



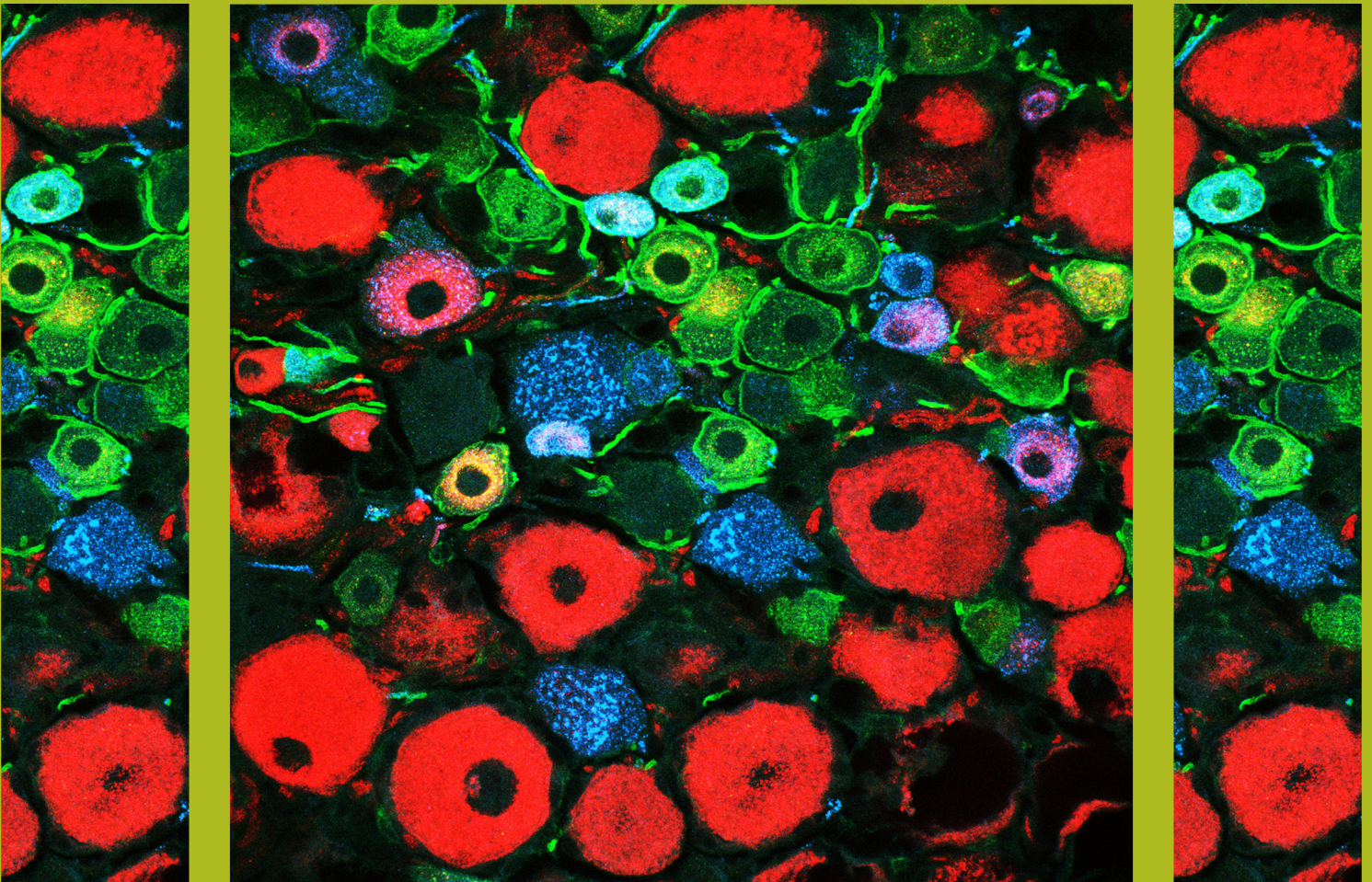
جامعة الإمارات العربية المتحدة
United Arab Emirates University

UAEU College of Medicine
and Health Sciences

2014

Research Publications & Research Profiles

Office of the Assistant Dean for Research
and Graduate Studies



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COVER IMAGE by Professor Safa Shehab, Anatomy Department:

Confocal image showing cholera toxin labeled- (CTb, red) and isolectin B4-labeled (IB4, green) neurons in the fifth lumbar dorsal root ganglion (DRG) of a rat injected with CTb and IB4 into sciatic nerve. CTb positive neurons are mainly of large size (responsible for transmission of mechanoreceptive and touch sensations) while IB4 positive neurons are mainly of small size (responsible for transmission of pain sensation). The image also shows whether these largely separate populations may also contain CGRP (blue).

Inside research images provided by the individual researchers



Annual Publication of the Office of The Assistant Dean
for Research & Graduate Studies

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Contents

Dean's message

Foreword from the Assistant Dean for Research & Graduate Studies

Editor's Preface

Research Publications by Department	1	Research Priority Groups	107
Anatomy	3	Diabetes and Cardiovascular	109
Biochemistry	8	Genetics and Development	112
Family Medicine	19	Immunology and Immunoregulation	115
Institute of Public Health	23	Neurosciences	117
Internal Medicine	33	Oncology	119
Medical Education	42	Trauma	120
Medical Microbiology & Immunology	45		
Obstetrics & Gynaecology	53	Medical Student Research	125
Pediatrics	56		
Pathology	62	Impact Factors	127
Pharmacology & Therapeutics	70		
Physiology	79		
Psychiatry & Behavioural Sciences	89		
Radiology	94		
Surgery	97		

Dean's Message

Dear Friends and Colleagues,

I am delighted to present the Research Publications and Research Profiles report for the College of Medicine and Health Sciences (CMHS) for 2014. This report is available as an electronic version on the UAEU website.

CMHS maintains its leadership among research faculties in the UAE and throughout the region. The success of the College is due to its talented faculty and the productive research relationships that it has formulated with other Colleges within UAEU, and with other Universities, industrial partners, and health care institutions across the UAE and the region. We are particularly proud of our recent cooperative relationships with foreign universities that enable the collaborative research documented here, as well as enabling our teaching mission through exchange of students and faculty.

As one of nine colleges of UAEU, the CMHS retains its number-one ranking among the other colleges of this research-intensive university. It also leads the entire UAEU in research productivity, though we recognize the development of new research institutions in Dubai, Abu Dhabi, and Sharjah, among others, and wish our colleagues at those institutions success as well. We are grateful for the involvement of both medical students and those on Master's and PhD programs who have contributed not only to research publications, but also to the environment of scholarly inquiry that pervades the College. Trainees from CMHS are to be found across the UAE, and their training is leading to scholarly and cultural advancements to strengthen the Nation's future.

I would specifically like to thank Prof. Keith Bagnall for his tireless effort to assemble and present this information. Prof. Bagnall's career exemplifies our productive faculty and inspires our best trainees. We are grateful for his contribution to our continued success.

I also applaud each student, technician, faculty member, and support staff who have contributed to each scientific project and published report that are documented here. The success of the College is only possible with a productive and dedicated team.

Prof. Dennis Templeton, M.D., Ph.D.
Dean, College of Medicine & Health Sciences

Foreword from the Assistant Dean for Research & Graduate Studies

Throughout the last 24 years, this annual report on Research Publications and Research Profiles have kept the extramural community aware of the contributions of the CMHS through research productivity, presentations at international conferences and other scholarly activities. This contribution from the CMHS has contributed to position the UAEU as the top biomedical research-intensive institution in the UAE and the region.

The last couple of years have witnessed great opportunities for our researchers through availability of various generous funding opportunities. Despite the very competitive atmosphere, our college managed to secure a good number of external as well as internal grants. Securing such grants enabled our researchers to recruit and support excellent research graduate students and maintain their impressive productivity level.

At the office of research and Graduate studies we strive to provide such an environment for our researchers that preserves cooperation, productivity of international standards and enables creativity in research. This was achieved by allocating resources wisely, nurturing incoming faculty, and providing the necessary infrastructure and resources by acquiring state of the art equipment and technologies, in addition to running a store for general consumables for research. In the recent years, we have also embarked on developing and maintaining central research facilities such as the Electrophysiology center, the Electron and Confocal laser microscopy imaging unit, Analytical, and a Molecular and Cellular Biology facility, in addition to a small animal vivarium.

In the Past year, our Deputy vice chancellor for research & Graduate Studies together with the director of research and sponsored projects have actively worked on implementing the vision of his excellency the Chancellor Sheikh Hamdan bin Mubarak Al Nahyan which identified the UAEU as the flagship university of the UAE where high-quality research output is a priority. The ongoing support of the office of the DVCRGS Have provided invaluable funding sources and provided solutions for several problems including procurement research assistants hiring delays.

As always I would like to take this opportunity to thank all those who have contributed in many ways to this publication and our research achievements at the CMHS.

Dr. Mariam Al Shamsi
Assistant Dean for Research & Graduate Studies

Editor's Preface

This is the 24th annual report on Research Publications and Research Profiles for the College of Medicine and Health Sciences, United Arab Emirates University. This volume is a continuation of a series of annual reports, dating back to the very first report in 1991.

As usual, every year we try to upgrade and maintain the quality of this report and this year is no exception. We have continued to include the Departmental Profiles and the Reports from Research Priority Groups. At the end of the booklet we have also listed the Journals in which publications have been made and their impact factor. We have also kept the design developed in our media center and which appears to be well accepted. This provides a uniform style and a consistent use of the visual elements making it easy to identify chapter, sections and text categories.

It is also a great pleasure to thank the production team who have put all this together. Ms. Ivanna Lizarriturri was the graphic designer, Mr. Rajagopalan was very efficient and patient and took care of editing the initial departmental contributions and communication between all parties, and Mr. Ashok Prasad provided some excellent photographs. The translation, as in previous years, was ably performed by Ms Al-Anood Al-Jaberi.

Many thanks to all involved, especially the faculty, for their contributions.

Professor Keith M. Bagnall, *Editor*.

Research Publications by Department

Anatomy

Biochemistry

Family Medicine

Institute of Public Health

Internal Medicine

Medical Education

Medical Microbiology & Immunology

Obstetrics & Gynaecology

Pediatrics

Pathology

Pharmacology and Therapeutics

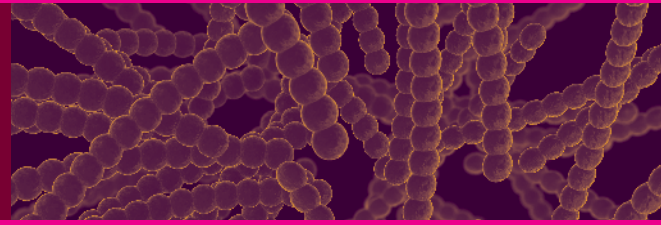
Physiology

Psychiatry and Behavioural Sciences

Radiology

Surgery

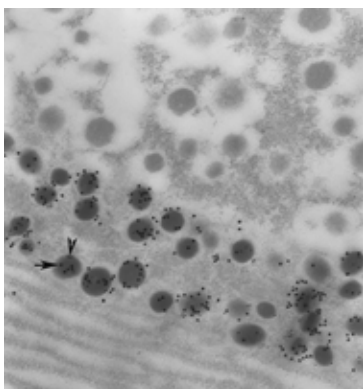
Department of Anatomy



Research Profile

Academic staff in the Department of Anatomy pursues research interests in a number of directions. We show considerable strength in the fields of neurobiology, stem cells, cancer, diabetes mellitus, and structure/function relations.

Prof Ernest Adeghate's major research interest is on the effect of pancreas transplantation on the metabolic parameters of animal models of diabetes mellitus (DM). He also examines the role of neuropeptides and neurotransmitters on insulin and glucagon release from the pancreas, especially in diabetic conditions and how these could be used in the management of DM. He is also interested in the morphological basis of diabetes complication.



The figure shows immunoelectron micrograph of glucagon (arrow) and GLP-1 (arrow head) in a pancreatic alpha cell of a normal rat. GLP-1 and its analogues are important in the treatment of DM. X27,500

Professor & Chair:

Prof E Adeghate

Professors:

Prof K Bagnall

Prof SM Karam

Prof E Mensah-Brown

Prof S Shehab

Assistant Professor:

Dr BS Emerald

Medical Research Specialists:

Ms C D'Souza

Ms M F Ibrahim

Mr P Saseedharan

Mr S Tariq

Mr W Wanniarachi

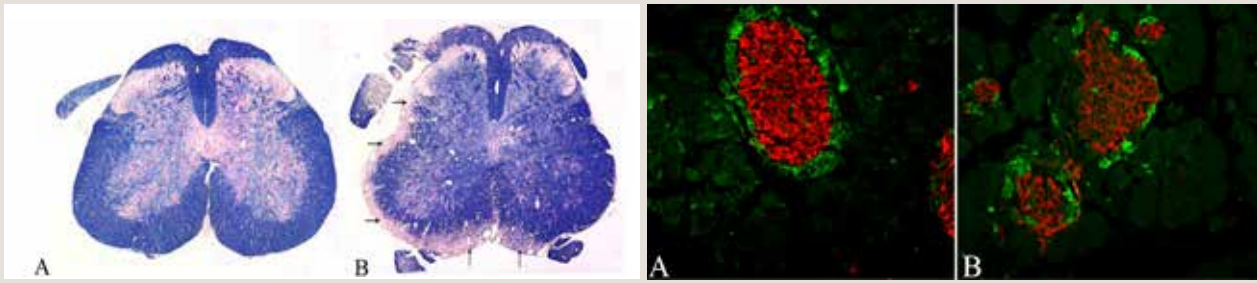
Secretary:

Ms S Al Shamsi

Office Assistant:

Mr TV Basheer

Prof Eric PK Mensah-Brown This year I have together with my collaborators continued to investigate the role of cytokines and the cells that produce them in multiple sclerosis using rodent experimental autoimmune encephalomyelitis (EAE) as a model. For the first time, we have shown in the SJL/TCR mice that develops EAE spontaneously (see figure)



Luxol fast blue stained sections of the lumbar region of the spinal cord in SJL wild type (A) and TCR transgenic (B) mice showing areas of demyelination. Note the process of demyelination at this early stage of the disease is limited to the peripheral areas of the white matter and is asymmetrical in distribution. We have also continued our epigenetic studies into diabetes type 2 and have investigated the early indicators of altered metabolic function using rat pups on the first day of birth. The pups were grouped into low birth (LBW, 4.5-5.4 g) and average birth (ABW, 6.0 – 6.9 g) weight groups and the insulin signaling pathways and the epigenetic pathways that regulate them are presently being investigated. As shown below, double immunofluorescent staining of islets from the two groups shows a significant difference in the number of insulin and glucagon positive cells.

Double immunofluorescent images of islets of Langerhans from LBW (A) and ABW (B) mice showing distribution of insulin (red) and glucagon (green).

Prof Keith M. Bagnall's research has focus in three areas. He is interested in the aetiology of adolescent idiopathic scoliosis and is trying to find indicators of future development of this disease as well as indicators of progress of the spinal curves if they develop. He is also interested in the repair of articular cartilage by the introduction of cultured chondrocytes or stem cells. A third interest involves identifying the attributes necessary to be a successful clinician and the development of tests to predict the future performance of medical students.

Prof Safa Shehab studies the reorganisation of the neuronal circuitry in the dorsal horn of the spinal cord after peripheral nerve injury. He is investigating the types of primary afferent fibres that are critical for development of neuropathic pain and identifying the ascending spinal projection pathways which are responsible for transmitting visceral pain to the brain. He is also investigating the mechanisms of deep brain stimulation which is now increasingly used to treat patients with movement disorders and variety of neurological diseases.

Prof Sherif M. Karam's main research focuses on two main fundamental aspects of stem cell biology. 1) The proliferation and differentiation programs of gastric and mammary gland stem cells are investigated to define their role during carcinogenesis (stomach cancer and breast cancer). 2) The potential use of isolated gastric and dental stem cells in tissue engineering for regenerative medicine are investigated by ma-

nipulating their growth and differentiation on nanofibrous scaffolds.

Dr Starling Emerald's laboratory is interested in understanding how subtle changes in expression of genes mediated by epigenetic regulatory interactions leads to metabolic diseases such as type 2 diabetes mellitus, obesity, cardiovascular diseases and hypertension. According to the International Diabetes Federation's report the number of people (20-70yrs) with diabetes in the UAE is ~ 425000, a staggering 18.7% of the population. Unfortunately it is on the rise and projected to reach 21.7% by the year 2030. Although an adverse early-life environment has been linked to an increased risk for the development of metabolic diseases such as type 2 diabetes mellitus, obesity and hypertension the molecular mechanisms underlying these altered disease susceptibility is largely unknown. To understand the possible molecular mechanisms as well as to elucidate its relevance to human health we are using gene expression profiling, methylation profiling as well microRNA profiling analysis. From these studies we have identified a number of novel targets (genes, microRNAs and promoter sequences) including some key regulators. We believe that a detailed analysis of these targets may improve our understanding of how subtle changes in epigenetic regulation/s predisposes towards metabolic syndrome which in turn may help in designing better intervention strategies which is required if we need to stop the increasing trend of metabolic diseases.

Articles in Peer-reviewed Journals

Aburawi EH, Aburawi HE, Bagnall KM, Bhuiyan ZA. (2014). Molecular insight into heart development and congenital heart disease: An update review from the Arab countries. *Trends Cardiovasc Med*, pii: S1050-1738(14)00212-6. doi: 10.1016/j.tcm.2014.11.007.

Al Shemali J, Mensah-Brown E, Parekh K, Thomas SA, Attoub S, Hellman B, Nyberg F, Adem A, Collin P, Adrian TE. (2014). Frondoside A enhances the antiproliferative effects of gemcitabine in pancreatic cancer. *Eur J Cancer*, 50:1391-8.

Attoub S, Karam SM, Nemmar A, Arafat K, John A, Al-Dhaheiri W, Al Sultan MA, Raza H. (2014). Short-term effects of oral administration of Pistacia lentiscus oil on tissue-specific toxicity and drug metabolizing enzymes in mice. *Cell Physiol Biochem*, 33:1400-10.

Baseer N, Al-Baloushi A, Watanabe M, Shehab SAS, Todd AJ. (2014). Selective innervation of NK1 receptor-lacking lamina I spinoparabrachial neurons by presumed non-peptidergic A δ nociceptors in the rat. *Pain*, 155:2291-2300.

Csomor V, Laufer R, Pöstényi Z, Kalász H, Adeghate E, Nurulain SM, Tekes K, Adem A. (2014). HPLC Analysis and Detection of L-Deprenyl. *Acta Chromatogr*, 26(4): 649-656. DOI: 10.1556/ACHrom.26.2014.4.7.

Jebasingh D, Jackson DD, Venkataraman S, Adeghate E, Emerald BS. (2014). The protective effects of *Cyperus rotundus* on behavior and cognitive function in a rat model of hypoxia injury. *Pharm Biol*, 52:1558-1569.

Lotfy M, Singh J, Rashed H, Tariq S, Zilahi E, Adeghate E. (2014). Mechanism of the beneficial and protective effects of exenatide in diabetic rats. *J Endocrinol*, 220:291-304.

Lotfy M, Singh J, Rashed H, Tariq S, Zilahi E, Adeghate E. (2014). The

effect of glucagon-like peptide-1 in the management of diabetes mellitus: cellular and molecular mechanisms. *Cell Tissue Res*, 358:343-358.

Mensah-Brown EP Al-Hammadi S, Marzouqi F, Al-Mansouri A, Shahin A, Al-Shamsi M, Mensah-Brown E, Souid AK, Sultan. (2014). The cytotoxicity of aflatoxin b1 in human lymphocytes. *Qaboos Univ Med J*, e65-71.

Nemmar A, Yuvaraju P, Beegam S, Yasin J, Elwasila M, Ali BH, Adeghate E. (2014). Early pulmonary events of nose-only water pipe (shisha) smoking exposure in mice. *Physiol Rep*, 2 (12): e12258.

Nurulain SM, Adeghate E, Sheikh A, Yasin J, Kamal MA, Sharma C, Adem A, Ojha S. (2014). Sub-Chronic Exposure of Non-Observable Adverse Effect Dose of Terbufos Sulfone: Neuroinflammation in Diabetic and Non-Diabetic Rats. *CNS Neurol Disord-DR*, 13:1397-1405.

Pulikkot P, Greish YE, Mourad AH, Karam SM. (2014). Establishment of a three-dimensional culture system of gastric stem cells supporting mucous cell differentiation using microfibrillar polycaprolactone scaffolds. *Cell Prolif*, 47(6):553-63.

Shehab S, D'souza C, Ljubicavljovic M, Redgrave P. (2014). High-frequency electrical stimulation of the subthalamic nucleus excites target structures in a model using c-fos immunohistochemistry. *Neurosci*, 270:212-25.

Shehab SAS. (2014). Fifth lumbar spinal nerve injury causes neurochemical changes in corresponding as well as adjacent spinal segments: A possible mechanism underlying neuropathic pain. *J Chem Neuroanat*, 55:38-50.

Books, Chapters, Reviews and Editorials

Adeghate E, Singh J. (2014). Structural changes in the myocardium during diabetes-induced cardiomyopathy. *Heart Fail Rev*, 19:15-23.

D'Souza A, Howarth FC, Yanni J, Dobrzynski H, Boyett MR, Adeghate E, Bidasee KR, Singh J. (2014). Chronic effects of mild hyperglycaemia on left ventricle transcriptional profile and structural remodelling in the spontaneously type 2 diabetic Goto-Kakizaki rat. *Heart Fail Rev*, 19:65-74.

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Kalasz H, Magyar K, Szoke E, Adeghate E, Abdu A, Hasan MY, Nurulain SM, Tekes K. (2014). Metabolism of Selegiline [(-)-Deprenyl]. *Curr Med Chem*, 21:1522-1530.

Published Abstracts, Letters and Correspondence

Adeghate E, Lotfy M, Singh J. (2014). Cytoprotective Effect of Incretins in Animal Models of Diabetes Mellitus. *Digest Dis Sci*, 59:1648.

Alsaadi M, Shehab S, Al Hammadi R. (2014). The Expression Pattern of Death Associated Protein Kinase 1 (DAPK1) In Dorsal Root Ganglion Neurons Following Peripheral Nerve Injury. *Society for Neuroscience Conference, Washington, USA (abstract #2652)*.

Bastaki SMA, Amir N, Hameed RS, Tariq S, Adeghate E. (2014). Effect of long-term diabetes on the morphology of gastric parietal and chief cells in an animal model of type 1 diabetes. *J Gastroenterol Hepatol*, 29:103.

Tekes K, Antus S, Kalasz H, Adeghate E, Szoke E, Kursinszki L, Gulacsi K, Kiss-Szikszai A, Adem A. (2014). Phenolic Components of Date Fruits Possessing Antioxidant Activity. *Digestive Diseases and Sciences*, 59:1666.

Tekes K, Antus S, Kalasz H, Adeghate E, Szoke E, Kursinszki L, Gulacsi K, Kiss-Szikszai A, Adem A. (2014). Phenolic Components of Date Fruits Possessing Antioxidant Activity. *Digest Dis Sci*, 59:1666.

Proceedings, Conferences, Invited Lectures, Web Sites and Others

Adeghate E. (2014). Cytoprotective effect of incretins in animal models of diabetes mellitus. 8th International Symposium on Cell/Tissue Injury and Cytoprotection/Organoprotection, September 24-26, 2014.

Adeghate E. (2014). Diabetes Asia 2014 Conference, Kuala Lumpur, Sunway Pyramid Convention Centre, Persiaran Lagoon, Bandar Sunway, 46150 Petaling Jaya, Selangor, MALAYSIA, October 16-19, 2014.

Aljabri A, Karam SM. (2014). Alteration of gastric stem cell differentiation program in diabetic rats. Qatar Foundation Annual Research Conference, Al Doha, Qatar.

AlMenhali AA, AlShamisi SB, Branicki F, Karam SM. (2014). Role of Parathyroid Hormone-Like Hormone in Stem Cell Proliferation and Gastric Carcinogenesis. The 3rd Biotechnology World Congress, Dubai, UAE.

Karam SM. (2014). Normal and cancerous stomach stem cells. The 3rd Biotechnology World Congress, Dubai, UAE.

Karam SM. (2014). Stomach stem cells in homeostasis and carcinogenesis. The 2nd Stem Cell Symposium in Science and Medicine, Riyadh, Saudi Arabia.

Ljubisavljevic M, Oommen J, Javid A, Parkeh K, Adrian TE, Shehab S. (2014). Effects of different repetitive transcranial magnetic stimulation protocols on changes in gene expression in the rat brain. 9th FENS Forum of Neuroscience, July 5-9, Milan, Italy.

Pulikkot S, Greish YE, Mourad A-HI, Thomas SA, Karam SM. (2014). Evaluation of 3D culture model of gastric stem cells for tissue engineering. The 8th Dubai International Conference for Medical Sciences, Dubai, UAE

Pulikkot S, Saseedharan P, Greish YE, Mourad A, Karam SM. (2014). Growth and Differentiation of Gastric Stem Cells on Biodegradable Scaffolds. The 3rd Biotechnology World Congress, Dubai, UAE.

