3%, stigmasterol 1.46%, β- sitosterol 1.88% and α-amyrin 0.53%.The fatty acid profile revealed the presence of a mixture of eight fatty acids. The main component is Linoleic acid which forms 38.99 %, followed by Oleic acid 29.40%. The glucosinolate constituents were isolated from the methanolic extract and identified as : 3-ethyl sulfonyl 2,3 dimethoxypropyl GLs. The enzymatic hydrolysis with myrosinase of the total glucosinolate allowed us to identify corresponding eight isothiocyanate and two thione compounds. Molecular docking of the compound G (3-ethyl sulfonyl 2,3 dimethoxypropyl GLs) and F (Kaempherol-3,7-*O*-dirhamnoside) with Alpha glucosidase enzyme using C-DOCKER protocol proved that they have higher docking scores relative to the lead molecule and the ligand (Glimipride).
Conclusion: The lipid constituents and glucosinolates were identified and the performed molecular modelling studies indicated that the two molecules F and G are predicted to be promising active hits as anti-diabetic through Alpha glucosidase inhibitor.

***Keywords*:** *Cleome africana*; lipid profile; glucosinolates; molecular docking; anti-diabetic activity.

المؤتمرالدولى الخامس للجمعية العربية للبحوث الطبية

تحت شعار

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