Shehab S, D'souza C, Ljubisavljevic M, Redgrave P. (2014). High frequency electrical stimulation of the subthalamic nucleus excites target structures in a model using c-fos immunohistochemistry. 9th FENS Forum of Neuroscience, July 5-9, Milan, Italy.

RESEARCH GRANTS

CMHS Research Grants

Prof E Adeghate (PI)
The effect of betatrophin on the metabolic parameters of an animal model of diabetes mellitus. [2014-2016].

Dr S Emerald (PI), Profs E Mensah Brown, E Adeghate
Identification and characterization of the microRNAs involved in type II diabetes and obesity-associated insulin resistance pathogenesis. [2015-2018]

Dr S Emerald (Co-PI)
The effect of betatrophin on the

metabolic parameters of an animal model of diabetes mellitus. [2014-2016]

Dr S Emerald (Co-PI)
Profiling the role of miRNAs 19, 29 and its isoforms in Emirati patients with Diabetes Mellitus. [2014-2016]

Emirates Foundation Research Grant

Prof SM Karam (PI), Dr S Bahrwani
Stem cells and *Helicobacter pylori* in the stomachs of children (2012-2014)

Sheikh Hamdan Grant Awards for Medical Sciences

Prof E Adeghate (PI), Dr S Emerald
The effect of ghrelin on insulin signaling and metabolic parameters of diabetic rats. [2013-2015]

Prof SM Karam (PI)
The role of ghrelin in the gastrointestinal tract of mice. [2013-2015]

Terry Fox Foundation

Prof SM Karam (Co-PI)
Effects of Crocin «Saffron» on Human Hepatocellular Carcinoma: An in vitro-based metabolomic approach. [2014-2016].

UAEU- Centre-based Interdisciplinary/UPAR Grants

Prof E Adeghate (PI), Dr S Emerald (Co-PI)
Mechanism of insulin release in pancreatic beta cell tumours. [2015-2018]

Dr S Emerald (PI), Prof E Adeghate, E Mensah Brown
Genome wide analysis of early epigenetic targets regulated by histone modifications in type 2 diabetes and obesity. [2014-2017]

Dr S Emerald (PI), Profs E Adeghate, E Mensah Brown
Unravelling the role of PAS domain containing kinase (PASK), a novel member of the H3K4 methyl-transferase complex in pancreatic cancer. [2015-2018]

Prof S Shehab (PI)
A single inhibitory spinal neuron receives inputs from myelinated primary afferents of two adjacent nerves: Possible role in central sensitization of pain. [2015-2018].

Prof S Shehab (Co-PI)
Novel mechanisms for effective anti-depressant drugs. [2014-2016]

Prof S Shehab (Co-PI)
Novel conformation-specific antibodies for immunotherapeutic intervention in Parkinson's disease and related disorders. [2014-2015]

Prof S Karam (Co-PI)
Formation, Characterization and In Vitro Evaluation of Alumina Nanoparticles-reinforced Polymer Composites for Biomedical Applications. [2013-2015]

UAEU Startup Grant

Dr S Emerald (PI)
Contribution of intrinsic and extrinsic factors in metabolic diseases. [2015-2018].

UAEU/SQU joint research projects

Dr S Emerald (PI), Profs E Adeghate, E Mensah Brown

Analysis of molecular epigenetic programming of diabetes mellitus, UAEU/SQU Joint Research Projects, (Co-PI) 2013-2016.

UAEU-National Research Foundation

Prof E Adeghate (Co-PI)
The AV in diabetes mellitus. [2013-2015]

Prof S Karam (Co-PI)
Nanofibrous Scaffolds for Stem Cell Transplantation: stage 2. [2013-2015]

Prof S Karam (Co-PI)
Morphological, electrical & me-

chanical disturbances in stomach & small intestine of diabetic rats. [2012-2015]

Prof S Karam (Co-PI)
Role of Estrogen in Gastric Epithelial Homeostasis. [2012-2015]

Prof S Karam (Co-PI)
Molecular and functional studies on the role of parathyroid hormone-like hormone (Pthlh) in the stomach. [2012-2015]

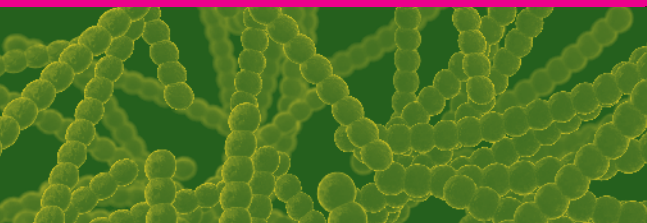


2014 Anatomy



Standing left to right:
S Shehab, A Wann, Prashanth Saseedharan, S Karam, AS Ponery, KM Bagnall, S Emerald

Seated left to right:
TV Basheer, C D'Souza, E Adeghate, S Al Shamsi, R AlKharrge EPK Mensah Brown, R AlKharrge, Marwa farid Ibrahim, Sunitha Pulikkot



Department of Biochemistry

Research Profile

Professor & Chair:

Prof H Raza

Professors:

Prof O El-Agnaf

Prof S Galadari

Associate Professors:

Dr A Al-Marzouqi

Dr M J F Cabezudo

Assistant Professors:

Dr S Ansari

Dr M Emdadul Haque

Dr F Mustafa

Dr S Al Qassim

Medical Research Specialist:

Dr M Ardah

Dr C Jisha

Ms A John

Mr M Qureshi

Dr F T Thayyullathil

Medical Research Technician:

Mr A Qader

Medical Secretary

Ms W Al Shamisi

The diverse research interests of the Department of Biochemistry include investigation of the mechanisms of transcriptional regulation, the molecular basis of diseases induced by retroviruses, the relationship of signal transduction pathways to disease, the effects of environmental agents on immune response, role of oxidative stress and mitochondrial dysfunction in diseases, molecular mechanisms of cellular defense, neurodegenerative diseases particularly Parkinson's disease. Our main focus is on elucidation of mechanisms of gene regulation, epigenetic regulation and chromatin remodeling, molecular carcinogenesis, molecular basis of neurodegeneration disorders, molecular immunotoxicology, anticancer and antidiabetic effects of chemicals and drugs.

Prof. Sehamuddin Galadari is working, at present, as an advisor for research in the Jalila Foundation, Dubai and Dr Ahmed Al-Marzouqi as Director of Research & Funded Projects in the Office of the DVC (Research & Graduate Studies) at UAEU. Prof. Conlon left the college in April 2014. Two new faculty members have joined our department this year. Dr Suraiya Ansari from New York Neural Stem Cell Institute and Dr Saif Al Qassim, a National faculty member who completed his PhD in 2014 from Johns Hopkins School of Medicine, Baltimore, MD, USA.

Our graduate program in Biochemistry and Molecular Biology (M.Sc. and Ph.D.) at the College of Medicine and Health Sciences is a multi-disciplinary program which provides students with a

foundation in Biochemistry and Molecular and Cellular Biology as well as intensive state-of-the-art laboratory research training.

Molecular toxicology and cellular oxidative stress (Prof. H. Raza)

Research Interest

My research is mainly focused on mitochondrial dysfunction and oxidative stress caused by chemicals, drugs, diseases (mainly in diabetes and cancer) and toxicity. My studies include in vivo and in vitro models. In addition, I am also investigating the mechanisms of molecular/cellular defense against toxicity and/or diseases by studying the effects of known therapeutics, phytochemicals and dietary antioxidants on oxidative stress related complications.

Research Highlights

Our recent study has demonstrated that NSAIDs induce oxidative stress and alter mitochondrial bioenergetics and redox homeostasis. Altered mitochondrial functions and glutathione-dependent redox homeostasis have been implicated in toxicities and diseases including cancer, diabetes, and cardiovascular disorders. We have identified molecular and metabolic targets of cytotoxicity in cancer and non-cancer cell lines. Our study has also shown that the restoration of antioxidant GSH pool by N-acetylcysteine (NAC) has protective effects on drug and bacterial endotoxin LPS-induced toxicities.

We are also investigating the mitochondrial functions, oxidative stress and drug metabolism in cardiac and other tissues from type 1 and type 2 diabetes using in vivo rat models. We have shown that tissues from type 2 diabetic / obese rats have increased oxidative stress and altered mitochondrial function. We are continuing to study further the mechanism of metabolic and oxidative stress in type 1 and type 2 diabetic rats and to elucidate the mechanism of drug actions in preventing the complications of diabetes. Our studies have resulted in a number of publications in peer reviewed journals.

Protein misfolding and neurodegenerative diseases (Prof. O.M.A. El-Agnaf)

Pathological studies in human neurodegenerative diseases such as Alzheimer's disease (AD), Parkinson's disease (PD), dementia with Lewy bodies (DLB), the prion dementias (e.g. mad cow disease and its equivalent, CJD, in humans),

British dementia and Huntington's disease, have revealed abundant protein deposits ('amyloid') in the affected neurons. There is now substantial evidence from molecular genetics, transgenic animal and the biochemical studies to suggest that the conversion of these amyloid proteins from soluble monomers to aggregated, insoluble forms in the brain is a key event in the pathogenesis of these diseases.

Research Focus

Current research efforts in the laboratory cover the following topics: (1) Elucidating the mechanism of protein aggregation and deposition and their potential link to neurodegeneration and cell loss; (2) Developing novel techniques for detecting amyloid aggregates, particularly in their early stages; (3) Designing peptides and small molecule inhibitors of α -synuclein and β -amyloid aggregation and toxicity as potential novel therapeutics for Parkinson's disease and Alzheimer's disease respectively; (4) Discovering novel biological markers for Alzheimer's and Parkinson's disease; (5) Developing novel MRI- and PET-imaging compounds for Parkinson's disease. These projects are supported by several international funding agencies and foundations, including the National Research Foundation UAE (Dubai), Hamdan Foundation for Medical Research (Dubai), UAE University (Al Ain), Parkinson's disease Foundation (NY), and Michael J Fox Foundation for Parkinson's Research (NY).

Research Highlights

Identification of compounds that inhibit or reverse the aggregation process of α -synuclein protein may represent a viable therapeutic strategy against Parkinson's disease and related disorders. Ginseng is a well-known medicinal plant that has been used in East Asia for more than two thousand years to treat several conditions. It is now understood that the pharmacological properties of ginseng can be attributed to its biologically active components, the ginsenosides, which in turn have been shown to have neuroprotective properties. We therefore sought to determine for the first time, the potential of the most frequently used and studied ginsenosides, namely Rg1, Rg3 and Rb1, as anti-amyloidogenic agents. The effect of Rg1, Rg3 and Rb1 on α -synuclein aggregation and toxicity was determined by an array of biophysical, biochemical and cell-culture-based techniques. Among the screened ginsenosides,

only Rb1 was shown to be a potent inhibitor of α -synuclein fibrillation and toxicity. Additionally, Rb1 exhibited a strong ability to disaggregate preformed fibrils and to inhibit the seeded polymerization of α -syn. Interestingly, Rb1 was found to stabilize soluble non-toxic oligomers with no β -sheet content, that were susceptible to proteinase K digestion, and the binding of Rb1 to those oligomers may represent a potential mechanism of action. Thus, Rb1 could represent the starting point for designing new molecules that could be utilized as drugs for the treatment of Parkinson's disease and related disorders.

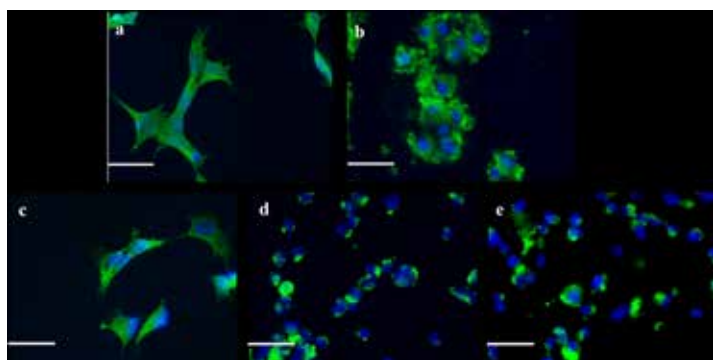


Figure The effect of the ginsenosides on the toxicity induced by the aggregates of α -syn. Immunocytochemistry against α -syn of BE(2)-M17 cells. A. The cells were either non-treated or treated for 48 hours with 5 μ M of B. aged α -syn alone, or with ginsenoside C. Rb1, D. Rg1, E. Rg3. at a molar ratio of aged α -syn: compound 1:4. Scale bar 30 μ m.

Neuro-immune regulation of the immune response (Dr. Maria J. Fernandez-Cabezudo)

Research Interest

The main research interest in my lab is to investigate the potential mechanism by which the cholinergic nervous system modulates the immune response in infectious episodes and autoimmune diseases. We have demonstrated that the inhibition of acetylcholinesterase (AChE) enzyme, which results in increased cholinergic pathway activity, modulates anti-bacterial immune responses, leading to increased protection against a lethal infection. The exact mechanisms by which this occurs, as well as the cellular and molecular targets underlying this phenomenon, is the focus of investigation in my laboratory. The potential utilization of the cholinergic anti-inflammatory pathway to modulate the development of autoimmune diseases, such as diabetes, is also under investigation.

A second area of focus in my laboratory is on the identification of novel biomarkers in breast cancer. In collaboration with colleagues in the Department of Medical Microbiology and Immunology and Tawam Hospital, we are carrying out a study to correlate expression of an intracellular protein involved in gene regulation in human breast cancer with the degree of susceptibility to chemotherapeutic drugs.

Research Highlights

It has been suggested that Methylation-Controlled J (MCJ) protein expression in breast cancer cell lines is directly correlated with sensitivity to chemotherapeutic drugs. Therefore, we investigated the potential correlation between the expression level of MCJ protein and clinical response to chemotherapy, in a small cohort of breast cancer patients. Our findings indicated that good clinical response and low RCB (Residual Cancer Burden) score directly correlated with high levels of MCJ expression. Regression analysis showed that MCJ expression, and no other variable, was an independent predictor of clinical response in this cohort, suggesting that the expression of MCJ protein might be a useful indicator to predict the response to chemotherapy.

Sphingolipid signaling and its role in cancer therapy (Prof. Sehamuddin Galadari)

Sphingolipids are bioactive molecules that regulate various aspects of cellular proliferation and survival. Modulations of sphingolipids are implicated in the mechanism of action of various anticancer chemotherapeutics. Ceramide and sphingosine are the central molecules of sphingolipid metabolism, that mediate anti-proliferative responses, such as cell growth inhibition, apoptosis induction, senescence modulation, endoplasmic reticulum stress responses and/or autophagy regulation. Prevention of human cancer development depends on the integrity of a complex network of defence mechanisms that help cells to respond to various stress conditions. A key player in this network is ceramide, which can selectively destroy wide variety of cancer cells via programmed cell death such as apoptosis, autophagy and or necrosis. By inducing efficient growth inhibition and cell death, ceramide eliminates cancer cells and prevents the development of human malignancies. These functions of ceramide determine the efficacy of several anti-cancer therapies, as they are capable of inducing ceramide generation.

However, the tumor suppressive activity of ceramide is hampered by malfunction of its many modulators such as, ceramidases, sphingomyelinases, and glucosyl ceramide synthase. These enzymes govern ceramide's tumor suppressive activity by acting upstream and/or downstream of ceramide biosynthetic pathway.

Autophagy (Type II programmed cell death) was initially identified as a survival mechanism characterized by the degradation of long-lived proteins and cytoplasmic organelles through lysosomal machinery, the product of which are recycled to generate macromolecules, and ATP so as to maintain cellular homeostasis. However, several recent studies suggest that autophagy can also function as a cell death mechanism, and hence, interest in autophagy has been renewed amongst cancer biologists. Several studies have implicated the role of ceramide network in the induction of autophagic cell death.

Based on this information, Cell Signaling Laboratory is focusing on the molecular characterization of sphingolipids in cancer pathway, especially that of ceramide and sphingosine. The goal of our research is to elucidate how ceramide and its metabolite sphingosine communicate and signal in response to anti-cancer treatment. We use both biochemical and genetic approaches to study the whole family of related sphingolipids that are involved in the tumor suppression.

Our laboratory focuses on the following research areas:

1. Elucidating the tumor suppressive functions of ceramide
2. Characterizing the role of ceramide in autophagy
3. Development of cancer therapy through adjustment of sphingolipid metabolism in order to accumulate "tumor suppressor lipid" and to decrease "tumor promoting lipids" by using phytochemicals

Molecular Basis of Pathogenesis (Dr. Farah Mustafa)

Farah Mustafa's main research interest lies in the area of molecular basis of diseases induced by retroviruses. These single stranded RNA viruses are well-known pathogens that cause debilitating diseases such as immunodeficiency syndromes and a variety of cancers in both man and animals. Her recent focus is on studying the viral etiology of human breast and other cancers. The mouse mammary tumor virus (MMTV) is a retrovirus that causes both breast cancer and leukemia in mice. However, it is increasingly being detected in human breast and other cancers. Controversy surrounds whether this virus has any role to play in human cancer(s). Her goal is to systematically study how this virus, if at all, may be involved in human breast and perhaps other hormonally-induced and other cancer and eventually what role could it be playing in their induction. Additionally, she is

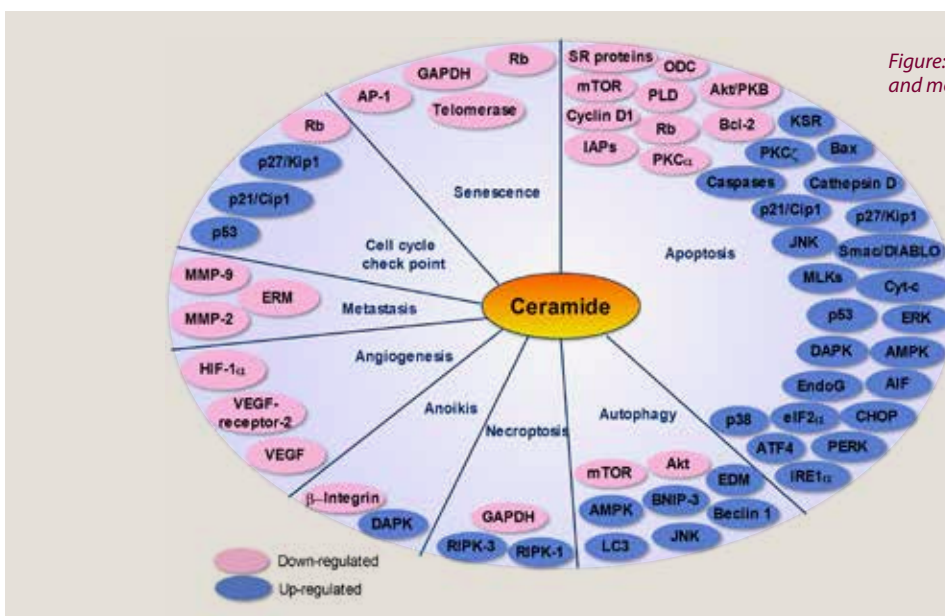


Figure: Tumor suppressive functions and molecular targets of ceramide

interested in the mechanism of MMTV-induced tumors in the host, and regulation of basic steps in MMTV replication and gene expression.

Research Highlights

- Investigating the presence of MMTV-like sequences in the UAE normal and cancer population
- Studies on molecular aspects of MMTV-induced oncogenesis including investigations into the ability of MMTV to code for miRNAs
- Characterization of cis-acting RNA sequence motifs that affect retroviral replication and pathogenesis

Study the function of Parkinson's disease associated genes (Dr. M. Emdadul Haque)

The goal of my research is to investigate the function of Parkinson's disease (PD) associated genes. The vast majority of the PD cases are sporadic. However, several familial forms of PD associated genes have been identified which include, α -synuclein (SNCA), Parkin, PINK1, DJ-1 and LRRK2. In addition to these genes, there are several other genes and regulatory elements that accelerate the risk of developing PD in certain individual. These genes are beginning to provide insight into important mechanisms underlying degeneration in PD. Therefore, recapitulation of these genes mutations in model systems have provided powerful tools for studying the underlying mechanisms of PD and will help to develop more appropriate/effective treatments for the disease.

Research Highlights

1. Study the regulation of Parkinson's Disease linked gene, PINK1 by Novel Mitochondrial m-AAA Protease, AFG3L2.
2. Understanding the Role of Glucocerebrosidase (GBA) in drosophila model of Parkinson's disease and its interaction with α -synuclein.
3. Testing the neuro-protective effect of Novel Medicinal Compounds in animal model of Parkinson's disease.

Mechanisms of Transcriptional Regulation in Chromatin (Dr Ahmed Al Marzouqi)

The research in my laboratory is focused on understanding the mechanisms of action of the protein complexes that regulate gene expres-

sion by modifying the structure of chromatin. In eukaryotes, the compaction of DNA into the nucleus inhibits the access of factors to DNA which leads to the repression of many important cellular processes required for maintenance and growth of the cell. Many studies in the past few years have described conserved protein complexes whose function is to modulate the access of transcription factors to regulatory regions of genes relieving chromatin-mediated repression. The action of these complexes that are able to overcome the repressive effects of chromatin is an important step in the regulation of eukaryotic gene expression.

Specifically, the overall goals of my research are to understand how certain proteins can regulate gene expression by modifying the structure of chromatin or interacting with its components. We are interested in how different types of chromatin modifying proteins work in turning genes on or off. We are also interested in studying how chromatin misregulation contributes to cancer development and could be helpful in finding potential cures for it in the future.

Below are two areas of research focus in my laboratory:

A. Physical and Functional Interactions between the Various Chromatin-Modifying Complexes. The aims of this line of research are to gain insight into the mechanisms that underlie the interactions between the different types of chromatin modifying complexes (i.e. histone deacetylase (HDAC) complexes, and the SWI/SNF ATP-dependent chromatin remodeling complex). We are particularly interested in investigating how these complexes communicate with each other and work together to exert their combined effect towards gene regulation.

We have previously shown that acetylation of nucleosomal array templates by histone acetyltransferase (HAT) complexes stabilizes SWI/SNF binding to promoter nucleosomes after the dissociation of the activator. Many chromatin-modifying complexes, including SWI/SNF and SAGA, contain highly conserved bromodomains that bind to acetylated lysine residues in histone N-terminal tails in vitro. Later, using immobilized template assays, we have shown that the Swi2/Snf2 and Gcn5 bromodomains play important roles in the anchoring of the SWI/SNF and SAGA complexes to acetylated promoters, respec-

tively. More recently, we have demonstrated the requirement of the Swi2/Snf2 bromodomain for the functional activity of the complex on SAGA-acetylated nucleosomes. These studies illustrate a novel and significant role of the Swi2/Snf2 bromodomain in remodeling of acetylated promoter nucleosomes and in displacing SAGA from promoters.

B. Identification and Characterization of Novel ATP-Dependent Chromatin Remodeling Complexes. Phylogenetic analysis shows that chromatin-remodeling proteins share several common features including the presence of a distinct ATPase domain. Based on sequence homology to this domain of the Swi2/Snf2 subunit of the SW/SNF, we have recently identified new candidate remodeling proteins. With purified complexes in hand, a growing panel of in vitro and in vivo assays, a new wealth of knowledge regarding the mechanisms of actions of many chromatin-remodeling complexes, and the ease of genetic manipulations in yeast, we are now poised to carry out mechanistic biochemical and genetic investigations of their functions and their inter-relationships. In this part, our focus is to initially identify and biochemically characterize these potential novel chromatin remodelers, followed by studies on their mechanisms of action in gene regulation. The fact that similar and several chromatin remodeling complexes are present across the eukaryotic kingdom, from unicellular yeast to humans, supports the notion that they were maintained in evolution due to their important role in the regulation of gene expression. Identification, characterization, and investigations of action of novel chromatin remodeling complexes is very exciting and could lead to the identification of drug targets and the development of potential drugs to cure human disease specifically cancer in the future.

The Fun30 binds DNA and chromatin. A, Fun30 binds to nucleosome arrays efficiently. Immobilized G5E4 (either DNA or reconstituted into nucleosomal arrays), generated as described under "Experimental Procedures," was incubated with an equal amount of Fun30 (lanes 7–10) or the SWI/SNF complex (lanes 2–5, as control) based on anti-TAP Western blotting normalization. The amount of bound protein (SWI/SNF complex or Fun30) was determined by separating the supernatants (S) from the beads

(B), washing the beads, and running them on a 12% SDS gel followed by Western blot analysis using the anti-TAP antibody for detection of the proteins.

Gene Expression Regulation of Stem Cell Fate (Dr. Suraiya Ansari)

A defining feature of stem cells is their ability to continuously maintain a stem cell population (self-renew) while generating differentiated progeny. Thus, stem cells are faced with a uniquely difficult task: to avoid cell cycle exit and differentiation, and to avoid uncontrolled proliferation and tumor formation. How stem cells walk this developmental tightrope is an extremely interesting question. Embryonic stem cell (ESC) differentiation has the potential to be instrumental in cell based therapies, in vitro disease modeling and chemical screens. To fulfill those expectations, ESCs have to be differentiated at high efficiency to disease relevant cell types, either by the application of extracellular signals or direct programming by forced expression of transcription factors (induced pluripotent stem cells or iPSCs). They can be cultured continuously in their pluripotent state, and can also be induced to differentiate into cell types from all three germ layers (ectoderm, mesoderm and endoderm). Because of these unique properties, ES cells are of great interest to both basic and clinical research. They can be used as a model system to study the mechanism of pluripotency and fate-specification during early mammalian development, and they can also be used to derive various types of cells for disease modeling, drug discovery, and the development of cell-based therapies. Discovering how stem cells are maintained in a multipotent state and how their progeny differentiate into distinct cellular fates is a key step in the therapeutic use of stem cells to repair tissues after damage or disease.

Research Highlights

Because of their pluripotent and robust growth characteristics, embryonic stem cells have been used to model neurogenesis and to generate large quantities of functional neurons for both in vitro and in vivo studies.

The current goal of my research is to understand how extracellular signals and transcription factors control cell fate and apply that knowledge to differentiate ESCs into disease relevant neuronal cell types. I use published protocols

to differentiate the ES cells toward neuronal fate. In these in vitro models, neural differentiation recapitulates key events that occur in early embryo development, including induction of multipotential neuroepithelial cells that form neural tube-like structures, patterning of region-specific neural progenitors, and generation of neurons and glia with particular transmitter or functional phenotypes. Our target is to identify transcriptional and post-transcriptional regulatory mechanisms that control the expression of genes involved in cell division at different stages of embryonic neurogenesis.

Another objective of my research is to study the mechanisms of ES cell differentiation into hepatocyte like cells. Several groups have recently described protocols that can induce the differentiation of cells with gene expression and functional profiles that closely resemble that of hepatocytes using both hESCs and hiPSCs. Most of the approaches that have been described have successfully exploited data generated from decades of research into the molecular mechanisms that control hepatocyte differentiation during embryogenesis. However no protocol has successfully generated hepatocytes that can fully replace the parenchymal cells of the mouse liver in the manner that primary human hepatocytes are capable of. It is therefore of prime importance to further the understanding of molecular mechanisms that control cell fate during development as well as hepatic metabolism. Role of transcriptional coregulators are still poorly characterized in the metabolic regulation of pluripotency and cell differentiation. In this direction, my research focus is on Mediator complex, a Multi-subunit transcriptional coactivator. We have identified a specific subunit of this complex in the expression of genes involved in energy metabolism. The role of energy metabolism in stem cell fate determination is only beginning to emerge. Understanding the transcriptional regulatory mechanisms in the metabolism and stem cell fate in the process of hepatogenesis will lead to identify molecular targets for the efficient generation of functional hepatocytes generated from human ESCs and iPSCs.

Modulation of MICAL Activities in Axon Guidance (Dr Saif Al Qassim)

Proper axon guidance, the process by which growing axons are 'guided' to their target by extracellular cues, is vital for appropriate neuronal

growth and development, rewiring, fasciculation/defasciculation, and nerve regeneration after injury. Semaphorin-mediated repulsive axon guidance requires the action of MICAL (Molecule Interacting with CASL), and leads to cytoskeletal rearrangement in the growth cone of the neuron. MICAL is a large multidomain redox enzyme that combines a catalytic monooxygenase domain with three protein-protein interaction domains. These domains are: a Calponin Homology domain, a LIM domain, and a coiled-coil ERM domain. Through its redox activity, MICAL has been shown to oxidize actin filaments, leading to their depolymerization.

My research interests lie in unraveling the function of MICAL's non-redox protein-protein interaction domains, at the molecular level, in the context of semaphorin-mediated signaling and actin modification. Although many genetic and cell-based studies have been performed to elucidate MICAL function, the role and means by which the MICAL protein-protein interaction domains are involved in modulating MICAL activities are unclear. These questions will be answered using a combination of structural, biophysical, and biochemical techniques.

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RESEARCH GRANTS

CMHS Research Grants

Prof H Raza [PI]
Altered metabolic stress in type 2 diabetic rat tissues.

Prof S Galadari [PI]
Elucidating the Molecular Mechanisms of Anti-leukemic Potential of Thymoquinone, the Main Active Constituent of *Nigella sativa*

Haque ME [PI].
Testing the neuro-protective effect of Small Chinese Medicinal Compounds in animal model of Parkinson's disease.

Ansari S [PI]
Transcriptional regulation of human liver development and metabolism by Mediator complex: use of hES and hiPS cell derived hepatocytes as model. 2014-15.

Terry Fox Cancer Research Funds:

Prof H Raza [PI]
Alterations in mitochondrial bioenergetics and glutathione metabolism by NSAIDs (non-steroidal anti-inflammatory drugs): implications in cancer prevention and treatment (Final year-closing).

Prof S Galadari [PI]
Targeting Autophagy: A Novel Sanguinarine Based Chemotherapy for Malignant Gliomas.

Dr A Al-Marzouqi [PI]
Functional Analysis of the Snf2-family Protein IRC5 in DNA Repair and Cancer.

Sheikh Hamdan Medical Research Award

Prof H Raza [PI]
Elucidation of the molecular mechanisms and metabolic changes in inflammation and diabetes: Antidiabetic and anti-inflammatory effects of non-steroidal anti-inflammatory drugs (NSAIDs). (Final year).

Dr Fernandez-Cabezudo M J [PI]
Neuro-immune modulation of inflammatory diseases: potential role in the amelioration of diabetes (Continuation).

Prof S Galadari [PI]
Novel ceramide-based chemotherapy for prostate carcinoma.

Drs Mustafa F (PI), S Al Marzooqi, A Albawardi.
Investigation of Mouse Mammary Tumor Virus (MMTV) Presence in the UAE Population: A Putative Viral Agent in Human Breast Cancer. [2013-2015].

Sheikh Rashid Award for Scientific Excellence

Dr S Alqassim [PI]
Modulation of MICAL-1 enzymatic activity.

Al Jalila Foundation
Prof S Galadari [PI]
Elucidating the molecular signaling mechanism(s) of autophagy mediated tumor suppression by curcumin in human malignant glioma.

National Research Foundation/ UAE University Research Office

Prof S Galadari
Investigating the role and mechanism of Par-4 cleavage in tumor suppression.

Dr Fernandez-Cabezudo M J [PI]
Neuro-immune modulation of inflammatory diseases: potential role in the amelioration of diabetes (Continuation).

Dr F Mustafa [PI], S Almarzooqi, A S Albawardi.
Characterization of Mouse Mammary Tumor Virus (MMTV) in Human Tumors in the UAE: Is MMTV a General Biological Carcinogen? [2013-2015].

Dr ME Haque [PI]
Role of Glucocerebrosidase (GBA) in drosophila model of Parkinson's disease and its interaction with α -synuclein.

Dr A Al-Marzouqi [PI]
Molecular Mechanisms of Gene Regulation through Epigenetics: the Role of Chromatin Remodelers in Cancer"

Prof O El -Agnaf [PI]
Application of conformation-specific antibodies to biomarker development for Parkinson's disease. 2014 – 2016.



Prof O El -Agnaf [PI]
Novel conformation-specific
antibodies for immunotherapeutic
intervention in Parkinson's disease
and related disorders. 2014 – 2016.

**Emirates Foundation, Abu
Dhabi, UAE**

Dr A Al-Marzouqi [PI]
The Cooperation and/or Competi-
tion between the ATP-dependant
Chromatin-Remodeling Protein
SWI/SNF and the Histone Acetyl-
transferase SAGA in Binding to
Nucleosomes.

**UAE University Start-Up Grant.
UAEU, Al Ain, UAE**

Dr F Mustafa [PI], Prof TA Rizvi
Investigations into the Mechanism
of Replication, Gene Expression,
and Oncogenesis Using the Mouse
Mammary Tumor Virus Model
System. [2013-2016]

Dr ME Haque [PI]
Study the molecular pathways
of neurodegeneration and drug
targets for treatment of neurode-
generative disorders.

Alzheimer's Drug Discovery Foun-
dation (NY, USA)

Prof O El-Agnaf [PI]
Testing a combination of CSF
biomarkers for discriminating
dementia with Lewy bodies from
other neurodegenerative disor-
ders and controls. 2013 – 2014.
[Continuation]



2014

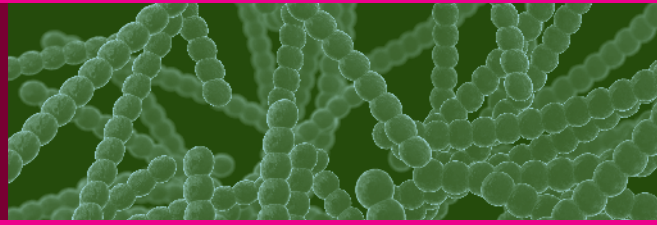
Biochemistry



Standing left to right:
M Qureshi, M. Ardah,
F T Thayyullathil, ME Haque,
AQ Hago, S Al Qassim, H Raza,
S Galadari, A Al-Marzouqi

Seated left to right:
A John, J Chalisery, F Mustafa,
S Ansari, M Fernandez-Cabezudo,
W Al-Shamisi, TV Basheer

Department of Family Medicine



Research Profile

With a research focus on patient-physician communication, health education and learning portfolios, the Department of Family Medicine has been active in advancing the standards of patient care regionally. The Department of Family Medicine takes the lead in mixed methods studies and innovative action research projects that are tightly linked to improving quality within the project lifecycle. This year we continue our agenda in translational research and support the development of faculty members in collaborative projects with local healthcare service providers.

Associate Professor & Chair:

Dr EAM Prinsloo

Assistant Professor:

Dr C Clor

Dr M J Hashim

Dr MAB Khan

Dr U Lashari

Medical Research Specialist:

Ms H Mustafa

Medical Secretary:

Ms Amel Al Murri

Faculty Profile

Engela Prinsloo is an Associate Professor who is an International member of the Editorial Board of the South African Family Practice Journal. She has reviewed 5 articles for journals including the former, the African Journal of Primary Healthcare & Family Medicine and Springer Plus online journals. She participated in teaching activities, research projects and a CME accredited research symposium to support and build capacity in the Al Ain Family Medicine Residency program. She is a member of the HAAD accredited Ambulatory Health Services Research committee and the Al Ain Family Medicine Residency Research committee.

Jawad Hashim is an Assistant Professor with research interests in health systems improvement, health promotion, and medical informatics. With expertise in statistical data analysis and multivariate modeling, he collaborates with research across disciplines. He was recently an invited speaker at the 2nd Annual Child Mental and Behavioral Health Conference 2015, in Abu Dhabi.

Usman Lashari is an Assistant Professor and co-ordinator for postgraduate residency program in Family Medicine in Al-Ain. He was part of Postgraduate Residency Program in general practice in London. He has worked as a community dermatologist in London before joining UAEU. He is an accredited clinical supervisor and trainer and clinical appraiser for London Deanery.

Moienudeen Khan joined UAE University in April 2013. He initially completed his post graduate basic specialist training from Royal London Hospital working in different pediatric sub specialties for more than 3 years. Later on Moien did his postgraduate training in family medicine. Dr. Moien is passionate about treating diabetes in the community. To complement his special interest he did a Master's degree in diabetes from the United Kingdom. He regularly participates in international conferences on diabetes care.

To provide holistic care to his patients while working as a family physician he developed several interests in dermatology, occupational medicine, gynecology and family planning backed by advanced training and postgraduate degrees in these specialties in United Kingdom. Moien is an accredited clinical supervisor for postgraduate trainees in family medicine from Welsh and London Deanery. Moien also was the clinical lead at his practice for training Kings College medical students in the community. His research interests include diabetes care.

Faculty Research Profile

Engela Prinsloo is involved in ongoing research exploring the use of reflective portfolios, tutor support and feedback to students in a family medicine clerkship. The value of e-portfolios to teach and assess ethics, professionalism and the hidden curriculum is the current focus. This research is extended to pre-medical and pre-clinical teaching. Portfolio use in residency programs is also ongoing. Dr. Prinsloo supported residents to conduct, complete and publish a study on the use of the electronic medical record system (EMR) in the work environment.

Jawad Hashim has a research interest in improving patient care by providing physicians with clinical decision support at the point-of-care. Clinical decision support includes treatment

guidelines as well as warning alerts such as for drug-drug interactions during prescribing in an electronic health record system. His research is directed at increasing ease of access to pertinent medical literature during patient care with the goal of evidence-based health care delivery. Areas for improving clinical decision support uncovered in his research include human-computer interface design issues specific to medical student learning. He is also exploring the role of paper-based clinical decision support as an alternative strategy to improve medical decision-making. Dr. Hashim provides statistical and research study design guidance within the College of Medicine as well as for local healthcare centers such as the Sheikh Khalifa Medical City.

Usman Lashari has joined UAEU in March 2012. He was part of Postgraduate Residency Program in general practice in London. He has worked as a community dermatologist in London before joining UAEU. He is an accredited clinical supervisor and trainer and clinical appraiser for London Deanery. His main areas of interest are Postgraduate Medical Education and Dermatology in Primary Care. He is a Fellow of American Academy of Dermatology.

Moienudeen Khan Basith joined UAEU in April 2013. He was the clinical lead for medical education and Diabetes while practicing in London. His main areas of interest are looking at management of Type 2 Diabetes and medical education. To continue his ongoing quest for diabetes research, Moien is keen in collaborating with other researchers in other departments and organizations.

Casey Clor is an Assistant Professor with research interests in geriatrics, preventive medicine and obesity. His recently completed projects include a survey of geriatric care guidelines in the region and the availability of geriatric care applications for smart phones and tablets.

Projects Profile

The current research focus of members in the department addresses pertinent health concerns of the UAE population including the relation between vitamin D deficiency and eczema. Impact of the changes in the health care industry with use of an electrical medical record system is explored and alternatives in

decision making tools for health care providers aiming to improve quality of care are addressed. Innovative methods to teach and assess ethics and professionalism are objectives of the ongoing portfolio research project. Studies initiated earlier on online health education are still in progress. We continue our agenda in translational research and support the development of faculty members in collaborative projects with local healthcare service providers.

On-going work

Interactive electronic portfolios to enhance students' reflective practice and address ethics, professionalism and the hidden curriculum

A four cycle reflective 'plan, act, revise,' action research study involving faculty and students on reflective portfolios were conducted between 2009 and 2013. The conceptual framework which resulted from this study is now explored in ongoing research on the use of e-portfolios and e-teaching in the "Professionalism, ethics and medical Law" curriculum. The focus is on developing the ideal model for teaching professionalism and addressing the hidden curriculum.

Research and Academic Collaboration

Dr. Adriana Prinsloo is an International member of the Editorial Board of the South African Family Practice Journal and a reviewer of articles for the African Journal of Primary Healthcare & Family Medicine, South African Family Practice Journal, and Springer Plus online journals. During the past year she has reviewed 8 articles for publication in these journals.

Assistant Professor M Jawad Hashim is engaged in research on health education and health informatics. Dr. Hashim's research interests include clinical decision support for physicians to provide evidence-based guidelines at the point-of-care. In addition, he has on-going collaborations with researchers in other departments as well as PhD students for multivariate modeling and statistical analyses.



CLINICAL DECISION SUPPORT CONTENT DEVELOPMENT FOR COMMON CONDITIONS IN PRIMARY CARE

Baraa I Mohamed, Fatima M Y H Al Ameri, Jawaher R S Al Zeyoudi, Nour B O S Alkindi, Shamma Y F A A Al Khaja, **M Jawad Hashim**

¹ College of Medicine and Health Sciences, United Arab Emirates University

UAEU College of Medicine and Health Sciences

United Arab Emirates University



Introduction

Clinical decision support (CDS) tools are not frequently implemented in healthcare settings such as clinics and hospitals (1). Without access to updated guidelines at the point-of-care, physicians and other healthcare professionals often have to rely on memory recall to make clinical decisions.

Objectives: The aim of this research project is to develop a CDS system. Specific objectives for this study are to develop and test summaries of clinical guidelines in a format that is optimal for clinicians.

Methods

Research ethics committee approval was obtained (AAMDHREC 13/64). CDS tools were developed using a planned, iterative cycle with 3 phases: Firstly, compile pre-existing guidelines from established sources, critically appraising each using selected items from the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument. Followed by design of CDS tools that summarize pertinent points especially those that have a strong evidence-based recommendation or are established quantitative criteria. Finally, refine each summary using a collaborative approach to build concise, usable CDS tools with a focus on usability and rapid access to information.

Results

CDS tools for selected topics were developed using an iterative compile-design-refine cycle. The process was to compile guidelines summaries on common conditions encountered in primary care by physicians seeing patients in clinics. An attempt was made to restrict the length of each summary to one A4 page to improve conciseness and a focus on high-yield evidence-based recommendations.

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Table 1: Guideline summaries developed

Topic	Guideline source	Number of guidelines developed	Number of guidelines tested	Number of guidelines implemented
Respiratory	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Cardiovascular	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Diabetes	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Hypertension	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Obesity	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Depression	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1
Alcohol use	World Health Organization (WHO) Guidelines for the management of acute lower respiratory infections in children	1	1	1

Figure 1: A guideline summary



Conclusions

CDS tools can be developed for common medical conditions in an iterative cyclical process. Further research is needed to test these materials in healthcare settings.

Acknowledgments:

Funding support from UAEU Clinical Faculty grant MFC/13/20.

Articles in Peer-reviewed Journals

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Khan G, Hashim MJ. (2014). Global burden of deaths from Epstein-Barr virus attributable malignancies 1990-2010. *Infect Agents Cancer*, 9(1):38.



Proceedings, Conferences, Invited Lectures, Web Sites and Others

Clor C. (2014). Geriatric apps for healthcare professionals- what is available for the Apple iPod/iPhone (ios) and the Android devices? The 9th International Medical Education Conference (IMEC), UAE.

Hashim MJ. (2014). Interaction between primary care and child mental health - a call for action. Invited speaker: 2nd International Child Mental and Behavioral Health Conference, Abu Dhabi, UAE.

Hashim MJ. (2014). Real World Experiences of Digital Health. Invited expert panelist: Health and Environment Conference in the Middle East, Dubai, UAE.

Hashim MJ. (2014). A new teaching method. Miniworkshops – Int Science Education Conference, Singapore.

Hashim MJ. (2014). Universal advance directives for terminally

ill cancer patients. Emirates Oncology Conference, Abu Dhabi, UAE.

Al-Khatiri FS, Al-Neaimi MA, Al-Mesmari SO, Al-Nuahi SO, Prinsloo EAM. (2014). A Descriptive Study of Mycobacterium Tuberculosis in Al-Ain Medical District 2009-2010. Poster presentation: International Family Medicine Conference, Dubai, UAE.

Lashari U. (2014). Pitfalls of using Specialists for Standard setting in Modified Angoffs' method, APMEC, Singapore.

Prinsloo EAM, Hashim MJ, Major S, McLean M. (2014). A hybrid teaching model for medical education: reflective e-portfolios, face to face contact and student centered interactive group learning. Oral presentation 8th International Technology education and development conference, Valencia, Spain.

Major S, Prinsloo EAM, Kershaw G, Hashim MJ. (2014). Reflective writing and medical students' understanding of professionalism in practice in relation to GMC's Domains of Good Medical Practice. Oral presentation. Society for Academic Primary Care (SAPC) London & South East Madingley Hall).

Mohamed B, Al Ameri F, Al Zeyoudi J, Alkindi N, Alkhaja S, Hashim MJ. (2014). Clinical decision support content development for common conditions in primary care. The 9th Int Scientific Conference for Medical Students in the GCC Countries. Al Ain, UAE.



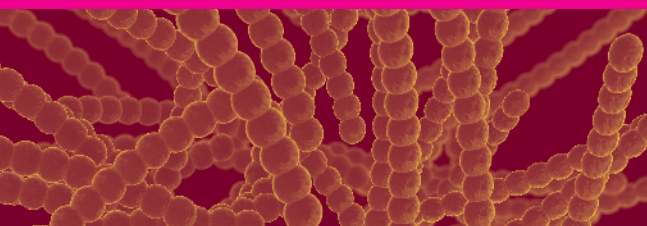
2014

Family Medicine



Standing left to right:
MJ Hashim, M Khan, U Lashari,
C Clor

Seated left to right:
A Al Murri, EA Prinsloo, H Mustafa



Institute of Public Health

Research Profile

Department Chair:

Prof Tar-Ching Aw¹

Professor:

Prof N Nagelkerke²

Associate Professor:

Dr F Al-Maskari

Dr I Blair³

Dr M Grivna

Dr S Shah

Dr M Sheek-Hussein

Assistant Professor:

Dr B Adam⁴

Dr L Ahmed⁵

Dr T Loney

Dr A Oulhaj

Dr F Yunus⁶

Medical Research Specialist:

Ms I Elbarazi

Mr F Aziz⁷

Academic Assistant:

Dr M El Sadig

Medical Secretary:

Ms A Kaljee

In 2013, staff and faculty at the Institute of Public Health continued to build on their track record in research. Research successes included receipt of a number of grants following competitive bids, securing continuation of research funding from grant-awarding bodies and an increase in the number of publications by faculty and staff.

Staff of our institute continued to build on our good track record of research activity and research output. We now have publications in a range of peer-reviewed journals, and our focus is on multi-disciplinary, community-based research. Many of the research projects in 2014 involve colleagues from different departments in the medical school, universities, and health agencies. The research areas have included epidemiological, qualitative, and other community-based studies relevant to the health concerns of the country. We have also built partnerships with international organizations and industry for the conduct of research, training, and staff and student exchange.

Some administrative changes in 2014 include the return of Prof. Tar-Ching Aw as director of the institute in August, and Dr. Tom Loney as new coordinator for the MPH and PhD programs. Our special thanks to Dr. Iain Blair for developing excellent standards for both the department and our post-graduate courses. It is primarily through his leadership that we now have the largest post-graduate program of any department in the medical school. Dr. Fatma Maskari continued to head our Zayed bin Sultan Al-Nahyan Centre for Health Sciences, spearheading efforts to obtain research funding. We congratulate Dr. Michal Grivna in his appointment as associate editor for the international journal – 'Frontiers in Public Health Education and Promotion', and Dr. Syed Shah for being selected to join the World Heart Federation Emerging Lead-

¹ Interim Dean from January to August 2014

² Departed on 31 October 2013

³ Acting Chair from January to August 2014

⁴ Joined on 2 January 2014

⁵ Joined on 17 August 2014

⁶ Joined on 24 August 2014

⁷ Joined on 16 April 2014

ers program. Dr. Tom Loney was elected Fellow of the Faculty of Occupational Medicine (Ireland) – one of the youngest recipients of this award.

Other highlights of 2014 included Dr. Yusra Obeid graduating as our first Institute of Public Health's PhD candidate, and also one of the first for the medical school. Her research was on breast cancer in Emirati women. We strengthened our WHO Collaborating Centre status (designated at the end of 2013) through responding to WHO Eastern Mediterranean Regional Office (EMRO) for provision of expertise and technical assistance in occupational and environmental health. Institute staff developed a 4-week training program in occupational health for primary care practitioners, and we are now piloting the program in Qatar, with a view to encouraging other countries in the region to deliver similar training.

Thanks to all of our research and support staff who deserve much credit for ensuring that our research efforts remain highly successful.

Research interests of Faculty and staff

Prof Tar-Ching Aw: US Board-certified occupational physician with a special interest in occupational toxicology and public health. He is a member of the international advisory board for several peer-reviewed journals, including Occupational Medicine (Oxford) and Safety & Health at Work. Prof Aw has worked closely with the WHO EMRO office in his role as designated director of the WHO Collaborating Centre for Occupational Health at UAE University. This is the only WHO center of its kind for the Middle East.

Prof Nico Nagelkerke: Senior biostatistician with a special interest in statistical methodology and infectious disease modeling. Prof. Nagelkerke departed from the Institute on 31 October 2013 but is still collaborating in research with partners at CMHS in his capacity as an Adjunct Professor.

Dr Fatma Al-Maskari: Public health physician and epidemiologist with an interest in non-communicable chronic diseases epidemiology and prevention, lifestyle and health and evidence-based medicine. She is also Director of the Zayed Center of Health Sciences.

Dr Iain Blair: Public health consultant with a

background in UK health protection. He has published articles on the surveillance and control of infectious diseases and has co-authored a textbook on health protection and several book chapters. His current research interests focus on the UAE health system, demography and the burden of disease.

Dr Michal Grivna: Public health consultant with a special interest in injury control, child, school, traffic and community safety, health promotion. His more recent research interests include injury surveillance/trauma registration and other public health issues such as tobacco addiction and HIV/AIDS prevention in the UAE. He was a founding member of the European Child Safety Alliance and the Centre for Childhood Injury Epidemiology and Prevention in the Czech Republic. Dr Grivna is a leading figure in the promotion and implementation of "WHO - Safe Community Programs".

Dr Syed Shah: Chronic disease epidemiologist with research interests in the epidemiology of cardiovascular disease, work-related injuries and mental health. His recent international research project is on cardio-vascular risk factors in children in Pakistan, Malaysia, and the UAE.

Dr Mohamud Sheek-Hussein: Public health physician and epidemiologist with an interest in infectious diseases and public health services. Dr Sheek-Hussein is previously from the Preventive Medicine Department of the UAE Ministry of Health and lately of the Health Authority of Abu Dhabi (HAAD).

Dr Balazs Adam: Preventive medicine and public health physician specialized in occupational and environmental health. His primary research areas are workplace chemical exposures, especially effects of DNA damaging agents, characterization of risks related to occupational and environmental exposures, and health impact assessment of industrial developments, programmes and policies. He is a steering committee member of the Health Impact Assessment section of the European Public Health Association.

Dr Luai Ahmed: Epidemiologist with research interests in the epidemiology and prevention of non-communicable diseases. Dr Ahmed joined the Institute on 17 August 2014 from the University of Tromsø, Norway.

1. Senior MPH Students Senior Master of Public Health students Dr Iain Blair, Dr Tom Loney, and Professor Tar-Ching Aw after completing the Advanced Epidemiological Methods Course in January 2015.



2. Global Speaker Collage (or make it into a strip in the same way as 2011) Am including collage as well as individual photos. They don't really need captions unless you think there should be Individual photos included for rework if necessary



3. Delphi Project in Abu Dhabi



4. LFOM (I) and MFOM (I) Conferment Ceremony in UAE 2014



5. LFOM (I) and MFOM (I) Conferment Ceremony in Dublin, Ireland 2014



6. Dr. Fatma receiving Zayed Center for Health Sciences Delegation



Dr. Abderrahim Oulhaj: Senior biostatistician with a special interest in the statistical modeling of diabetes and cardio-vascular complications, neuro-degenerative diseases (Alzheimer's), advanced survival analysis and mixed effects modeling. Dr. Oulhaj joined the Institute on 3 November 2013 from the University of Oxford where he worked as a senior biostatistician for almost 9 years. He also holds a Chartered Statistician (CStat) award from the Royal statistical society (RSS).

Dr Tom Loney: Occupational, environmental and public health scientist with a special interest in human performance optimization of personnel employed in challenging environments, physical activity prescription for public health, measurement issues related to human physiological monitoring, and the epidemiology of non-communicable diseases amongst migrant workers.

Mr Faisal Aziz: Research specialist in public health research with special interests in non-communicable diseases risk factors. Additional research interests include psychiatric diseases epidemiology and health systems.

Ms Iffat Elbarazi: Research specialist in public health with special interest in occupational mental and psychological health and in the promotion of women's occupational wellness. Additional research interests include clinical and community health education and promotion with a special focus on health promotion in health services.

Dr Mohamed El-Sadig: Epidemiologist and health economist, with a special interest in traffic safety and non-communicable diseases. He was a Research Director of the UAE Indoor Air, Health & Nutrition Study conducted by our department and the University of North Carolina.

Articles in Peer-reviewed Journals

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- Seminar on Safe Schools, HAAD, Abu Dhabi, 9 March 2014.
- Grivna M. (2014). Multi-agency partnerships and professionals working to achieve integrated and collaborative services. Discussion panel. The Power of Partnership – Arabian Child Leadership Institute, Dubai, 26-27 November 2014.
- Grivna M. (2014). Value of a trauma registry in preventive medicine research. 10th Middle East Trauma Conference, Dubai, 2-4 June 2014.
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- Loney T. (2014). Coping with a 'High Temperature' working environment. Industrial Hygiene and Occupational Safety Conference, Abu Dhabi, United Arab Emirates, 8-9 December 2014.
- Loney T. (2014). Suffering in Silence? Health implications of noise exposure in the workplace. The Institution of Occupational Safety and Health Middle East Occupational Health Seminar, Intersec Conference and Expo 2014, Dubai, United Arab Emirates, 20 January 2014.
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- Papadimitropoulos M, ElBarazi I, Blair I, Katsaiti S, Shah KK, Devlin N. (2014). Valuing health-related quality of life in the United Arab Emirates: an investigation of the feasibility and cultural appropriateness of using the time trade-off and discrete choice methods to generate health state values. Health Technology Assessment international (HTAi) conference, Washington DC, 16 June 2014.
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- Shah SM, Al Maskari F. (2014). Developed developing countries partnership for NCD prevention: burden among children and their parents in Al Ain, UAE. The First NCD Congress in the UAE, Dubai, 9-11 January 2014. Invited Speaker and the Winner of the first research award for the best research on non-communicable disease (NCD) in UAE and region.
- Shah SM, Hashim J, Al Maskari F, Marzouqi L, Aw TC. (2014). Developed developing countries' Partnership for NCDs Prevention: Burden among Children and their Parents in Al Ain, UAE (winner of the best research award), The first NCD congress, Dubai, UAE, 9-11 September 2014.
- Shah SM, Oulhaj A, Aziz F. (2014). Blood pressure in children: role of high altitude? (Winner of the best research award). Excellence in Paediatrics 2014, Dubai, UAE, 4-6 December 2014.
- Shah SM. (2014). Alarming trends in childhood obesity: from mountains of Pakistan to plains of United Arab Emirates. Excellence in Paediatrics 2014, Dubai, UAE, 4-6 December 2014.
- Shah SM. (2014). Parents and Children Together (PACT) for obesity prevention. 3rd Global Breastfeeding Summit and 1st Annual Bright Start Parenting Event, 7 December 2014, University of Sharjah, Sharjah, UAE.
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- Sheek-Hussein M, Hashmeyer R, Alsuwaidi AR, Al Maskari F, Amiri L, Souid AK. (2014). Seroprevalence of Measles, Mumps, Rubella, Varicella-Zoster and Hepatitis A and C in Emirati Medical Students.

The 8th Dubai International Conference for Medical Sciences, Dubai, UAE, 13-17 December 2014.



RESEARCH GRANTS

UAEU Seed Grants

Dr B Ádám (PI), Prof TC Aw, Drs T Loney, I Blair, A Elias, Ms I El Barazi, Drs X Baur, LT Budnik, JR Jepsen
Occupational chemical exposure from transport containers (OCET-CON).

Dr A Oulhaj (PI)

Use of a mixture survival cure model for predicting the time of conversion from pre-diabetes to diabetes.

CMHS Research Grant

Drs M Grivna (PI), F Al-Maskari, M El-Sadig, A Oulhaj
Environmental risk factors for school-related traffic injuries in

Al Ain, UAE – post-interventional study.

UAEU Program for Advanced Research (UPAR) Grant

Drs M Grivna (PI), SM Shah, A Al Suwaidi, Prof N Nagelkerke, Drs L Al Marzouqi, J Vincenten, S Bharwani, M Sheek-Hussein, Ms I Elbarazi, Prof FM Abu-Zidan
Prevention of pediatric home-related injuries: A randomized controlled trial. [2014-2015].

UAEU Zayed Foundation Grant

Drs SM Shah (PI), J Al-Kaabi, F Al-Maskari, A Al-Dhaheiri
Community partnership for diabetes prevention in youth: A randomized controlled trial. [2014-2016].

Others

United Arab Emirates Information and Communication Technology (ICT) Fund

Drs S Al Kobaisi (PI), A Al Faresi, F Al Maskari, M Masud, A Oulhaj, T Loney
Health Monitoring System for

Modeling Individual Exposure to Environmental Triggers of Asthma Episodes in the United Arab Emirates. [2014-2016].

Sheikh Hamdan Award for Medical Sciences

Drs SM Shah [PI], S Al Rukn, A Oulhaj, L Al Marzouqi
Risk factors for stroke in Emirati population: a case control study. [2014-2015]

Institution of Occupational Health and Safety of the United Kingdom Research Grant

Dr T Loney (PI), Prof TC Aw, Dr I Blair, Ms I El Barazi, Dr A Adem, Ms H Al Dhaheiri, Dr RF Cooling
Assessment of Pesticide Exposure in Date Palm Agricultural Workers in the United Arab Emirates. [2014-2016].



2014

Institute of Public Health



Standing from left to right:

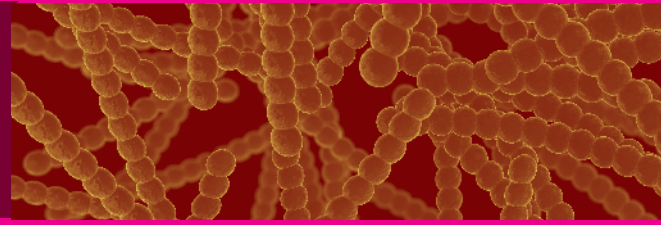
Dr. Yusra Elobaid, Dr. Anza Elias, Ms. Soha Ali, Dr. Mohamed El Sadig, Dr. Michal Grivna, Dr. Mohamud Sheek-Hussein, Dr. Luai Ahmed, Dr. Faisel Yunis, Dr. Syed Shah, Dr. Abderrahim Oulhaj, Mr. Faisel Aziz, and Dr. Balazs Adam.

Seated left to right:

Dr Tom Loney, Ms Iffat Elbarazi, Dr Iain Blair, Prof Tar-Ching Aw (Chair), Dr Fatma Al Maskari, Ms Arlene Kaljee and Ms. Faye Miller (Fulbright Scholar).

www.cmhs.uaeu.ac.ae/Departments/Default.asp?d=4 Tel: 7672000 / Fax: 7672033

Department of Internal Medicine



Research Profile

This Department has been highly active in the three fields of Teaching, Research and Clinical Services through 2014.

Below are some of the activities of the Department in 2014:

Clinical service

Members of the department provide inpatient and out of hours oncall consultant general and specialist service for the two main teaching hospitals on daily basis.

Clerkship & Residency Programs

We set up and contributed to a number of clinical teaching facilities and training programmes designed to enhance the learning experience in all areas of patient care and health care delivery.

Members of our department provide the clinical lead/directorship of the International Membership of the Royal College of Physicians (MRCP)[UK] diploma examination centre in Al Ain. We have a number of established examiners to Royal College of Physician of London who provide regular teaching sessions for residents and other junior doctors taking the MRCP diploma examination here in Al Ain.

Research Interest and collaboration

Many of our research priority areas such as obesity, diabetes and cardiovascular disease are not single academic disciplines but rather draw on many university and hospital departments from genetics to health services research studies and from nutrition to sociology. This is because the UAE society has been through rapid socioeconomic and social changes with urbanization over the last 40 years. Accompanying changes in diet and lifestyle are leading to growing epidemic of overweight/obesity, diabetes and other related cardiovascular diseases. Addressing some of these health issues requires collaboration and strong and vigorous research community.

Professor and Chair:

Prof S Gariballa

Professors:

Prof J Braun

Prof S Denic

Prof E E Kazzam

Associate Professors:

**Dr J Alkaabi / Assistant Dean
for Clinical Affairs**

Dr S Al-Suwaidi

Dr O Bakoush

Dr I Hassan

Dr A Shehab

Assistant Professors:

Dr A Al Dhanhani

Dr A Al-Fazari

**Dr M Al Houqani / Assistant
Dean for Education**

Dr S Alkaram

Dr S Al-Shamsi

Dr H Galadari

Dr A A Cevik

Dr F Al-Shamsi (abroad)

Medical Research Specialist I:

Dr C Sharma

Medical Research Specialist II:

Dr Brenda

Mr J Yasin

Medical Research Assistant

Ms R Shouk

Research Nurse:

Mr A Al Essa

Administrative Assistant:

Mr H Hassan

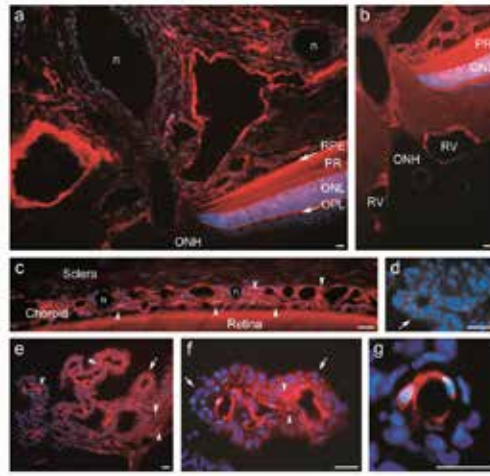
Medical Secretary:

Ms S Al-Shamsi

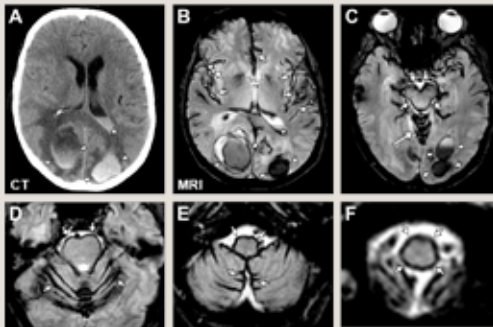
Secretary:

Ms K Al-Neyadi

Published by Prof. Braun:

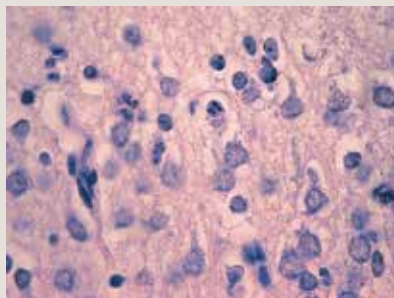


Ecto-5'-nucleotidase (5'-NT)-positive cells in the rat eye are visualized by immunohistochemistry. 5'-NT is located in the retinal pigment epithelium (RPE), photoreceptors (PR), outer nuclear layer (ONL) and outer plexiform layer (OPL), in the ciliary body and choroid. In the optic nerve head (ONH) (a) and choroid (c), 5'-NT-positive cells (Texas red) are located in the endothelium of vessels (with the exception of a few arterial walls marked with n = negative). Also retinal vessels (RV) express 5'-NT (b). Replacement of the immune serum by pre-immune serum resulted in absence of staining in all structures, e.g., ciliary body (d). In the ciliary body processes, 5'-NT-positive cells are predominantly expressed in the vessel walls but also in interstitial cells (e - f). 5'-NT is expressed by endothelial cells and pericytes (g) but only weakly by epithelial cells (f). Nuclei are blue (DAPI). Bars = 20 μ m. Arrows (d - f) indicate ciliary body epithelium, arrowheads (c, e, f) indicate interstitial cells.



Brain CT and MRI (T2*) show bi-occipital bleeding (A-B, arrowheads) and an intensive rim of hyperintensities around the brain (B-F, arrows) indicating hemosiderin depositions and thus superficial CNS siderosis. Superficial CNS siderosis is caused by chronic bleeding into the subarachnoid space. CSF shows erythrocytes and siderophages. The combination of ataxia, hypoacusis and dementia following head trauma has high diagnostic value for superficial CNS siderosis. Bilateral occipital bleedings caused visual field deficits.

Front cover image for
The Journal of Infectious
Diseases: Apoptotic neurons
in pneumococcal meningitis.
Cortical neurons with
fragmented condensed nuclei
induced by *Streptococcus*
pneumoniae in newborn rats.



The Department members hold a significant number of new and ongoing clinical research grants from the National Research Foundation/UAEU Research Affairs, Sheikh Hamdan Award for Medical Research and Abu Dhabi Executive Council.

Individual Profiles

Professor Salah Gariballa, MD, FRCP. Consultant in Acute Medicine and Clinical Nutrition. His research interest is in the role of nutrition in prevention and treatment of disease. Conducted a number of externally funded clinical trials and lectured & published widely on this subject including 2 recent chapters and a textbook on the role of Nutrition in the treatment & prevention of chronic disease.

Professor Elsadig Kazzam, M.B.CH.B., M.D., Ph.D., SCIM., SCC., FRCP (London), FESC., FACC., FAHA. Senior Consultant Cardiologist. His research focuses on clinical and experimental cardiology. His main interest is cardiac remodelling of both systolic & diastolic functions and recently more on right ventricular function. He is using non-invasive techniques (including Doppler Tissue Imaging, Doppler /2D Strain, Speckle Tracking, Cardiac MRI, Cardiopulmonary Exercise Test and Holter as well as Ambulatory Blood Pressure Monitoring. Currently he is involved in 4 projects. (1) Thalassemia and (2) Obstructive Sleep Apnoea (OSA) both completed. The OSA project resulted in the award of a master degree under his supervision. The third project in the role of electrolyte and circulatory homeostasis during dehydration and rehydration in the one-humped camel (*Camelus Dromedarius*), blockage of renin-angiotensin system is also studied. This project resulted in 5 publications. The 4th project on air pollution from road traffic is becoming a serious hazard in the UAE.

Professor Johann Sebastian Braun, MD, PhD. Consultant in Neurology. His research focuses on brain damage and neuroprotection. His main interest is the pathophysiology of neuronal injury in stroke and in meningoencephalitis. His recent results: brain cytokine upregulation in meningitis, neuronal injury by bacterial cytolysins in vitro and in meningitis, cerebral vasospasm and hyperperfusion in eclampsia, new avenues for stroke therapy strategies to achieve neuroprotection.

Dr Juma Musabab Alkaabi, BSc, MBChB, FRCP. Consultant Physician and Endocrinologist. His research is in diabetes, obesity, osteoporosis, dyslipidaemia and thyroid disorders.

Dr Shirina Al Sowaidi, MBBS, FRCP(C). Consultant Physician in Allergy and Immunology. Research interest in allergy disease epidemiology, asthma, allergic rhinitis and anaphylaxis.

Dr Omran Bakoush, MD, PhD. Consultant Nephrologist. His research interest is in the epidemiology of diabetic and non-diabetic chronic kidney diseases with focus on searching for prognostic markers for the disease outcome. His research group's recent significant finding is in the role of urine excretion of immunoglobulin M as a reliable predictor of cardiovascular complications in people with diabetes.

Prof Srdjan Denic, MD, FACP. Consultant Physician and Hematologist-Oncologist. His research focuses on common inherited blood disorders and human inbreeding. He has produced new reference standards for red cells and neutrophils for Emirati populations. His recent finding is that tribalism contributes to the burden of beta-thalassemia disease more than consanguinity per se. Results of his study suggest that consanguineous unions may increase relative fitness in the presence of high mortality from diseases like malaria. He is proposing a new theory of human consanguinity that is based on sociobiological principles of behavior.

Dr Inaam Bashir, MBBS, PhD. Consultant Physician, Hematologist and Haematopathologist. Her research interest is in malignant hematology mainly acute and chronic leukaemias.

Dr Abdullah Shehab, MMed, MD, FRCP, FACC, FSCAI. Consultant Physician, Interventional Cardiologist and Clinical Pharmacologist. His research interest is in coronary artery diseases, hypertension, heart failure, clinical pharmacology, and medical education. He is an investigator in following registries: Gulf RACE, Gulf SAFE, Gulf COAST, Gulf CARE and CEPHEUS.

Dr Ali Al Dhanhani, MBBS, MSc, FRCP(C). Consultant Physician and Rheumatologist. Research interest is in epidemiological studies of systemic lupus erythematosus and rheumatoid arthritis specifically on issues of quality of life and work disability.

Dr Ali Al-Fazari, MBBS, FACP, FRCP(C). Consultant Physician and Gastroenterologist. His research interest is gastric carcinogenesis, liver toxicology and inflammation.

Dr Mohammed Al Houqani, MBBS, FRCP(C). Consultant in Internal, Sleep and Respiratory Medicine. His research interest is on the epidemiology of respiratory and sleep related disorders.

Dr Sultan Al Karam, MBBS, FRCP(C). Consultant Physician and Interventional Cardiologist. Research interest is in cardiovascular disease and interventional cardiology.

Dr Saif Jaber Al-Shamsi, MBBS, FRCP(C). Consultant in Acute General (internal) Medicine. Research interest is in persistent hypertension.

Dr Arif Alper Cevik, Consultant Emergency Physician and coordinator of Emergency Medicine clerkship and Core Faculty of Tawam Emergency Medicine Residency Program. His professional interests are Emergency Medicine education, emergency and critical care ultrasound, and trauma management. His research interest is in acute clinical problems in Emergency Medicine

Dr Hassan Galadari, MBBS. Consultant Physician and Dermatologist. His research interest is in soft tissue augmentation and botulinum toxin.

Dr C Sharma (Medical Research Specialist I) and Dr Brenda Bin Su and Mr J Yasin (Medical Research Specialist II) have been enmeshed in the research activities of various faculty within and outside the Department. Their workload increases steadily with time. Mr A Al Essa (Research Nurse) is busily occupied with several research projects. Ms R Safeldin and Ms R Shouk recently joined the Department to support cardiovascular, epidemiology and nutrition research respectively.

Ms S Al-Shamsi and Ms K Al-Neyadi continue to provide secretarial services and Mr Hisham Hassan vital administrative services for the Department.

Leadership, management and administrations

Department members serve on a number of local, national and international committees.

Here are some examples:

Al Jalila Foundation

Arab Examination Board

National Continuous Medical Education Committee

National Diabetes Service Planning Group
Sheikh Hamdan Award for Medical Research
World Heart Failure Society.

The Department members published 44 papers in peer-reviewed journals, and a significant number of new and ongoing clinical research grants are held by members of the department.

Professor Elsadig Kazzam: Establishment of the first Non-Invasive Cardiology Lab for Clinical Research



Cardiopulmonary Exercise Test Machine (CPET)



Vivid I Portable Echocardiography Machine



EchoPac - a sophisticated and advanced cardiac echocardiography data analysis



Cobas e-411 Machine for analysis of Neurohormones

Articles in Peer-reviewed Journals

Acar N, Ozcelik H, AA Cevik, Ozakin E, Yorulmaz G, Kebapci N, Bilge U, Bilgin M. (2014). Low perfusion index affects the difference in glucose level between capillary and venous blood. *Ther Clin Risk Manag*, 20;10:985-91.

Agarwal MM, Shah SM, Al Kaabi JM, Saquib S, Othman Y. (2014). Gestational diabetes mellitus: confusion among medical doctors caused by multiple international criteria. *J Obstet Gynecol Res* (doi: 10.1111/jog.12661. [Epub ahead of print])

Al Dhanhani AM, Gignac MA, Beaton DE, Su J, Fortin PR. (2014). Work factors are associated with workplace activity limitations in systemic lupus erythematosus. *Rheumatology (Oxford)*, Nov; 53(11):2044-52.

Al Kaabi JM, Al Maskari F, Zoubeidi T, Abdulle A, Shah SM, Cragg P, Afandi B, Souid AK. (2014). Peripheral Artery Disease in Type 2 Diabetic Patients from the United Arab Emirates. *J Diabetes Metab*, 5:6.

Al Kaabi JM, Al Maskari F, Zoubeidi T, Abdulle A, Shah SM, Cragg P, Afandi B, Souid AK. (2014). Prevalence and Determinants of Peripheral Neuropathy in Patients with Type 2 Diabetes Attending a Tertiary Care Center in the United Arab Emirates. *J Diabetes Metab*, 5:3.

Alfazari AS, Al-Dabbagh, B., Almarzooqi, S., Albawardi, A., & Souid, A. K. (2013). A preparation of murine liver fragments for in vitro studies: liver preparation for toxicological studies. *BMC Res notes*, 6(1), 70.

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Alhaj M, Kazzam E, Amir N, Nyberg F, Adem A. (2013). Effects of Dehydration and Blockade of Angio-

tensin II AT1 Receptor on Stress Hormones and Anti-Oxidants in the One-Humped Camel. *BMC Vet Res*, 2013; 9:232.

Ali BH, Al Za'abi M, Ramkumar A, Yasin J, Nemmar A. (2014). Anemia in adenine-induced chronic renal failure and the influence of treatment with gum acacia thereon. *Physiol Res*, (63(3)):351-8.

Ali BH, Al-Salam S, Al Za'abi M, Al Balushi KA, Ramkumar A, Waly MI, Yasin J, Adham SA, Nemmar A. (2014). Does swimming exercise affect experimental chronic kidney disease in rats treated with gum acacia? *PLoS One*, Jul 21;9(7).

AlMahmoud T, Alfazari AS, Branicki F. (2014). Guidelines on a Code of Ethics and Professionalism for Residents Undertaking Postgraduate Medical Education. *J Med Sci*, 4(3), 128-137.

Almarzooqi S, Albawardi A, Alfazari AS, Saraswathiamma D, Abdul-Kader HM. (2014). Effects of Selected Inhibitors of Protein Kinases and Phosphatases on Cellular Respiration: An In Vitro Study. *J Clin Toxicol*, 4:212.

Almarzooqi S, Alfazari AS, Albawardi A, Saraswathiamma D, Abdul-Kader HM. (2014). Modulation of Cardiomyocyte and Hepatocyte Bioenergetics by Biguanides. *J Clin Toxicol*, 4(203), 2161-0495.

Al-Rasadi K, Al-Zakwani I, Al Mahmeed W, Arafah M, Al-Hinai AT, Shehab A, Al Tamimi O, Al Awadi M. (2014). The therapeutic lipid target achievements among high and highest risk patients: Results from the CEPHEUS study in the Arabian Gulf. *CMRO*, Dec;30(12):2429-35.

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bian Gulf Countries. *Angiology*, 65(10):919-26.

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Galadari H, Salam A, Dadzie OE, Galadari H. (2013). Chemical peeling in ethnic skin: an update. *Brit J Dermatol*, 10/2013; 169(s3).

Galadari H, Valentim da Silva RM, Barichello PA, Medeiros ML, de Mendonça WC, Dantas JS, Ronzio OA, Froes PM, Galadari H. (2013). Effect of capacitive radiofrequency on the fibrosis of patients with cellulite. *Dermatol Res Pract*, 01/2013; 2013:715829.

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status is associated with depression symptoms following acute illness. *Int J Vitam Nutr Res*.

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Hassan I, Kristensen J, Alizadeh H, Bernsen R. (2013). Outcome of patients with acute lymphoblastic leukemia (ALL) following induction therapy with a modified (pulsed dexamethasone rather than continuous prednisone) UKALL XII/ECOG E2993 protocol at Tawam Hospital, United Arab Emirates (UAE). *Med Oncol*, Jun; 30(2):519.

Izadpanah K, Freyer D, Weber JR, Braun JS. (2014). TNF α and IL-1 β in pneumococcal meningitis. *J Neuroimmunol*, 276; 104-111.

Mokdad AH, Jaber S, Alsowaidi SA, Murray CJL, et al. (2014). The State of Health in the Arab World, 1990-2010: An Analysis on the Burden of Diseases, Injuries and Risk Factors. *The Lancet*, 383, 9914, 309-320.

Nemmar A, Albarwani S, Beegam S, Yuvaraju P, Yasin J, Attoub S, Ali BH. (2014). Amorphous silica nanoparticles impair vascular homeostasis and induce systemic inflammation. *Int J Nanomed*, 2; 9:2779-89.

Nemmar A, Al-Salam S, Beegam S, Yuvaraju P, Yasin J, Ali BH. (2014). Pancreatic effects of diesel exhaust particles in mice with type 1 diabetes mellitus. *Cell Physiol Biochem*, 33(2):413-22.

Nemmar A, Beegam S, Yuvaraju P, Yasin J, Fahim MA, Elsadig Kazam, Alhaddabi I, Ali BH. (2014). Potentiation of cisplatin-induced nephrotoxicity by repeated exposure to diesel exhaust particles: An experimental study in rats. *Exp Biol Med (Maywood)*, Apr 16. (239(8):1036-1044.

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vitro: role of oxidative stress. *Cell Physiol Biochem*, 34(2):255-65.

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Shreesh Ojha, Sharma C, Nurulain SM. (2014). Antihistamines: promising antidotes of organophosphorus poisoning. *Mil. Med. Sci. Lett. (voj. zdrav. listy)*, 83, 97-103.

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Tugrul ZA, Cevik AA, Acar N, Kaya S, Ozcelik H. (2014). The analysis of elderly patients admitted to the emergency department of a university hospital in Turkey. *Int J Acad Res*, Vol 6 (2).

Zeytin AT, Cevik AA, Acar N, Kaya S, Ozcelik H. (2014). Characteristics of Patients Presenting to the Academic Emergency Department in Central Anatolia. *Turk J Emerg Med*, 14(2):75-81.

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Zubaid M, Thani KB, Rashed W, Alsheikh-Ali A, Alrawahi N, Ridha M, Akbar M, Alenezi F, Alhamdan R, Almahmeed W, Ouda H, Al-Mulla A, Baslaib F, Shehab A, Alnuaimi A, Amin H, Krumholz HM; Gulf COAST investigators (2014). Design and Rationale of Gulf locals with Acute Coronary Syndrome Events (Gulf Coast) Registry. *Open Cardiovasc Med J*, Sep 25; 8:88-93.



Books, Chapters, Reviews and Editorials

Al Dhaheri A, Galadari H. (2013). Vesicular and Bullous Eruptions.

(Dermatology Section Editor) Taylor's Differential Diagnosis Manual: Symptoms and Signs in the Time-Limited Encounter (Lippincott Manual Series) 13.8.

Al Faresi F, Galadari H. (2013). Vitiligo. Ethnic Dermatology: Principles and Practice Textbook, edited by Dadzie O. Wiley Blackwell 173-185.

Alnuami K, Galadari H. (2013). Alopecia. Taylor's Differential Diagnosis Manual: Symptoms and Signs in the Time-Limited Encounter (Lippincott Manual Series) 13.1.

Bredan A, Benamer HT, Bakoush O. (2014). Why are journals from less-developed countries constrained to low impact factors? Libyan J Med, 15; 9:25774.

Ferguson L, Alexis A, Galadari H. (2013). Cosmetic Dermatology. Ethnic Dermatology: Principles and Practice Textbook, edited by Dadzie O. Wiley Blackwell 273-286.

Galadari H. (2013). (Dermatology Section Editor) Taylor's Differential Diagnosis Manual: Symptoms and Signs in the Time-Limited Encounter (Lippincott Manual Series) 13.

Galadari H. (2013). Botulinum Toxin in Middle Eastern population. Botulinum Toxin in Aesthetic Medicine Textbook, edited by Redaelli A. OEO Florence 199-204.

Published Abstracts, Letters and Correspondence

Aldhaheeri S, Oulhaj A, Al-Houqani M. (2014). Positional sleep apnea amongst adults in United Arab Emirates. Eur Respir J, Sep;44(Abstract Supplement 58).

Al-Houqani M, Aldhaheeri S, Al-Manhali M. (2014). Evaluation of

the Arabic version of stop bang questionnaire as a screening tool for obstructive sleep APNEA. J Sleep Disord Res, May;37(Abstract Supplement):A134.

Alsowaidi S. (2014). The Prevalence and Correlates of Allergic Rhinitis in a Gulf Arab Population. Thematic Poster Session (TPS). EAACI Congress Copenhagen, Denmark. 2014.

Cetinkaya O, Cevik AA, Acar N, Ozakin E, Kaya F, Şakalar Ş. (2014). Comparison of Alvarado Score System And Procalcitonin Levels In The Effect of Acute Appendicitis Diagnosis, In the Patients With Right Lower Quadrant Pain In The Emergency Department. EACEM, Turkey.

Cevik AA, Noureldin AN, Oulhaj A, Gariballa S. (2014). A Model of Emergency Medicine Clerkship for Generation Y. EACEM. Turkey.

Cevik AA, Noureldin AN, Oulhaj A, Gariballa S.. (2014). The first Emergency Medicine of UAE. What do students think? SEMS, Singapore.

Cevik AA, Noureldin AN, Quek LS. (2014). Global Initiative for Emergency Medicine for Medical Students and Interns: A step forward, EACEM. Turkey.

Gariballa S. (2014). 25-hydroxyvitamin D status and muscle function in acutely ill patients and their response to mixed nutrient supplements. ESPEN

Ozakin E, Ozdemir AO, Şahin DG, Akay OM, Tehli Y, Cevik AA, Acar N, Kaya FB, Bilgin M. (2014). Thromboelastography: Can it predict intracerebral bleeding after tPA treatment? EACEM, Turkey.

Türküzü M, Acar N, Arslantas D, Cevik AA, Ozakin E, Kaya F, Kaplan D, Cetinkaya O. (2014). Evaluation of the Complaints and the Incidence of Recurrent Patient Presentation within 10 Days after the Initial Visit to the Emergency Department of the Eskişehir Osmangazi University Hospital: A One Year Study. EACEM, Turkey

Proceedings, Conferences, Invited Lectures, Web Sites and Others

Al-Karam S. (2014). Panelist of Roundtable discussion on Transforming Healthcare Delivery in the Arab World. Hamdan Bin Mohammed e-University Annual Congress, Dubai

Al-Karam S. (2014) Faculty and session chair, 4TS conference, Faculty and session chair 2nd Gulf Bifurcation Symposium, Dubai

Alsowaidi S. (2014). Pediatric Allergy and Immunology From Science to Practice. Allergic Rhinitis Around The World, Kuwait. (Speaker)

Alsowaidi S. (2014). European Academy of Allergy and Clinical Immunology Annual Congress, Copenhagen De' nmark. (Poster Presentation)

Braun JS. (2014). Neurological Clinical Skills. Lecture, Charité University, Berlin, Germany

Galadari H. (2014). Systems and methods for using a microcannula introducer for soft& skin tissue augmentation, Inventor(s): Chuang Gary; US Application No: 61/934072, Filing Date: 1/31/2014.

Galadari H. (2014). Treatment of the Tear Troughs, Perfecting the Lip with Fillers, Complication of Fillers. Muscat Derm1 in Muscat, Oman.

Galadari H. (2014). How I do it: Fillers, Complications of Cosmetic Procedures, Mid Face Augmentation with New Innovations for Treating the Tear Trough. 4th Continental Congress of Dermatology in Manila, Philippines.

Galadari H. (2014). Non-Surgical Rejuvenation of the Forehead and the Upper Face from Anatomy to Practical Training in Facial Injections - Live demo: Tear trough. Aesthetic and Anti-aging Medi-

cine European Congress in Paris, France.

Galadari H. (2014). Complications of Soft Tissue Augmentation, Lip Augmentation with Fillers. Aesthetic and anti-aging Medicine Asian Congress, Singapore.

Galadari H. (2014). Mid Face Augmentation with New Innovations for Treating the Tear Trough. 3rd Eastern Asia Dermatology Congress in Jeju, South Korea

Galadari H. (2014). Up and coming Fillers: Experience from across the Atlantic. American Academy of Dermatology Summer Meeting in Chicago, IL USA

Galadari H. (2014). Beauty Concepts, Complications in Soft Tissue Augmentation. Aesthetic Medicine Congress of South Africa in Pretoria, South Africa

Galadari H. (2014). Live Demo: Soft Tissue Augmentation and Neuromodulators – Simultaneous Cadaver Prosection and Live Patient Injections, Up and coming Fillers: Experience from across the Atlantic. 72nd Annual Meeting, American Academy of Dermatology in Denver, CO USA.

Galadari H. (2014). Botulinum Toxin- Upper and Lower Face, combination technique for neck rejuvenation the perfect lip (video) periorbital rejuvenation with semi cross-linked hyaluronic acid. 5th Spring Meeting of the International Society for Dermatologic Surgery in Cebu, Philippines.

Galadari H. (2014). New Innovation in Treating the Tear Trough. Hellenic Society of Dermatologic Surgery Meeting, Athens, Greece

Gariballa SE. (2014). Recent Research highlights in diabetes: relevance to clinical practice. 19th Annual Conference on Diabetes Mellitus & Endocrine Disorders, Al Ain
Gariballa SE. (2014). 25-hydroxyvitamin D status and muscle function in acutely ill patients and their response to mixed nutrient

supplements. British Association of Parenteral and Enteral Nutrition Conference, Harrogate, England.

Gariballa SE. (2014). Obesity and Heart Failure, 4th World Heart Failure Conference, Al Ain UAE.

Kazzam E. (2014). 4th World Heart Failure Society Congress, Darnat Resort, Al-Ain, UAE. 11-13th December 2014. (President of the Congress and Chairperson and speaker in a number of sessions)
• Keynote speaker, Professor W. J. Remme Lecture, Right Ventricular Failure and function in Health and disease.
• Heart Failure in the Middle East
• The President lecture: Pathophysiology of Diastolic Heart Failure

Kazzam E. (2014). World Federation of Cardiology, World Congress of Cardiology 2014, 4-7th May 2014. Melbourne, Australia. (Invited Faculty and Chairperson) Sessions
World Heart Failure Society Session - Meet the Experts: Different Heart Failure-Different Treatment. Symposium: The latest RAAS management in congestive Heart Failure.

Kazzam E. (2014). 4th Biannual International Iranian Heart Failure Summit, 30 April – 01st May 2014, Tehran-Iran. (Invited International speaker)
Lectures:
Assessment of Right Ventricular Remodeling in Health and Disease: Echocardiographic Approach
Heart Failure Society: what we can do in Developing Countries

Kazzam E. (2014). Global Network on Emergency Medicine Conference, Global Network on Emergency Medicine Conference, 25 – 29th April 2014. Dubai, UAE. (Invited Speaker and Chair/Co-Chair)
Lecture: Guidelines in Acute Heart Failure.

Kazzam E. (2014). 30th Annual International Conference on Recent Advances in Echocardiography and Allied Techniques (MRI- CT Scan, Nuclear) Washington, USA 28th March 2014. (Invited Interna-

tional Faculty and Speaker)

Kazzam E. (2014). Heart Centre, Khartoum, Sudan, 25th February 2014. Lecture: Right Ventricular Function/Failure Challenges: Emphasis on clinical approach.

Kazzam E. (2014). 23rd Biannual Sudanese Physicians Congress, 21-23rd February 2014, Khartoum, Sudan. (Invited International Speaker) Lecture: Right Ventricular Remodeling in Health and Disease Highlight from our own Research Group 1994-2014).

Kazzam E. (2014). Prize (World Herat Failure Society) to be presented in the next World Heart Failure Society Congress in Beijing – China (2016) for the best scientific paper.

Shehab A. (2014). Arab health cardiology meeting

Shehab A. (2014). ESC Highlights 2014 Luxor, Egypt, 18-20th, December 2014.

Shehab A. (2014). GulfPCR-GIM, 11-12th of Dec 2014, Dubai/UAE.

Shehab A. (2014). 1st Bright Start Parenting Event, Sharjah under the patronage of HH Sheikh Jawaher Al Qasimi, 7-8th December 2014.

Shehab A. (2014). 5th international Congress of Cardiology, Fujairah/ UAE, 21-23 November 2014.

Shehab A. (2014). Emirates cardiac society meeting, Dubai, UAE, 6-8th Nov 2014.

Shehab A. (2014). TCT conference, Washington, USA, 13-17th September 2014.

Shehab A. (2014). 19th Cardiovascular summit TCTAP, Seoul, South Korea, 22-25th April 2014.

Shehab A. (2014). Best of ACC 2014, Dubai, 1-2nd, May 2014.

Shehab A. (2014). 4th EP workshop for cardiologist. 26-27th of April 2014. Dubai

Shehab A. (2014). GNEM 2014. 25-29th April, Dubai

Shehab A. (2014). 2nd Annual Cardio Arab Conference, 17-19 April 2014 in Marriott Marquize Hotel, Dubai, UAE.

Shehab A. (2014). TCC-Colombo, 14-15th March 2014, Sri Lanka.

Shehab A. (2014). 41st Egyptian cardiology conference, 24-27th of Feb 2014. Cairo, Egypt.

Shehab A. (2014). 6th Middle East Cardiovascular Disease and Intervention Conference, 29-30 January 2014, Dubai.



RESEARCH GRANTS

CMHS Research Grants

Dr M Al-Houqani (PI)
Carbon Monoxide Levels among Midwakh Smokers.

Prof E Kazzam (PI)
Risk factors, and consequences of obstructive sleep apnoea and

short sleep duration: Special emphasis on cardiovascular disease and neurohormonal activation. [2014-2015]

UAEU Center-Based Interdisciplinary Research Grant

Dr S Alsowaidi (PI)
Early predictors, risk factors of allergic diseases and the complex interplay between biochemical markers, lifestyle and socio-economic determinants among nationals of the United Arab Emirates.

UAEU Startup Grant

Dr A Shehab (PI)
Genotype guided antiplatelet therapy [2015-2017]

UAEU National Research Foundation Grants

Prof E Kazzam (PI)
Cardiac remodeling and ventricular interaction in patients with Thalassemia Major: Detailed Echocardiographic and Magnetic Resonance Imaging Evaluation in relation to Neurohormones and Collagen markers

Dr AS Al-Fazari (PI)
Role of estrogen in gastric epithelial homeostasis

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

Prof S Gariballa (PI)
Effects of vitamin D supplementation with or without calcium on health and well-being of vitamin D deficient UAE citizens: A randomised double-blind placebo controlled trial.

Dr AS Al-Fazari (PI)
Studies on hepatocytes and myocytes toxicities of the lipid lowering agents statins [2014-2016]

Others

Gulf COAST from Kuwait University
Dr A Shehab (PI)
Gulf locals with acute coronary syndrome events registry [2012-2015]

Dr A Shehab (PI)
Hypertension study registry in Al Ain outpatient clinics [2015-2017]



2014

Internal Medicine

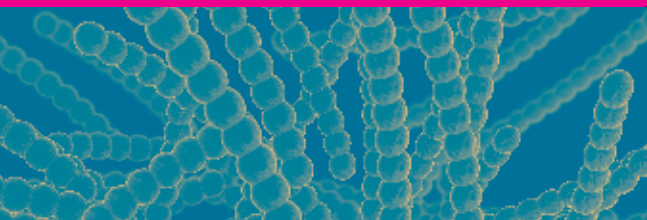


Back row, left to right:

*Dr I Hassan, Mr J Yasin,
Dr H Galadari, Dr A Al-Fazari,
Dr O Bakoush, Dr A Al-Dhanhani,
Dr S Al-Karam, Mr H Hassan.*

Front row, left to right:

*Mr A Al-Essa, Ms R Shouk,
Prof S Denic, Prof S Gariballa,
Dr Bin Su, Dr C Sharma,
Ms H Kader, Mr M Rafiuddin*



Department of Medical Education

Research Profile

Professor & Chair:

Prof M Elzubeir

Professor:

Prof S Elango

Associate Professor:

Dr S Shaban

Senior Lectures:

Dr R Benner

*Medical Communication
and Study Skills:*

Mr M Campbell

Ms G Kershaw

Administrative Assistants:

Ms K Al Neyadi

Ms H Kablani

Mr CP Nair

Ms M Al Neyadi

Administrator, Medical Education:

Ms L Ravindranathan

Clerk II:

Mr T Usman

IT GROUP

Senior IT Support Specialist:

Mr Alsajir M Basheer

Ms L Mohammed

MEDIA CENTER

Clerk II: **Ms M Al Housani**

Audio-visual Systems Administrator:

Mr Z Mohammed

Multimedia Designer: **Ms I Lizarriturri**

Medical Photographer: **Mr A Prasad**

SKILLS AND TEACHING LABORATORY

Clerk II: **Mr B Abubakkar**

Administrator, Clinical Skills Laboratory:

Miss A Al Baek

Clerk II: **Mr S Pandian**

Medical Research Specialist II:

Mr A Wahab

Margaret Elzubeir's research interests are in the areas of medical student selection, academic performance, small group learning, curriculum and faculty development.

Sambandam Elango's main research activities are in the area of Simulation in Medical Education, Clinical Education, Assessment of competence and Leadership in Education.

Sami Shaban's research interests are in Health Informatics and electronic curriculum and assessment systems for medical education.

Geraldine Kershaw's research interests are in the areas of professionalism, student portfolios, and academic integrity.

Summary of current research projects:

1. Effective Use of a Medical School Curriculum and Assessment Management Systems in Integrated Medical Education: Shaban S.
2. Effective Use of an Electronic Assessment System including question management and data banks as well as assessment delivery and analysis: Shaban S & Elzubeir M
3. Factors determining Medical Students' Residency Choice: Ibrahim H, Shaban S, Elzubeir M.
4. Self-Assessment Accuracy : Aburawi EH (Pediatrics), Shaban S, Elango S, Elzubeir M (corresponding author)
5. Students' research activities through the lens of Transformative Learning Theory: Elzubeir M, Howarth C (Physiology)
6. Developing high quality single best answer multiple choice questions (MCQs): Description of an enhancement-focused strategy. Al Mahmoud T, Elzubeir M, Branicki F (Surgery)
7. YouTube video enhancing senior medical students' learning: Mirghani H (ObGyn), Elzubeir M
8. Students' access to patients in obstetrics & gynaecology: Mirghani H (ObGyn), Elzubeir M
9. Evaluation of a Health Promotion curriculum: Grivna M (Institute of Public Health), Kershaw G
10. Student perceptions of portfolio use: Kershaw G

Articles in Peer-reviewed Journals

Aburawi EH, Mclean M, Shaban S. (2014). Evaluation of faculty: Are medical students and faculty on the same page? *SQU Med J*. 2014; 14(3).

Alfazari A, Almarzooqi S, Albawardi A, Shaban S, Al-Dabbagh B, Saraswathiamma D, Tariq S, Souid AK. (2014). Ex vivo Effects of Sorafenib and Regorafenib on Murine Hepatocytes. *J Clin Toxicol*, 2014; 4(4).

Al-Hammadi S, Alfazari AS, Shaban S, Souid AK. (2014). Study on the Use of Cellular Respiration as a Surrogate Biomarker in Drug Development. *Austin J Clin Pathol*; 1(3).

Almarzooqi S, Albawardi A, Alfazari A, Saraswathiamma D, Abdul-Kader H, Shaban S, Mallon R, Souid AK. (2014). Effects of Selected Inhibitors of Protein Kinases and Phosphatases on Cellular Respiration: An In Vitro Study. *J Clin Toxicol*; 4(5).

Almarzooqi S, Alfazari A, Albawardi A, Saraswathiamma D, Abdul-Kader H, Shaban S, Souid AK. (2014). Modulation of Cardiomyocyte and Hepatocyte Bioenergetics by Biguanides. *J Clin Toxicol*; 4(3).

Alsamri M, Al-Hammadi S, Shaban S, Alshamsi A, Balhaj G, Pramathan T, Souid AK. (2014). Impaired Forebrain Cellular Bioenergetics Following Acute Exposure to Ammonia. *J Clin Toxicol*; 4(2).

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Ibrahim H, Chandra S, Shaban S. (2014). Can our residents carry the weight of the obesity crisis? A mixed methods study. *Obes Res Clin Pract* (Accepted 2014).

Mirghani H, Ezimokhai M, Shaban S, van Berkel H. (2014). Superficial and Deep Learning Approaches among Medical Students in an Interdisciplinary Integrated Curriculum. *Edu Health*. 2014; 27(1).

Shaban S, Elzubeir M. (2014). A College-Wide Assessment Management System in an Integrated Medical Curriculum. *J Syst Cybern Inf* (Accepted 2014).

Proceedings, Conferences, Invited Lectures, Websites etc

Elango.S. (2014). Integrating clinical skills into the medical curriculum. Network Medical Education conference, Fortaleza, Nov 19-23, 2014.

Elzubeir M, Howarth C. (2014). Examining Undergraduate Medical Students' Research Activities Through the Lens of Transformative Learning Theory. Association for Medical Education (AMEE) Conference, Milan, Italy, 30th August to 3rd September 2014.

Kershaw G. (2014). Portfolios for undergraduate students' professional skills development. TESOL Arabia International Conference, Dubai, UAE 13-15 March 2014

Major SC, Prinsloo E, Kershaw G, Hashim J. (2014). Reflective writing and medical students' understanding of professionalism in practice in relation to GMC's Domains of Good Medical Practice. 14th Canadian Conference on Medical Education, Ottawa, Canada. 25 – 29 April 2014

Major SC, Prinsloo E, Kershaw G, Hashim J. (2014). Reflective writing and medical students' understanding of professionalism in practice in relation to GMC's Domains of Good Medical Practice. Society for Academic Primary Care (SAPC) Cambridge, England. 30-31 January.

Shaban S. (2014). A College-Wide Assessment Management System in an Integrated Medical Curriculum. Hamdan Bin Mohammad Smart University (HBMSU) Annual Congress 2014, 6th Conference on eLearning Excellence in the Middle East, Dubai, UAE, Feb 2014.

Shaban S. (2014). Policy and strategy Roundtable. Transforming Healthcare Delivery in the Arab World: From E-Health to M-Health. HBMSU 5th Annual Health Conference 2014, Dubai, UAE, Feb 2014.

Shaban S. (2014). A College-Wide Assessment Management System in an Integrated Medical Curriculum. The 12th International Conference on Education and Information Systems, Technologies and Applications: EISTA 2014, Orlando FL, USA, Jul 2014.

Shaban S. (2014). Technical Aspects of Establishing a Trauma Registry. 10th Middle East Trauma Conference, Workshop on Establishing A Trauma Registry. Dubai, June 2014.

2014

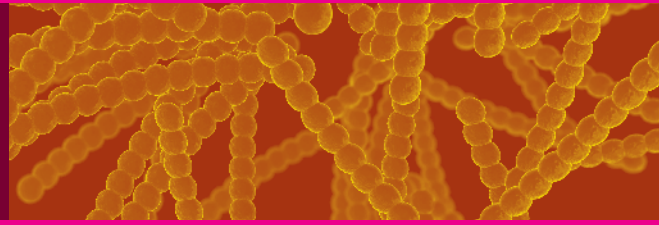
Medical Education



Back row, from left to right:
Mr T Usman, Mr Alsajir Basheer,
Mr Athiq, Dr Raney Benner,
Dr Sami Shaban, Mr Mark Campbell,
Dr Mohammed Al Houqani,
Professor Sambandam Elango,
Mr Ashok Prasad, Mr. Zeeshan
Mohammed, Mr Babuhan Abubakkar.

Front row, from left to right:
Mr Ahmed Fathy, Ms Ivanna Lizarrit-
urri, Ms Lakshmi R, Ms Hoda Mansour,
Ms Geraldine Kershaw,
Professor Margaret Elzubeir,
Ms Amira Al Baeek, Ms Mariam Al
Neyadi, Mr CP Nair.

Department of Medical Microbiology and Immunology



Research Profile

Members of the Department of Medical Microbiology and Immunology have a broad range of research interests in the fields of cellular and molecular immunology, bacteriology and virology. Research activities in the Department are strongly supported by a diverse number of intramural and extramural grants to individual faculty members.

Prof Basel al-Ramadi: Our primary research interest is focused on the role of the innate immune system in immunoregulatory control of microbial infections and cancer. Current ongoing projects include the influence of obesity and metabolic pathways on anti-tumor immunity, targeting of myeloid-derived suppressor cells as a modality in cancer immunotherapy, and recognition of natural bee-derived products by the immune system and their role in anti-tumor immunity.

Prof Tahir Rizvi: Recent research interests of my laboratory are directed towards studying molecular steps involved in the replication of retroviruses such as human, simian, and feline immunodeficiency viruses (HIV, SIV, & FIV), Mason-Pfizer monkey virus (MPMV), and mouse mammary tumor virus (MMTV). The overall goal of our research efforts is to enhance our understanding of the regulation of retroviral gene expression, cancer induction, design and development of retroviral/lentiviral vectors and packaging cells lines for safe and efficient human gene therapy as well as DNA vaccine development.

Specifically our ongoing research efforts are directed towards delineating the gRNA export, dimerization, and packaging mechanisms and their interplay during retroviral replication. Using HIV, FIV, SIV, MPMV, and MMTV as model systems, our current ongoing studies are focused on gaining enhanced understanding of how structural motifs (regardless of the primary sequence) facilitate retroviral gRNA export, dimerization as well as packaging and/or cross/co-packaging into the nascent virus particles. These studies are being accomplished by employing a combi-

Professor & Chair:

Prof B al-Ramadi

Professor:

Prof T Pal

Prof T Rizvi

Associate Professor:

Dr G Khan

Dr A Sonnevend

Assistant Professor:

Dr E Elkord

Dr A Al Qahtani

Dr M Al Shamsi

Teaching Assistant:

Dr Z Al Rasbi

Medical Research Specialist:

Ms L M Ali

Ms A Al-Ghazawi

Mr M Al-Haj

Mr Y Mohamed

Ms P Philip

Mr A Shahin

Medical Research Technician:

Ms G Bashir

Administrator:

Ms H AlBlooshi

Office Assistant:

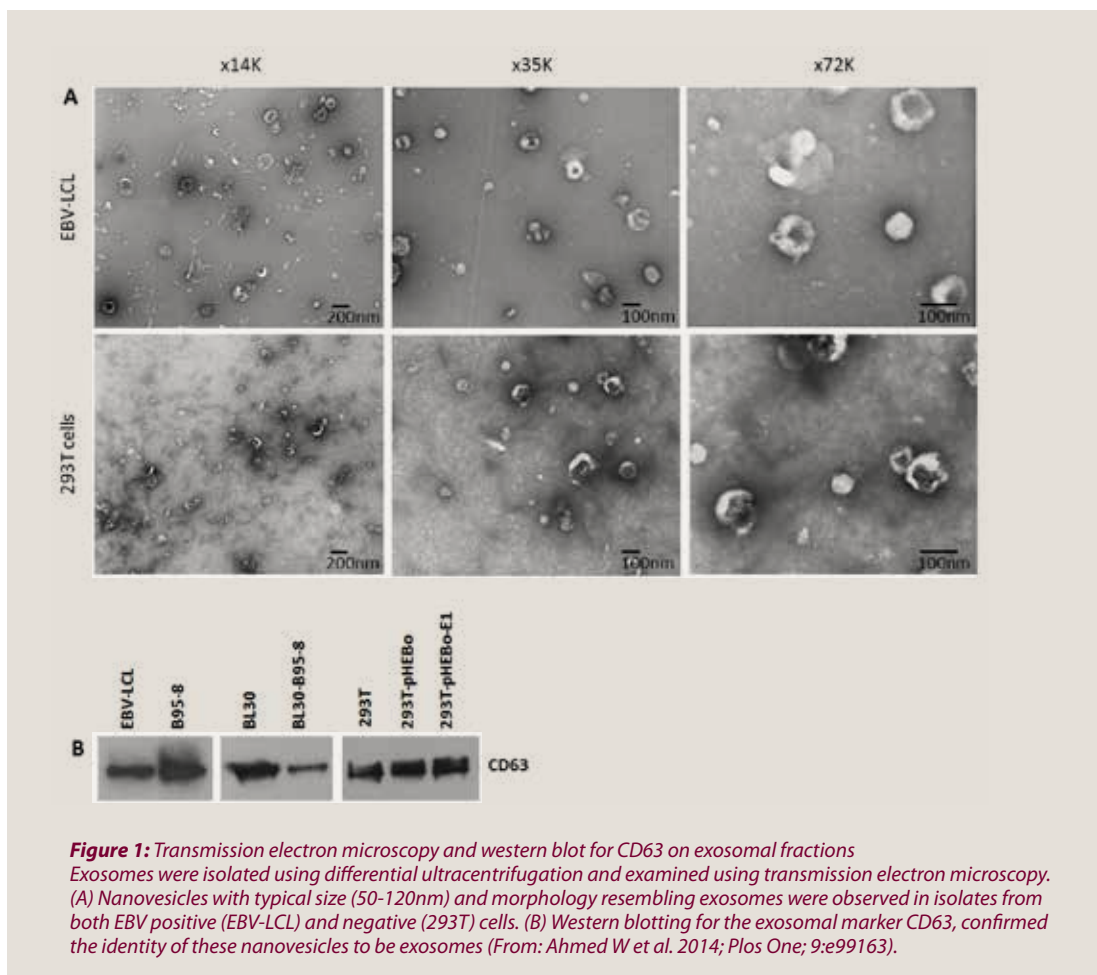
Mr M Hashiq

nation of in vivo (genetic complementation assays), in vitro (biochemical probing/mapping-SHAPE), and structural prediction/phylogenetic approaches to test our proposed hypotheses. Over the years, Prof. Rizvi's laboratory has been able to successfully compete for both intramural and extramural grant support for his work on retroviruses. Studies on retroviral RNA packaging and dimerization have been published in journals of international repute.

Prof Tibor Pal: My main research interest is the investigations of the molecular epidemiology of multi drug resistant Gram-negative pathogens and of the genetic background of their antibiotic resistance. We are focusing particularly on the strains producing carbapenemases, i.e. an emerging threat in the UAE. Also, the relationship between drug resistance and the presence of certain virulence genes and cell wall elements are being studied. We cooperate with colleagues in Paris, Edinburgh, Vienna, Rome, Kuwait, Riyadh, Muscat.

Dr Gulfaraz Khan: The main theme of research in our laboratory is to understand the biology of Epstein-Barr virus (EBV) and its role in the pathogenesis of EBV associated diseases, in particular, malignancies and autoimmune disorders. Our current efforts are focused on three broad areas: (1) Establishing an in vitro and in vivo model for EBV (2) Investigating the role of EBV latent genes, in particular EBERs, in cell transformation and oncogenesis (3) Role of EBV in the pathogenesis of multiple sclerosis.

We recently published some of our results related to the mechanism of excretion of EBV-encoded small RNAs (EBERs) (see Fig.1). We have shown for the first time that these small RNAs are excreted via nano-vesicles called exosomes (see Fig.2). These vesicular structures not only protect EBERs from endonuclease degradation, but also provide a means for their transport to uninfected cells. We are currently examining the biological impact of exosomes excreted by EBV-infected cells on surrounding cells.



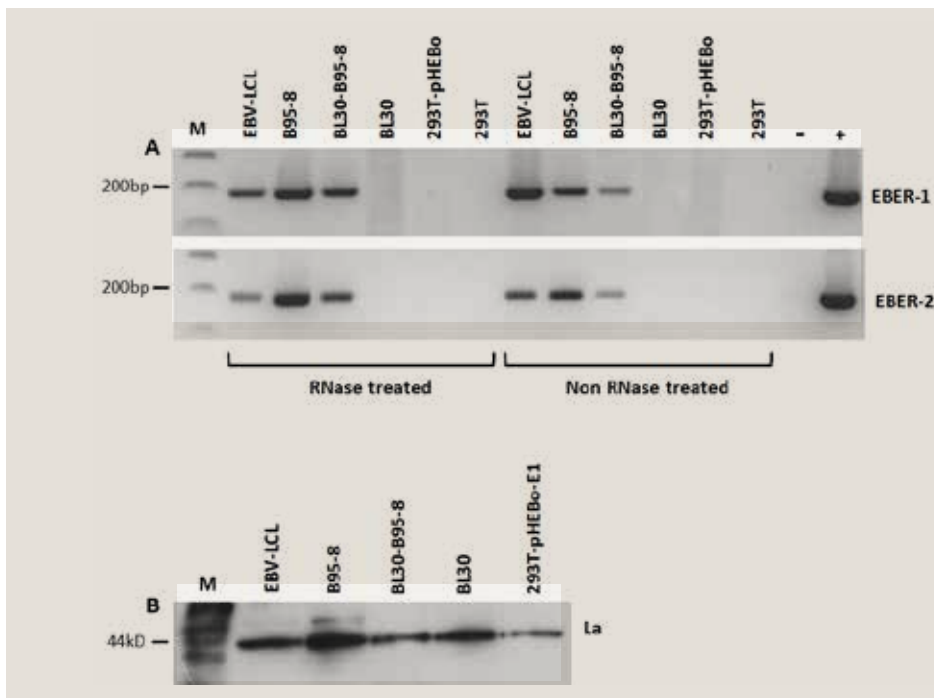


Figure 2: Detection of EBERs and EBER binding protein La in exosomal fractions (A) RNase treatment of purified exosomes prior to RNA extraction and RT-PCR did not abolish EBER amplification signal, suggesting that EBERs were present in exosomes and not in the extra-exosomal fraction. (B) To determine if the EBER-1 binding protein La was present in exosomes, 25µg of exosomal protein fraction was separated by 10% SDS PAGE and immunoblotted using anti-La monoclonal antibodies. Exosomal fractions from all cell lines clearly showed presence of La protein (From: Ahmed W et al. 2014; Plos One; 9:e99163).

Dr Mariam Al Shamsi: Main research activity is in the area of inflammation and autoimmunity. Currently I am investigating the changes in cellular bioenergetics in cells and tissues during clinical course of experimental autoim-

mune encephalomyelitis, rodent models of multiple sclerosis. Our experimental models are DA (Dark Agouti, susceptible) and OA (Oxford Albino, resistant strain). Representative data are presented in Figures 3-4.

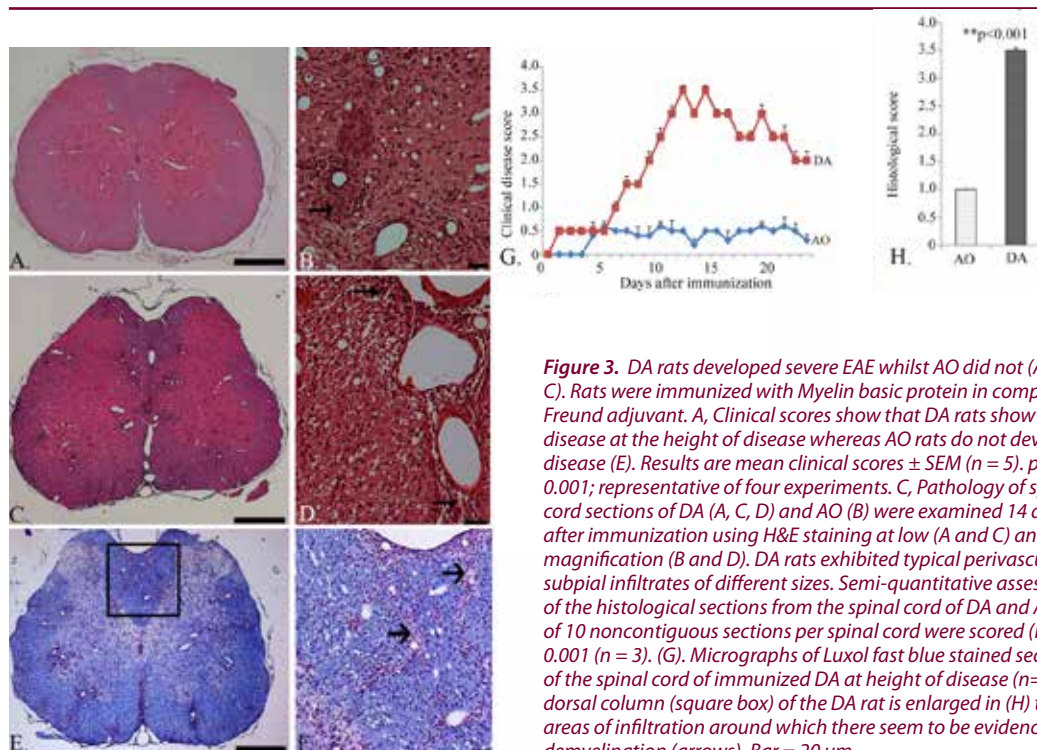


Figure 3. DA rats developed severe EAE whilst AO did not (A, C). Rats were immunized with Myelin basic protein in complete Freund adjuvant. A, Clinical scores show that DA rats show severe disease at the height of disease whereas AO rats do not develop disease (E). Results are mean clinical scores $\pm$ SEM (n = 5). $p < 0.001$; representative of four experiments. C, Pathology of spinal cord sections of DA (A, C, D) and AO (B) were examined 14 days after immunization using H&E staining at low (A and C) and high magnification (B and D). DA rats exhibited typical perivascular and subpial infiltrates of different sizes. Semi-quantitative assessment of the histological sections from the spinal cord of DA and AO rats of 10 noncontiguous sections per spinal cord were scored (F) $p < 0.001$ (n = 3). (G). Micrographs of Luxol fast blue stained sections of the spinal cord of immunized DA at height of disease (n=5). The dorsal column (square box) of the DA rat is enlarged in (H) to show areas of infiltration around which there seem to be evidence of demyelination (arrows). Bar = 20 µm

There is minimal evidence of demyelination that was only present around areas of mononuclear cellular infiltration at the height of clinical disease in DA rats. Demyelination was further confirmed by electron microscope (Fig.4) where myelin fibers around nerve fibers showed evidence

of demyelination significant in DA but absent in AO rats sections. Even though mitochondria seem to be normal in structure; we have noticed that those from spinal cords of diseased DA rats were significantly smaller compared to those from treated but not diseased AO rats.

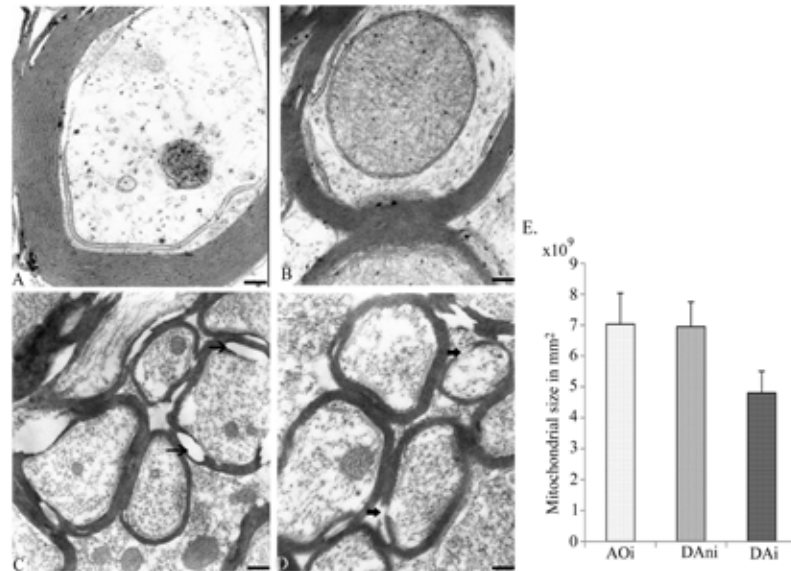


Figure 4: Electron micrographs of sections of the spinal cord of non-immunized DA (A), immunized AO (B), and grade 3 disease DA (C, D) rats. Note the normal myelination of fibers in spinal cords of both non-immunized DA and immunized AO rats (asterisks). Note also the evidence of demyelination in C and D (thin arrows) including splitting of the myelin sheath either at the major dense line or at the intraperiod line and stripping of nerve fibers. Also present are areas of where there seem to be stripping of the nerve fibers of myelin (thick arrows). At sections of spinal cords from immunized DA rats show nerve fibers that are demyelinated (star) and fibers surrounded by with a layer myelin that is disrupted (thin arrows). (E) a graph representing comparing the size of mitochondria in AO with that in DA spinal cords. As shown in E, despite the normal appearance of mitochondria in axons of diseased DA (DAi) rats, they are significantly smaller ($p < 0.005$) compared with those in the axons of immunized AO (AOi) and non-immunized DA (DAi) rats. Bar A, B= 0.1 μ m; C, D=0.5 μ m

Dr Agnes Sonnevend-Pal: main research activities are in the area of molecular epidemiology and antibiotic resistance of human pathogenic bacteria. She studies multi-drug resistant pathogenic bacteria, like *Acinetobacter baumannii*, extended spectrum beta lactamase (ESBL) and carbapenemase producer *Escherichia coli* and other Enterobacteriaceae, methicillin resistant *Staphylococcus aureus* (MRSA), which are the major threat in the hospitals of the UAE and becoming more and more prevalent in the community, as well.

Dr Eyad Elkord: main research interests are in the area of Cancer Immunology and Immunotherapy. His group has special interest in the role and function of immunosuppressive cells (T regulatory cells and myeloid-derived suppressor cells) in cancer.

Recent evidence shows that anti-tumor immunity and cancer immunotherapy are negatively impacted by effects of immunosuppressive cells. We showed that T regulatory cells (Tregs) are expanded in peripheral blood and tumor microenvironment of cancer patients, which correlates with poor prognosis and reduced overall survival. Treg infiltration of tumors is correlated with a lack of some patients' responsiveness to therapy. These observations suggest that Tregs are implicated in the immunopathology of cancer and their specific targeting may improve the efficacy of immunotherapeutic modalities.

Neuropilin 1 (NRP1) is a transmembrane protein with diverse roles in physiological and pathological settings. NRP1 expression has been reported on T cells in inflammatory microenvironments and in secondary lymphoid tissue. Tumor-infiltrating lymphocytes (TILs) play an

important role in cancer prognosis. We showed for the first time that NRP1 is highly expressed on CD3+CD4+ TILs compared to peripheral blood mononuclear cells (PBMCs) (Fig. 5). We also found that NRP1 expression correlated closely with CD25 expression in TILs, and NRP1 was expressed on both Helios+ and Helios–FoxP3-expressing Tregs and on a FoxP3–He-

lios–T cell subset. It was also induced on PBMCs following in vitro co-culture with tumor tissue (Fig. 6). Therefore, NRP1 is upregulated on TILs and can be induced on PBMCs by tumor tissue. Further studies are warranted to define the function of NRP1 on human TILs. As a therapeutic target, NRP1 may allow selective targeting of TIL subsets including suppressive Tregs.

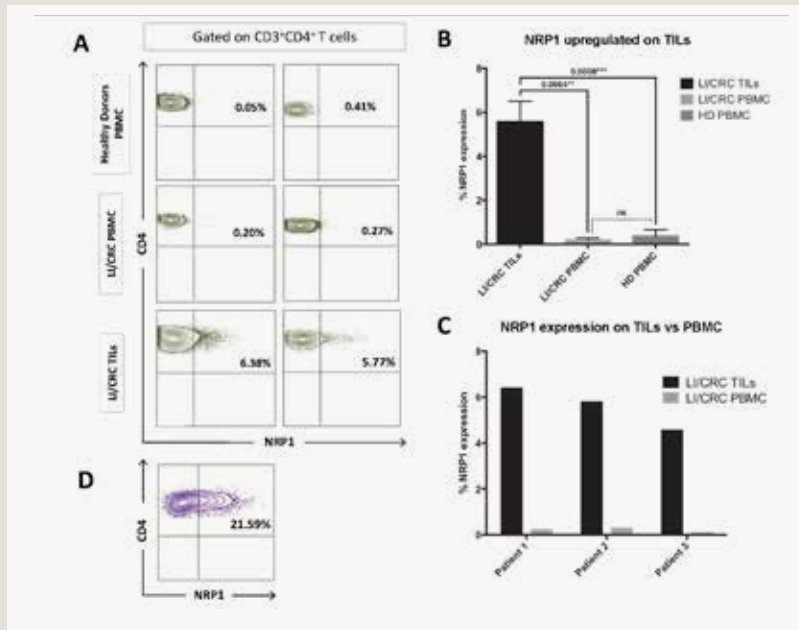


Figure 5: NRP1 expression on CD3+CD4+ TILs. (A) Representative flow cytometric plots showing NRP1 expression on CD3+CD4+ TILs isolated by explant culture compared with CD3+CD4+ PBMCs from both healthy donors and LI/CRC patients. (B) Bar graph comparing mean expression of NRP1 on CD3+CD4+ TILs and PBMCs from patients and healthy donors. (C) Bar chart comparing NRP1 expression on TILs and autologous PBMCs from 3 LI/CRC patients. (D) TILs from one patient showed exceptionally very high levels of NRP1 expression.

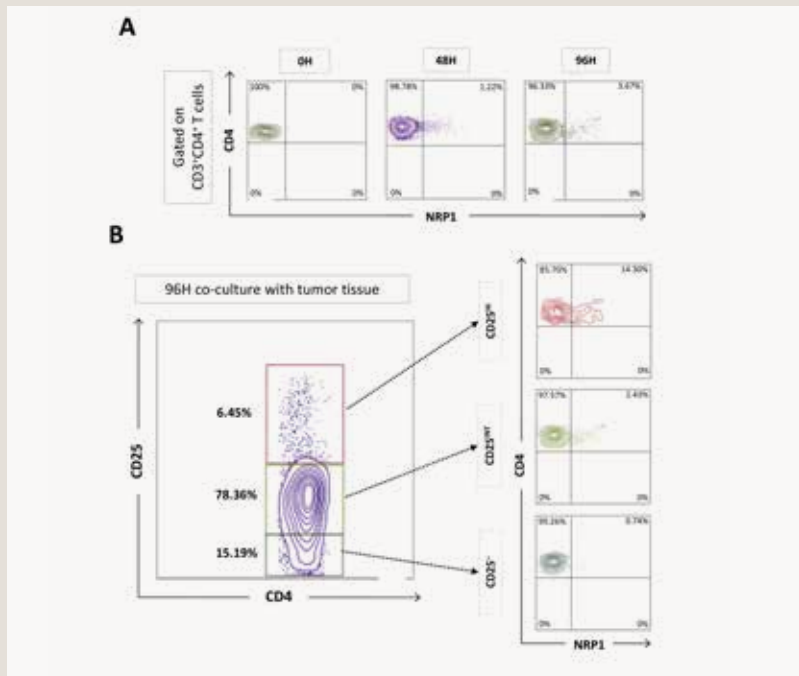


Figure 6: Induction of NRP1 on PBMCs by co-culture with tumor tissue. (A) Cryopreserved PBMCs were thawed and directly stained (0H). PBMCs were also co-cultured with allogeneic tumor tissue and analysed for NRP1 expression after 48H and 96H. NRP1 expression was analysed on CD3+CD4+ T cells. (B) PBMCs co-cultured with allogeneic tumor tissue for 96H were analysed for NRP1 expression on CD3+CD4+ T cells gated for different levels of CD25 expression: CD25 negative (CD25⁻), CD25 intermediate (CD25^{INT}) and CD25 high (CD25^{HI}).

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Aktar SJ, Vivet-Boudou V, Ali LM, Jabeen A, Kalloush RM, Richer D, Mustafa F, Marquet R, Rizvi TA. (2014). Structural basis of genomic RNA (gRNA) dimerization and packaging determinants of mouse mammary tumor virus (MMTV). *Retrovirology*, 11: 96; DOI:10.1186/s12977-014-0096-6, 2014.

Al Ahmad M, Mustafa F, Ali LM, and Rizvi TA. (2014). Virus detection and quantification using electrical parameters. *Sci. Rep*, 4, 6831; DOI:10.1038/srep06831, 2014.

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Dash N, Panigrahi D, Al Zarouni M, Darwish D, Ghazawi A, Sonnevend A, Pal T, Yasin F, Al Hadi S. (2014). High Incidence of New Delhi Metallo-Beta-Lactamase Producing *Klebsiella pneumoniae* isolates in Sharjah, United Arab Emirates. *Microb Drug Res*. 2014 20:52-56.

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Khaled YS, Ammori BJ, Elkord E. (2014) Increased levels of granulocytic myeloid-derived suppressor cells in peripheral blood and tumor tissue of

pancreatic cancer patients. *J Immunol Res*, 2014:879897. doi: 10.1155/2014/879897.

Khan G, Hashim MJ. (2014). Global burden of deaths from EBV-attributable malignancies 1990-2010. *Infect Agents & Cancer*, 2014: 9:38.

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Sharma C, Vas AJ, Goala P, Gheewala TM, Rizvi TA, Husain A. (2014). Ethanolic neem (*azadirachta indica*) leaf extract prevents growth of MCF-7 and HeLa cells and potentiates the therapeutic index of cisplatin. *J Oncol.*, 321754, 2014.

Shablak A, Gilham DE, Hawkins RE, Elkord E. (2014). In vitro effect of IL-2 in combination with pazopanib or sunitinib on lymphocytes function and apoptosis of RCC cells. *Expert Opin Pharmacother*. 15(11):1489-99.

Stulik L, Malafa S, Hudcova J, Rouha H, Henics BZ, Craven DE, Sonnevend A, Nagy E. (2014). α -Hemolysin Activity of Methicillin-Susceptible *S. aureus* Predicts Ventilator-Associated Pneumonia. *Am J Resp Crit Care Med*, 190:1139-48.

Books, Chapters, Reviews and Editorials

Chaudhary B, Khaled YS, Ammori BJ, Elkord E. (2014). Neuropilin 1: function and therapeutic potential in cancer. *Cancer Immunol Immunother*, 63(2):81-99.

Chaudhary B, Abd Al Samid M, al-Ramadi BK, Elkord E. (2014). Phenotypic alterations, clinical impact and therapeutic potential

of T regulatory cells in cancer. *Expert Opin Biol Ther*, 14(7):931-45.

Published Abstracts, Letters and Correspondence

al-Ramadi BK, Kaimala S, Mohammed YA, Issac JM, Elkord E, Chouaib S, Fernandez-Cabezudo MJ. (2014). Targeting of tumor myeloid suppressor cells by *Salmonella* bacteria causes a shift to M1 phenotype and leads to inhibition of tumor growth. *Cancer Research*, 74 (19 Supplement), 3632-3632.

Elkord E. (2014). Thymus-derived, peripherally-derived and in vitro-induced T regulatory cells. *Front Immunol*, 24;5:17.

Elkord E, Abd Al Samid M, Khaled YS, Ammori BJ. (2014). FoxP3+Helios+, but not FoxP3+Helios-, Tregs express GARP and LAP, representing the expanded subpopulation in pancreatic cancer patients. *J Immunol*, 192:71.35.

Proceedings, Conferences, Invited Lectures, Web Sites and Others

Proceedings, Conferences, Invited Lectures, Web Sites and Others
Al-Barazie R, Bashir G, al-Ramadi BK, Fernandez-Cabezudo MJ. (2014). Mechanisms underlying control of anti-microbial immunity by acetylcholine esterase inhibition. The 9th International Scientific Conference for Medical Students in the GCC Countries, Al-Ain, UAE, December 26-29.

Al-Dhaheeri M, Mohammed YA, Fernandez-Cabezudo MJ, al-

Ramadi BK. (2014). Intravenous administration of manuka honey as adjuvant therapy in combination with chemotherapy inhibits tumor growth and improves host survival in colon carcinoma mouse model. The 9th International Scientific Conference for Medical Students in the GCC Countries, Al-Ain, UAE, December 26-29.

Al-Dhanhani A, Mohammed YA, Sarawathiamma D, Merin J, Fernandez-Cabezudo MJ, Haik Y, al-Ramadi BK. (2014). Systemic exposure to metallic nanoparticles initiates an acute, inflammasome-mediated, inflammatory response. The 9th International Scientific Conference for Medical Students in the GCC Countries, Al-Ain, UAE, December 26-29.

Al Ramadi BK.(2014). Regulation of autoimmunity by MyD88-Toll-like receptor signaling pathway. Invited Speaker, Division of Chemistry, Faculty of Science, New York University, Abu Dhabi, UAE, Nov 27, 2014.

Al Ramadi BK.(2014). Targeting tumor myeloid suppressor cells as a novel approach in cancer immunotherapy. Invited Speaker, Department of Pathology, Faculty of Medicine, University of Jordan, Amman, Jordan, April 2.

Elkord E, Abd Al Samid M, Khaled YS, Ammori BJ. (2014). Presentation at the American Association of Immunologists Annual Meeting, Pittsburgh, USA, May 2-6.

Fernandez-Cabezudo MJ, al-Ramadi BK, Faour I, Bashir G, Kassis A, Al-Marzooqui S, Al Bawardi A, Hashim MJ, Rincon M, El-Salhat H, El-Taji H, Jaloudi M. (2014). MCJ protein as a novel resistance biomarker in human breast cancer. Hallmarks of Cancer: Asia, Beijing, China, November 9-11.

Fortini D, Galetti R, Sonnevend A, Ghazawi A, Pal T, Feudi C, Villa L, Al-Jardani A, Al-Abri S, Carattoli A.(2014). A novel IncN2 plasmid conferring carbapenem resistance by the blaVIM-4 gene identified in *Enterobacter cloacae* from the Sultanate of Oman - 24th European Congress of Clinical Microbiology

and Infectious Diseases, Barcelona, Spain

Khan G, Ahmed W, Philip PS, Tariq S. (2014). Epstein-Barr virus-encoded small RNAs (EBERs) are excreted via exosomes from EBV-immortalized cells. 17th Annual Meeting of the European Society of Clinical Virology, Prague, Czechoslovakia, 29th Sept-1st Oct.

Lizna M. Ali, Kalloush R, Jabeen A, Suriya J. Aktar, Mustafa F, Rizvi TA. (2014). Role of purine rich sequences in Mason-Pfizer monkey virus (MPMV) genomic RNA packaging. Accepted for presentation at the annual retrovirus meeting of the Cold Spring Harbor Laboratory, New York, May.

Pal T. (2014). Laboratory contribution to infection control – a multi-level task. Patient Safety Conference Abu Dhabi, March 19.

Pál T, Sonnevend A, Ghazawi A, Darwish A, Hashmey R, Jamal W, Rotimi V, Al-Jardani A, Al-Abri S, Shibl A (2014). Characterization of carbapenem resistant Enterobacteriaceae isolated in four countries of the Arabian Peninsula - 24th European Congress of Clinical Microbiology and Infectious Diseases, Barcelona, Spain

Sonnevend A. (2014). Nosocomial spread of carbapenem resistant Gram-negative bacteria – tackling a major challenge in infection control– Patient Safety and Quality Congress Middle East 2014, Abu Dhabi, UAE

Sonnevend A, Ghazawi A, Darwish D, Villa L, Carattoli A, Al-Jardani A, Al-Abri S, Pál T. (2014). Characterization of *Escherichia coli* carrying blaNDM-7 from the Sultanate of Oman - 24th European Congress of Clinical Microbiology and Infectious Diseases, Barcelona, Spain



RESEARCH GRANTS

CMHS Research Grants

Dr A Sonnevend [PI]
The genetic background of nanoparticle susceptibility in *Staphylococcus aureus* biofilms NP/14/29
Dr E Elkord [PI]
Levels of myeloid-derived suppressor cells in peripheral blood and tissue of breast and colorectal cancer patients.

Dr G Khan [PI]
Mechanism of excretion of Epstein-Barr virus encoded small RNAs from immortalised cells

Prof TA Rizvi [PI]
Identification and characterization of genomic RNA packaging enhancer (GRPE) sequence and its role in feline immunodeficiency virus (FIV) RNA packaging.

Prof T Pal [PI]
Molecular background of colistin resistance in emerging pan-resistant Enterobacteriaceae in Abu Dhabi

Sheikh Hamdan Award for Medical Sciences

Prof B al-Ramadi [PI], Dr MJ Fernandez-Cabezudo
Obesity as a potentiating factor in tumor development: Implications for cancer immunotherapy.

Dr MJ Fernandez-Cabezudo [PI], Prof B al-Ramadi.
Neuro-immune modulation of inflammatory diseases: potential role in the amelioration of diabetes.

Terry Fox Fund for Cancer Research

Prof B al-Ramadi [PI] , Dr MJ Fernandez-Cabezudo
Inactivation of myeloid-derived suppressor cells as a novel target for enhancing cancer immunotherapy.

Dr E Elkord [PI]
Differential characterization of T regulatory cells in cancer patients compared to healthy individuals

Prof TA Rizvi [PI]
Title: "Structural and functional

analysis of the Rem-responsive elements (RmREs) of mouse mammary tumor virus (MMTV): Implications for developing new generation vectors for cancer gene therapy”.

Prof TA Rizvi [PI]
Co-packaging and Recombination among Genetically Distinct Retroviruses: Implications for the Development of Retroviral Vectors for Gene Therapy

Prof T Pal [PI]
Molecular Features of ESCAPE Pathogens Causing Blood-stream Infections in Patients with Malignancies -A Multidisciplinary Study

National Research Foundation / UAE University

Dr A Sonnevend [PI]
The genetic environment of NDM gene in Enterobacteriaceae: its effect on the gene expression and on the spread of resistance.

Prof B al-Ramadi [PI], Dr MJ Fernandez-Cabezudo
Obesity as a potentiating factor in tumor development: Implications for cancer immunotherapy.

Dr MJ Fernandez-Cabezudo [PI], Prof B al-Ramadi
Neuro-immune modulation of inflammatory diseases: potential role in the amelioration of diabetes.

Dr E Elkord [PI]
Differential characterization of T regulatory cells in cancer patients compared to healthy individuals

Dr E Elkord [PI]
Investigations into the role and function of immunosuppressive cells in colorectal and breast cancers.

Dr E Elkord [PI]
Neuropilin1 in tumor-infiltrating lymphocytes: A potential therapeutic target in cancer

Prof I Zuburtikudis, Dr E Elkord
Optimized chitosan-based biopolymer nanofibrous materials for anti-tumor activity.

Dr G Khan [PI], Prof T Adrian, Dr S Attoub
Impact of Epstein-Barr virus small RNA (EBER-1) on genes associated with inhibition of apoptosis.

Prof TA Rizvi [PI]
Existence and biological significance of long-range interactions (LRIs) in retroviral RNA packaging signals: Implications for developing vectors for gene therapy.

Prof T Pal [PI]
Disinfectant-driven selection of efflux pump-mediated antibiotic resistance in multi-drug resistant pathogens - a molecular study

Others

Prof T Pal [PI]
Molecular basis of ertapenem resistance among Enterobacteriaceae isolated in the Arabian Peninsula.
Merck Sharp & Dohme (MSD) Grant.



2014

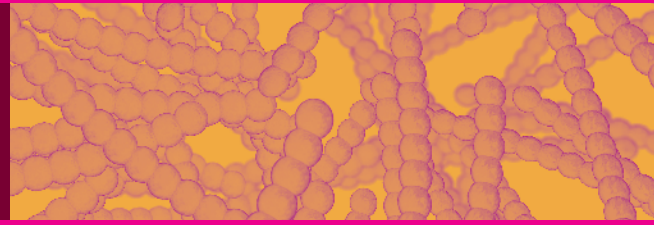
Medical Microbiology & Immunology



Standing left to right:
Mr. Mohamed Al-Haj, Mr. Allen Shahin, Mr. Yassir Awad, Professor Tahir Rizvi, Dr. Ahmed Al Qahtani, Dr. Gulfaraz Khan, Professor Tibor Pal, Dr. Eyad Elkord, Mr. Mohammed Hashik

Seated left to right:
Ms. Ghada Bashir, Dr. Maryam Al Shamsi, Professor Basel al-Ramadi, Dr. Zakeya Al Rasbi, Ms. Akela Al-Ghazawi, Dr. Agnes Sonnevend-Pal, Ms. Lizna Ahmed

Department of Obstetrics & Gynaecology



Research Profile

The Research interests in the department are in Obstetrics, Fetal Medicine, and Minimal Access Gynecology Surgery and in Women's Health Education.

Dr Shamsa Al Awar's major area of research of interest is

- Fetal abnormality.
- Maternal health.
- Placental perfusion.
- General women and community health initiatives.

Dr Hisham Mirghani's major area of research of interest is

- Fetal growth behavior during maternal fasting.
- Fetal growth and pregnancy outcome in GDM.
- Fetal abnormalities
- Placenta perfusion studies
- Medical education: learning style and acquisition of clinical skills

Dr Osman Ortashi's major area of research of interest is

- Gynecology and gynecological cancers. His research is focusing on cervical cancer prevention and Human Papilloma Virus related cancers and diseases.
- Knowledge, attitude & practice towards the Human Papillomavirus infection & vaccine.
- Cervical screening

Dr Hassan M Elbiss' major area of research of interest is

- Urogyneacology, minimal access surgery, in-vitro human placenta perfusion
- Epidemiology of Pelvic Floor Dysfunction
- Management of Pelvic Floor Dysfunction
- Gynaecological laparoscopic surgery
- Gynae-oncology

Assistant Professor and Chair:

Dr S Al Awar

Associate Professor:

Dr H Mirghani

Assistant Professor:

Dr H Elbiss

Dr O Ortashi

Medical Research Specialist II:

Dr N Osman

Medical Research Assistant:

Ms Z H Balayah

Administrator:

Ms S Al Yahyaee

Articles in Peer-reviewed Journals

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Ortashi O, Raheel H, Shalal M. (2014). Acceptability of human papilloma virus vaccination among women in the United Arab Emirates. *Asian Pacific J Cancer Prev*, 15(5):2007-11

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Elbiss HM, Osman N, Hammad F. (2013). Prevalence, risk factors, social impact and healthcare seeking behaviour of symptoms of genital prolapse among Emirati women. *Annual Meeting of the American-Urological-Association (AUA)*, San Diego, CA, USA, May 04-08. *Journal of Urology*, 189:4, Supplement: S, E876-E876, Abstract: 2140

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Proceedings, Conferences, Invited Lectures, Web Sites and Others

Al Awar S. (2014). Maintenance of Certification Workshop, 4th May 2014, Baltimore, USA.

Al Awar S. (2014). American Board Review Course, 5-9th May 2014, Baltimore, USA

Al Awar S. (2014). HPV vaccine, "Do we need it", ADNOC, UAE, March 2014.

Al Awar S. (2014). The origin of health & diseases, Global initiative for Family friendly workplace, Dubai, March 2014.

Al Awar S. (2014). Toward bright full MD Career, CMHS students, UAEU, March 2014.

Al Awar S. (2014). When Health & Disease Begin, Vale Oman, Sultanate Of Oman, April 2014.

Al Awar S. (2014). Medical Career, CMHS, April 2014.

Al Awar S. (2014). When Health & Disease Begin, Omani Women Association, Shinas, Sultanate Of Oman, May 2014.

Al Awar S. (2014). Breast and cervical cancer prevention at Sh Sabha Bint Awaidah Center, Al Ain, June 2014.

Al Awar S. (2014). Cervical cancer vaccination & prevention workshop, HAAD initiative, Abu Dhabi, Sept. 2014.

Al Awar S. (2014). The Origin of Health & Diseases, 2014

Al Awar S. (2014). The dark side of Twins, 2014

Al Awar S. (2014). Toward bright full MD Career, 2014

Al Awar S. (2014). Multiple women health issues related TV interviews

Al Awar S. (2014). Organizing cervical cancer prevention campaign with HAAD

Al Awar S. (2014). Third Qatar Male Infertility Conference 13-15 Feb. 2014, Doha, Qatar.

Al Awar S. (2014). Saudi OB/Gyn Annual Association meeting, 1-3 April, 2014. Jeddah, KSA.

Al Awar S. (2014). Bright Start Conference, 7&8 Dec., 2014, Sharjah, UAE. [Organizer of the Conference and Chair of local Scientific Committee]

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Mirghani HM. (2014). Congenital Malformations: CNS Malformations. The contribution of ultrasound in the diagnosis of High Risk Pregnancy. Management of Rhesus Isoimmunization. Kuwait University OBGYN Internal Conference. Update in High Risk Obstetrics, 23-25 March, 2014.

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Mirghani HM. (2014). 24th World Congress on Ultrasound in Obstetrics and Gynecology in Barcelona, Spain; 14 - 17 September 2014.
Ortashi O. (2014). International Gynecological Cancer Society meeting, Cape Town, April 2014.

Ortashi O. (2014). HAAD cervical cancer workshop (more than three times)

Ortashi O. (2014). Abu Dhabi Second International Oncology Conference, UAE, Oct 2014.



RESEARCH GRANTS

CMHS Research Grants

Dr H Elbiss (PI)

Placental transport of Solifacin and potential effect on placenta structure

UAE University Program for Advanced Research

Dr H Mirghani (PI)

The transport of sotalol and flecainide across the placenta: ex-vivo human placenta perfusion study.

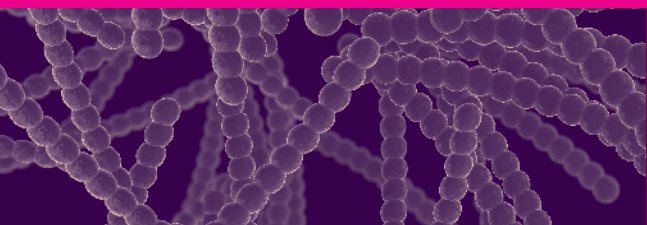
UAE University Program for Advanced Research

Dr S Al Awar (PI)

Paracetamol as Over-Counter-medicine (OTC) in Pregnancy.



2014
Obs & Gyn



Department of Paediatrics

Research Profile

Professor & Chair
Prof A-K Souid
Professors
Prof YM Abdulrazzaq (Emeritus)

Prof L Al-Gazali

Prof H Narchi

Associate Professor

Dr E Aburawi

Dr S Al-Hammadi

Dr F Al-Jasmi

Assistant Professor

Dr J Suleiman

Dr A Al-Suwaidi

Teaching Assistant

Dr N Al Dhaheri

Dr F Al Dhaheri

Dr F Ismail

Research Medical Specialists

Mr T Pramathan

Research Nurse

Ms S Al Hamad

Research Assistant

Mr A Diab

Medical Secretary

Ms S Alketbi

Academic staff in the Department of Pediatrics pursue research that promotes child health. Progress has been made in several areas, such as genetic disorders, inborn errors of metabolism, pathogenesis of viral infections, nanotoxicology, vitamin D deficiency, immunization gaps, and animal models of human diseases, such as multiple sclerosis, RSV and influenza infections.

The familial and sporadic forms of cerebral dysgenesis have been investigated at a molecular level. A newly recognized type of agyria-pachygyria associated with agenesis of the corpus callosum has also been delineated. The severe form of myotonia with bone dysplasia [Stüve-Wiedemann Syndrome (SWS)] has been identified to be common in the UAE. A founder mutation in the leukemia inhibitory factor receptor (LIFR) has been discovered in all families with SWS. The gene for Joubert syndrome has been mapped to 9q34.3, and its genetic heterogeneity has been established. A newly recognized type of epiphyseal dysplasia has been described, mapped to 15q26.

Our group has published studies describing the prevalence of metabolic and genetic disorders in the UAE. A low rate of lymphocyte respiration has been identified in children with trisomy 21. The group investigated why some anti-epileptic drugs (e.g., vigabatrin and lamotrigine) ingested by women during pregnancy cause neural tube and other defects. These drugs are found to be teratogenic. Methionine on average was 5 times lower in the embryos of treated pregnant mice than in non-treated controls. Studies are ongoing to determine the impact of folic acid and vitamin B12 supplementations on the frequency of these anomalies in the animal model.

Aflatoxins, commonly found in nuts and grains, are found to be increased in pregnant women and their offspring. The immunosuppressive effect of aflatoxin B1 in human lymphocytes has been described.

The bioenergetics and apoptosis of gastric epithelium have been investigated in stomach biopsies from adults. The average rate of gastric epithelium oxygen consumption was found to be $0.18 \pm 0.04 \mu\text{M O}_2 \text{ min}^{-1} \text{ mg}^{-1}$ and cellular ATP $173 \pm 101 \text{ pmol mg}^{-1}$.

The effects of various cytotoxic agents on human and animal tissues are also being investigated. Human lymphocytes, fibroblasts, foreskin, and gastric epithelium are used for this purpose. Animal tissues are also used, such as murine and rat hepatocytes, cardiomyocytes and pneumocytes. The studied toxins and drugs include novel nanoparticles, aflatoxin B1, dactinomycin, doxorubicin, atorvastatin, sorafenib, regorafenib, Pi3K and MEK inhibitors, metformin, valproate, HIV drugs, zoledronic Acid, buformin, salbutamol sulphate, and platinum-based compounds. The toxic effect of ammonia is being investigated in murine brain. Blood count reference intervals have been established for the neutrophil, lymphocyte and erythroid lineages from birth to 6 years of age. The prevalence of latent TB infection in pediatric patients has also been established. A national survey for patients with Down Syndrome and its associated problems has been conducted. The study assessed the prevalence of overweight/obesity and established the reference values for body mass index (BMI) percentile curves for Emirati children with uncomplicated Down syndrome. The study also included the epidemiology of congenital heart disease in these children. Pediatric studies are ongoing to assess cardiovascular risks of diabetes mellitus.

With a high parental refusal rate for procedures on their children, a study has been conducted to compare the underlying factors behind parental refusal or consent for lumbar puncture.

The association of uric acid urolithiasis with rotavirus gastroenteritis recently described in Japan has been investigated in our pediatric inpatient community.

Several studies on the clinical picture, outcome and several selected complications of bronchiolitis are currently underway.

We are currently investigating the value of serum cytokines, metalloproteinases and heat shock proteins in children to differentiate early between Kawasaki disease and pyrexia of infectious causes.

A study is being carried out to look into the proportion of renal scarring and urological anomalies that can be missed by implementing the

NICE or the AAP guidelines for imaging children with urinary tract infections.

In view of the high prevalence of hypovitaminosis D in young pregnant women, a population-based study on the status of vitamin D levels among female adolescents has been completed, showing a very high prevalence. This information will lead to the development of interventional studies, aimed at achieving normal vitamin D status in women prior to pregnancy. A collaborative study with the department of physics at the UAE University and neonatal units in UK hospitals has looked at the value of computerized texture analysis of "flares" on neonatal cranial ultrasound. We found this new technology to be highly predictive of lesions which will eventually develop into periventricular leukomalacia with poor neurodevelopmental prognosis. With this new technology, the results are apparent several weeks before changes can be seen on other imaging modalities.

Research in medical education has looked at the content validity comparison between the in-house and the NBME pediatric examinations. Clinical research is conducted by faculty in collaboration with both Tawam and Al Ain Hospital to study autoimmune mechanisms in children with epilepsy and encephalopathies. Auto antibodies against specific neuronal channels and receptors have been found in a subgroup of these patients.

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Ma'ayan A, Marshall CR, McInnes AL, Neale B, Owen MJ, Ozaki N, Parellada M, Parr JR, Purcell S, Puura K, Rajagopalan D, Rehnström K, Reichenberg A, Sabo A, Sachse M, Sanders SJ, Schafer C, Schulte-Rüther M, Skuse D, Stevens C, Szatmari P, Tammimies K, Valladares O, Voran A, Wang LS, Weiss LA, Jeremy Willsey A, Yu TW, Yuen RK; DDD Study; Homozygosity Mapping Collaborative for Autism; UK10K Consortium; Autism Sequencing Consortium, Lehner T, Palotie A, Schellenberg GD, Sklar P, State MW, Sutcliffe JS, Walsh CA, Scherer SW, Zwick ME, Roeder K. Synaptic, transcriptional and chromatin genes disrupted in autism. *Nature*, Nov 13;515(7526):209-15. Epub 2014 Oct 29

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Reiff RE, Ali BR, Yu TW, Ben-Salem S, Coulter ME, Schubert CR, Hill RS, Akawi NA, Evrony GD, Al-Saffar M, Felie JM, Partlow JN, Sunu CM, Alkuraya FS, Meyer BF, Walsh CA, Al-Gazali L, Mochid GH (12 Senior Authors). HMETTL23, a Transcriptional Partner of GABPA, Is Essential for Human Cognition. *Hum Mol Genet*, 23(13):3456-3466. 2014 Feb 19 [Epub ahead of print]

Salem S B, Al-Shamsi A, Gleeson J, Ali BR, Al-Gazali L. (2014). Mutations spectrum of Joubert Syndrome and joubert related disorders in Arabs. *Hum Genome Variation*. Published online 2014; Nov 6

Suleiman J, Dale R. (2014). Recognition and treatment of autoimmune epilepsy in children (Review). *Dev Med Child Neurol*, 2014 Dec 8. doi: 10.1111/dmcn.12647. [Epub ahead of print]

Published Abstracts, Letters, Correspondence

Akawi N, Ali B R, Al-Gazali L. (2013). A response to Dr. Alzahrani's letter to the editor regarding the mechanism underlying fibrochondrogenesis. *Gene*, 10; 528; 367-368.

El Oakley RM, Ghrew MH, Aboutwerat AA, Alageli NA, Neami KA, Kerwat RM, Elfituri AA, Ziglam HM, Saifenas AM, Bahron AM, Aburawi EH, Sagar SA, Tajoury AE, Benamer HT. (2013). Consultation on the Libyan health systems: towards patient-centred services. *National Health Systems Conference*. Libyan J Med;8.



Proceedings, Conferences, Invited Lectures, Websites etc.

Aburawi EH. (2014). Case Scenarios, Emergency Respiratory Cases. Advanced Pediatric Emergency Care (APEC). The 3rd Global Network Conference on Emergency Medicine (GNEM). Sheikh Mohammed Bin Rashid Academic Medical Centre, Dubai Healthcare City, Dubai, UAE, 25 – 29 April, 2014. Invited Speaker

Aburawi EH. (2014). Management of series Arrhythmias in Infants & Children. Advanced Pediatric Emergency Care (APEC). The 3rd Global Network Conference on Emergency Medicine (GNEM). Sheikh Mohammed Bin Rashid Academic Medical Centre, Dubai Healthcare City, Dubai, UAE, 25 – 29 April, 2014. Invited Speaker,

Aburawi EH. (2014). Fluid Management in Pediatrics, How Should We Proceed? Advanced Pediatric Emergency Care (APEC). The 3rd Global Network Conference on Emergency Medicine (GNEM). Sheikh Mohammed Bin Rashid Academic Medical Centre, Dubai

Healthcare City, Dubai, UAE, 25 – 29 April, 2014. Invited Speaker
Aburawi EH. (2014). Self-assessment Accuracy: the influence of gender and year in medical school self-assessment, 1st GCC Conference. Evidence Based Healthcare Professional Development, Kuwait. October 19 – 20, 2014. Invited Speaker

Narchi H. (2014). Missed abnormalities with the NICE and AAP guidelines for imaging after UTI. The 8th Tawam International Pediatric Conference.

Narchi H. (2014). Hypovitaminosis D and its risk factors in female adolescents in the UAE. The 8th Tawam International Pediatric Conference.

Narchi H. (2014). Lymphocyte count in infants and young children by age and nationality in a large cohort. The 8th Tawam International Pediatric Conference. Uric acid excretion in rotavirus gastro-enteritis. The 8th Tawam International Pediatric Conference.

Narchi H. (2014). Epidemiology of bronchiolitis- Tawam hospital. The 8th Tawam International Pediatric Conference.

Narchi H. (2014). Hyponatremia in bronchiolitis- Tawam hospital experience. The 8th Tawam International Pediatric Conference.

Narchi H. (2014). Thrombocytosis in bronchiolitis- Tawam hospital experience. The 8th Tawam International Pediatric Conference.

Suleiman J. (2014). Epilepsy in Children, Practical & Up-to-date Overview. Excellence in Pediatrics (EiP) conference, Dubai, UAE, Dec 2014. Invited Speaker

Suleiman J. (2014). Workshop: Pediatric Neurologic Examination. Excellence in Pediatrics (EiP) conference, Dubai, UAE, Dec 2014. Invited Speaker

Suleiman J. (2014). Pediatric Neurology: Cases from Clinical Practice. The 2014 Neuroscience Update, American Centre for Psy-

chiatry and Neurology Dubai, UAE, May 2014. Invited Speaker

Suleiman J. (2014). Autoimmune Epilepsy in Children. 7th IGAKUKEN International Symposium on "Fever, Inflammation, and Epilepsy". Tokyo, Japan, Feb 2014. Invited Speaker

Suleiman J. (2014). Autoimmune encephalitis. Third Emirates International Pediatric Neurology (EIPN) Conference, Dubai, UAE, Feb 2014. Invited Speaker

Suleiman J. (2014). Neuronal Antibodies in Pediatric epilepsy. Third Emirates International Pediatric Neurology (EIPN) Conference, Dubai, UAE, Feb 2014. Invited Speaker



RESEARCH GRANTS

CMHS new Research Grant

Drs EH Aburawi (PI), S Emerald, S Ojha.
Profiling the role of miRNAs 19 and 29 and its isoforms in Emirati patients with Diabetes Mellitus.

Dr J Suleiman (PI)
Neuronal Antibodies in Pediatric Encephalitis in UAE

UPAR (United Arab Emirates Advanced Research Program)

Dr J Suleiman (PI)
Autoimmune epilepsy and Encephalitis in UAE

Sheikh Hamdan Award for Medical Sciences

Drs EH Aburawi (PI), J Alkaabi, A Shehab, Prof. B Ali, F Al Darmaki, H Al Saadi.

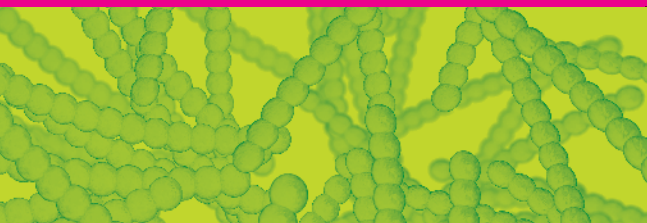
Cardiovascular Diseases Risk Factors in UAE adolescents and young adults with type 1 and type 2 Diabetes Mellitus. [Extension – 2014].

Emirates Foundation Grant

Dr EH Aburawi (PI), Profs Y Abdulrazzaq, N Nigelkerk.
National Survey of Down syndrome and its associated Problems. [Extension – 2014].



2014
Paediatrics



Department of Pathology

Research Profile:

Assistant Professor and Chair:

Dr S Almarzooqi

Professor:

Prof M Agarwal

Prof B Ali

Associate Professor:

Dr S Al Salam

Assistant Professor:

Dr A Albawardi

Medical Research Specialist:

Ms A J Mathew

Ms M Sudhadevi

Ms Dhanya S

Secretary:

TBA

Pathology is a science that relies on detecting gross organ abnormalities and documenting microscopic structural tissue changes that underlie disease. Pathology is the link between basic medical sciences and clinical practice. It provides an in-depth understanding of disease or pathogenesis. The contribution of pathology in research is varied and spans across basic laboratory and animal research to clinical trials. The focus of the research in the department is on genetic diseases, chronic diseases (e.g. diabetes mellitus) and malignancy. Research on neoplasms addresses pathogenesis, diagnosis and treatment.

Prof. Mukesh M. Agarwal - Clinical chemistry:

In the UAE, the prevalence of diabetes mellitus (DM) is amongst the highest in the world. This remains a major epidemiological challenge for the country. Multiple studies agree that aggressive life-style changes (after delivery) in women with gestational diabetes (GDM) can delay and even prevent the onset of Type 2 DM. Much of our research efforts are directed to GDM. We are continually studying the value of various simple screening tests, which have a high degree of sensitivity. Ultimately, not missing any pregnant woman with GDM will help us to start prevention for DM after childbirth. This will attain our ultimate objective: to decrease the epidemic of Type 2 DM in the UAE.

Prof. Bassam Ali - Human Genetics

1. Identification of the molecular defects underlying single gene disorders in the UAE and Arab populations.

Recessive disorders are highly prevalent in Arab populations including UAE mainly due to high levels of consanguinity and lack of prenatal and/or pre-conception diagnosis. We are developing

a molecular genetics research laboratory to look at the molecular defects causing recessive disorders found in the UAE population with emphasis on mental retardation phenotypes, metabolic and dysmorphology disorders. We are collaborating with major research groups at Harvard Medical School (USA), University of California in San Diego USA), King Faisal specialist Hospital and Research Center (KSA) and Sultan Qaboos University (Oman).

2. The cellular mechanisms of human monogenic disorders.

We are interested in protein trafficking and quality control within eukaryotic cells. The protein quality control at the endoplasmic reticulum level is responsible for the development of several human genetic diseases including cystic fibrosis and emphysema. We recently elucidated the cellular mechanisms underlying Robinow syndrome and Acromesomelic Dysplasia type Maroteaux, recessive disorders that has been found in several parts of the Middle East including Oman and Saudi Arabia. We are currently looking to establish the mechanisms underlying Familial Hypercholesterolemia, Hereditary Hemorrhagic Telangiectasia and other ER-associated degradation diseases. In addition, we are exploring ways of manipulation ER quality control for potential therapy of such diseases.

3. Pharmacogenetics and pharmacogenomics

We are interested in establishing the alleles and genotypes frequencies of the genes encoding important drug metabolizing enzymes among UAE and Arab populations.

Dr. Suhail Al-Salam – Histopathology/ Renal pathology and CNS pathology

1. Role of Galectin-1 and Galectin-3 in Breast carcinoma chemoresistance.

Breast carcinoma is the most common malignant neoplasm and the second cause of cancer death in women worldwide. It is the commonest cancer among the UAE population and the most common cancer among females. Despite all the advances in early detection, drug resistance is a major problem in our battle against cancer. Galectin-1 (Gal-1) and Galectin-3 (Gal-3) are members of the beta-galactoside-binding family and they play a role in cell proliferation, adhesion, and migration. Both of them have antiapoptotic function hence they can play a role in cancer chemoresistance. Cancer chem-

oresistance will lead to cancer recurrence and increased mortality and morbidity. This project is aimed at carrying out a prospective study to determine the role of Gal-1 & 3 in breast cancer chemoresistance with the aim of establishing Gal-1 and Gal-3 expression as a biomarker for drug resistance if successful, this would establish Gal-1&3 expressions as a key prognostic marker for evaluating treatment success in breast carcinoma.

2. Role of Trefoil Factor Peptides in the Development and Progression of Glioma.

Gliomas are the most common primary central nervous system tumors. They are the second most common cancer among children in UAE. They are graded into four grades from grade 1 which is the most benign to grade 4 which is the most malignant. They are characterized by progression from low grade to high grade within the same tumor. This progression is not well understood. Furthermore, the pathogenesis of glioma is obscure. Several studies have shown the transforming potential of TFF peptides which is illustrated in tissues involved in cancer progression, while other studies have shown tumor suppressor action of TFF peptides. How can the apparent contradiction between the tumor-promoting and tumor-suppressing functions of TFF peptides be resolved? We hope that this project will answer some of these queries. There are nearly no published data concerning the expression of TFFs in human gliomas. In addition there were no previous reports concerning the role of trefoil factors in the pathogenesis or progression of glioma.

3. Hypoxic signals in myocardial Ischemia. Coronary heart disease is a major cause of death in the United Arab Emirates.

Hypoxia is an integral component of myocardial ischemia/infarction. Hypoxia triggers multiple signaling pathways in cardiac cells that cause them to adapt and subsequently survive ischemia. Our research will address mechanism of this hypoxic damage by investigating the role of HIF-1 α and its targets in animal models. Our preliminary data has shown that HIF-1 α is expressed by human and mouse cardiac myocytes in early ischemia. We hypothesized that in hypoxic myocardium, the robust expression of HIF-1 α serves to maintain expression of proteins which promote cell survival. We expect that this study will elaborate on the proposed

protective role of these proteins in the heart and determine if they have diagnostic or therapeutic potential in the future.

Dr. Alia Al Bawardi - Histopathology/ Breast pathology/ Renal Pathology

1. Murine model for nephrotoxicity and cytoprotection.

Diabetes and hypertension are common comorbidities, with both adversely affecting renal function. Nephrotoxic drugs are frequently used in clinical practice to manage a wide spectrum of diseases from simple bacterial infection to cancer. The study aim is to develop a murine model for assessing nephrotoxicity and cytoprotection. The nephrotoxicity will be induced by drugs and bacteria. The cytoprotection will be conferred by thiol agents. The following biomarkers will be monitored; cellular bioenergetics, caspase activity, and glutathione and histopathology and electron microscopy.

2. Assessing the cytotoxicity of anticancer Therapies Targeting Cell-signaling.

Several studies have confirmed the link between human carcinogenesis and molecular aberrations in cellular signaling pathways. For example, key mutations in Ras/Raf/MED/ERK or PI3K/PTEN/Akt/mTOR are implicated in the pathogenesis of numerous human epithelial cancers. Therefore, targeting these pathways with specific inhibitors of RAS, ERK, PI3K, AKT and/or mTOR is expected (and has been proven in some tumours) to control the disease. The research involves studying the cytotoxicity of targeted anticancer agents (e.g., inhibitors of PI3K, AKT, mTOR and MEK) in fresh samples of human epithelial tumors.

3. Investigation the role of Mouse Mammary Tumor Virus (MMTV).

Presence in the UAE Population. Breast cancer is a leading cause of mortality among women worldwide. In the UAE, it has been on the rise with a higher incidence in young women. Being a multifactorial disease, it is critical that we understand the risk factors that are at play so that one can begin to address the source of its induction/ development within the UAE and globally. We aimed to assess the role of mouse mammary tumor virus (MMTV) in this disease. MMTV has been conclusively shown to be the causative agent of breast cancer not only in mice, but a distinct possibility exists that a

virus similar to MMTV, human mammary tumor virus (HMTV), may have a role to play in human breast cancer as well. An increasing number of studies in the past few years have reported the detection of MMTV-like sequences in specific world populations with breast cancer; however, the results have been controversial due to many reasons, including differences in techniques, severity/type of cancer, and differences in geography. The study aims at looking at a large number of breast cancer cases to assess its association or lack of as a causative agent in breast cancer in the UAE.

Dr. Saeeda Almarzooqi - Histopathology/ gynaecological and paediatric Pathology

1. Cytotoxicity Analysis of Anticancer Therapies Targeting Cell-signaling.

Key mutations in Ras/Raf/MED/ERK or PI3K/PTEN/Akt/mTOR are implicated in the pathogenesis of numerous human epithelial cancers. Targeting these pathways with specific inhibitors of RAS, ERK, PI3K, AKT and/or mTOR is expected to control the disease.

2. Investigation of Mouse Mammary Tumor Virus (MMTV) Presence in the UAE Population:

A Putative Viral Agent in Human Breast Cancer. Breast cancer is a multifactorial disease, current study investigate the role of mouse mammary tumor virus (MMTV). MMTV has been conclusively shown to be the causative agent of breast cancer not only in mice, but a distinct possibility exists that a virus similar to MMTV, human mammary tumor virus (HMTV), may have a role to play in human breast cancer as well.

3. Oral and laryngeal squamous cell carcinoma:

The prevalence of high risk human papilloma viruses (HPV) in United Arab Emirates population. Background: High risk human papillomaviruses causes anogenital squamous cell carcinoma. Recent evidence implicates the very same viruses in the pathogenesis of oropharyngeal and laryngeal squamous cell carcinoma. The current study will determine the prevalence of human papillomavirus in oral and laryngeal squamous cell carcinomas in the local population of the United Arab Emirates.

OTHER DEPARTMENTAL ACTIVITIES:**1. Emirates Art and Photography Award 2014**

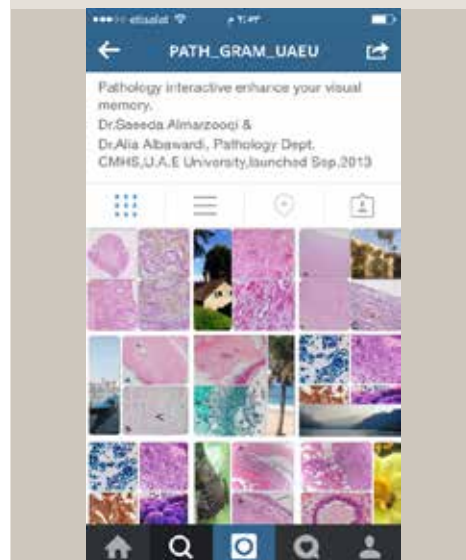
Organizers: Dr. Saeeda Almarzooqi and Dr. Alia Albawardi with a team of dedicated and talented medical students. The philosophy of "Art and Photography in Pathology Award"; was to stimulate medical students' imagination and create a gratifying learning atmosphere. The aim was to enhance medical student's awareness of pathology as an important medical subspecialty, and to encourage them to pursue it as a potential career. This initiative is unique in the Arab world. Participation in the award was open to medical students from all medical schools within the country.

We received more than 40 art works from all medical schools in the U.A.E. Five winners were chosen based on the artistic qualities and scientific accuracy. Winners were:

1. Mahra Al Dahbashi , College of Medicine & Health Sciences-UAEU, work titled: India Ink
2. Fatema Saif AlMazrooei, Salma Mohamed AlZaabi, Jawaher Rashed AlZeyoudi, Maryam Salem AlZeyoudi, College of Medicine & Health Sciences-UAEU, work title: Lung Carcinoma
3. Hayfa Mohamed Moneer Khan, Dubai Medical College for Girls, work titled: Starry Night by Denis Parsons Burkitt Lymphoma
4. Al Afra Al Jaberi, College of Medicine & Health Sciences-UAEU, work titled: The Silent Killer
5. Majid Mohammed Abu Samra, College of Medicine & Health Sciences-UAEU, work titled: Alzheimer's disease

2. Pathology educational instagram account: path_gram_uaeu

An interactive link that present clinically encountered clinical cases with emphasis on pathological findings and diagnosis.



Original Peer-reviewed Scientific articles

Agarwal MM, Boulvain M, Coetzee E, et al. (2014). Diagnostic criteria and classification of hyperglycaemia first detected in pregnancy: A World Health Organization Guideline. *Diabetes Res Clin Pr*, 103:341-363.

Ahmed R Alsuwaidi, MD, Alia Albawardi, Saeeda Almarzooqi, Sheela Benedict, Aws R Othman, Stacey M Hartwig, Steven M Varga, Abdul-Kader Souid. (2014). Respiratory Syncytial Virus Increases Lung Cellular Bioenergetics in C57BL/6 Mouse Neonates. *Virology*, 454-455:263-9.

Albawardi A, Al Ayyan M, Al Bashir M, Souid AK, Almarzooqi S. (2014). In vitro assessment of anti-tumor activities of the PI3K/mTOR inhibitor GSK2126458. *Cancer Cell Int*, 14(1):90.

Albawardi A. (2014). Need to Think Outside Organ-based Diagnosis to Molecular Diagnostics. *Appl Clin Res, Clinical Trials & Regulatory Affairs*, 1 (1):10 – 12. DOI: 10.2174/2213476X01666131223234026.

Al-Gazali L, Ben-Salem S, Al-Shamsi AM, Gleeson JG & Ali BR. (2014). Mutations Spectrum of Joubert Syndrome and Related Disorders among Arabs. *Hum Gen Variation*, 1:14020.

Ali BH, Al-Salam S, Al Za'abi M, Al Balushi KA, Ramkumar A, Waly MI, Yasin J, Adham SA, Nemmar A. (2014). Does swimming exercise affect experimental chronic kidney disease in rats treated with gum acacia? *PLoS One*, 9(7):e102528.

Ali S. Alfazari, Saeeda Almarzooqi, Alia Albawardi, Sami Shaban, Bayan Al-Dabbagh, Dhanya Saraswathiamma, Saeed Tariq, Abdul-Kader Souid. (2014). Ex Vivo Effects of Sorafenib and Regorafenib on Murine Hepatocytes. *J Clin Toxicol*, 4:207. doi: 10.4172/2161-0495.1000207.

Ali S. Alfazari, Saeeda Almarzooqi, Alia Albawardi, Sami Shaban, Bayan Al-Dabbagh, Dhanya Saraswathiamma, Saeed Tariq, Abdul-Kader Souid. (2014). Ex Vivo Effects of Sorafenib and Regorafenib on Murine Hepatocytes. *J Clin Toxicol*, 4:207. doi: 10.4172/2161-0495.1000207.

Al-Kindi A, Kizhakkedath P, Xu H, John A, Al Sayegh A, Ganesh A, Al-Awadi M, Al-Anbouri L, Al-Gazali L, Leitingner B & Ali BR. (2014). A novel mutation in DDR2 causing spondylo-meta-epiphyseal dysplasia with short limbs and abnormal calcifications (SMED-SL) results in defective intra-cellular trafficking. *BMC Med Genet*, 15:42.

Almarzooqi S, Ahmad Al-Safi R, Fahad Al-Jassar W, Akhter SM, Chiab-Rassou Y, Albawardi A. (2014). Epithelioid trophoblastic tumor: report fo two cases in postmenapausal women with literature review and emphasis on cytological findings. *Acta Cytol*, 58(2):198-210.

Almarzooqi S, Alfazari AS, Albawardi A, Saraswathiamma D, Abdul-Kader HM, et al. (2014). Modulation of Cardiomyocyte and Hepatocyte Bioenergetics by Biguanides. *J Clin Toxicol*, 4:203. doi: 10.4172/2161-0495.1000203.

Almarzooqi S, Al-Safi R, Al-Jassar W, Akhter S, Chiab-Rassou Y, Albawardi A. (2014). Epithelioid trophoblastic tumor: report of two cases in postmenopausal women with literature review and emphasis on cytological findings. *Acta Cytol*, 58(2):198-210.

Almarzooqi S. (2014). Tumor Biomarkers: Clinical Utility, Promises and Problems. *Applied Clinical Research, Clinical Trials & Regulatory Affairs*, 1(1): 51-55. DOI: 10.2174/2213476X01666131121224127.

Al-Salam S, Hashmi S. (2014). Galectin-1 in early acute myocardial infarction. *PLoS One*, 31;9(1):e86994.

Alsuwaidi AR, Albawardi A, Almarzooqi S, Benedict S, Othman AR, Hartwig SM, Varga SM, Souid AK. (2014). Respiratory syncytial virus increase lung cellular bioenergetics in neonatal C57BL/6 mice. *Virology*, 454-455: 263-9.

Alsuwaidi AR, Albawardi A, Khan NH, Souid AK. (2014). A 4-month-old baby presenting with dermal necrotizing granulomatous giant cell reaction at the injection site of 13-valent pneumococcal conjugate vaccine: a case report. *J Med Case Rep*, 8(1):285.

Ben-Salem S, Al-Shamsi AM, Ali BR, Al-Gazali L. (2014). The Mutational Spectrum of the NF1 Gene in Neurofibromatosis Type I Patients from UAE. *Child Nerv Syst*, 30:1183-1189.

Ben-Salem S, Rehm HL, Willems PJ, Tamimi ZA, Ayadi H, Ali BR, Al-Gazali L. (2014). Analysis of Two Arab Families Reveals Additional Support for a DFNB2 Nonsyndromic Phenotype of MYO7A. *Mol Biol Rep*, 41:193-200.

Colagiuri S, Falavigna M, Agarwal MM, et al. (2014). Strategies for implementing the WHO diagnostic criteria and classification of hyperglycaemia first detected in pregnancy. *Diabetes Res Clin Pr*, 103:364-372.

Fahim MA, Nemmar A, Al-Salam S, Dhanasekaran S, Shafiullah M, Yasin J, Hassan MY. (2014). Thromboembolic injury and systemic toxicity induced by nicotine in mice. *Gen Physiol Biophys*, 33(3):345-55.

Fhu CW, Graham AM, Yap CT, Al-Salam S, Castella A, Chong SM, Lim YC. (2014). Reed-Sternberg cell-derived lymphotoxin-α activates endothelial cells to enhance T-cell recruitment in classical Hodgkin lymphoma. (2014). *Blood*, 6; 124(19):2973-82.

Kizhakkedath P, Lorre A, Zelcer N, John A, Al-Blooshi AS, Al-Hosani AH, Al-Nuaimi AM, Al-Gazali L & Ali BR. (2014). Impaired Trafficking of the Very Low Density Protein Receptor caused by missense mu-

tations associated with Dysequilibrium syndrome. *Biochimica et Biophysica Acta (BBA) Mol Cell Res*, 1843:2871-2877.

Matlik HN, Milhem RM, Saadeldin IY, Al-Jaibaji HM, Al-Gazali L & Ali BR. (2014). Clinical and molecular analysis of a novel COLQ missense mutation causing Congenital Myasthenic Syndrome in a Syrian family. *Paed Neurol*, 51:165-169.

Milhem RM, Ben-Salem SM, Al-Gazali LI & Ali BR. (2014). Identification of the cellular mechanisms that modulate trafficking of Frizzled Family Receptor 4 (FZD4) missense mutants associated with FEVR. *Invest Ophthalmol Vis Sci*, 55:3423-3431.

Nemmar A, Al-Salam S, Beegam S, Yuvaraju P, Yasin J, Ali BH. (2014). Pancreatic effects of diesel exhaust particles in mice with type 1 diabetes mellitus. *Cell Physiol Biochem*, 33(2):413-22.

Reiff RE**, Ali BR**, Baron B, Yu TW, Ben-Salem S, Coulter ME, Schubert CR, Hill RS, Akawi NA, Evrony GD, Al-Saffar M, Felie JM, Partlow JN, Christine M. Sunu CM, Alkuraya FS, Meyer BF, Walsh CA, Al-Gazali L & Mochida GH. (2014). METTL23, a Transcriptional Partner of GABPA, Is Essential for Human Cognition. *Hum Mol Genet*, 23:3456-3466. **Joint first authors

Published Abstracts, Letters and Correspondence

Agarwal MM, Dhath GS. (2014). Comment on: Zhu WW et al. Fasting Plasma Glucose at 24-28 Weeks to Screen for Gestational Diabetes Mellitus: New evidence from China. *Diabetes Care*; e33 I doi: 10.2337/dc13-2035 (2014).

Al-Salam S. (2014). Epstein - Barr virus infection is inversely correlated with the Expression of Retinoblastoma protein in Reed-

Sternberg cells in Classic Hodgkin Lymphoma. 17th Beatson International Cancer conference, Glasgow, UK, from 6/7/2014-9/7/2014.

Hashmi S, Al-Salam S. (2014). Galectin-3 in a mouse model of early myocardial infarction. 6th International conference on drug discovery and treatment, Dubai 10-12 February 2014.

Proceedings, Conferences, Invited Lectures, Websites and Others

Agarwal MM. (2014). Gestational Diabetes: meeting the challenge. FIGO global initiative for gestational diabetes. Waterloo Hotel, London. May 7-8, 2014.

Agarwal MM. (2014). The new ATP-IV guidelines and diet management of hypercholesterolemia. Oasis Hospital. February 24, 2014.

Agarwal MM. (2014). Interpreting laboratory tests: essentials. 6th Paramedical Continuing Professional Development Conference. Al Ain, UAE. September 20, 2014. Agarwal MM. (2014). Troponin: Friend or Foe. Inter Emirates Cardiology Symposium. Radisson Hotel, Sharjah. March 4, 2014.

Akawi NA, Ali BR, Al-Gazali L. (2014). Elucidating the Molecular Bases of Rare Recessive Disorders Segregating in Consanguineous Families from the United Arab Emirates. Genomic Disorders 2014: The Genomics of Rare Diseases, 5-7 March 2014, Cambridge, UK.

Albawardi A. (2014). Cofounder of an interactive pathology Instagram account designated for medical students. Group Name : Path_Gram_UAEU. Link: http://instagram.com/Path_Gram_UAEU.

Albawardi A. (2014). Emirates Medical Association Mini Medical School in association with Khalifa University initiative 2014; invited speaker in pathology. National project aim to increase societal medical awareness.

Albawardi A. (2014). Invited guest at "Ask your Doctor" TV show on Al Dafra channel, Oct 15-2014.

Albawardi A. (2014). Invited speaker at a student targeted discussion forum titled "oh, the specialties you'll choose" held at College of Medicine and Health Sciences, Al Ain, 28th April 2014.

Albawardi A. (2014). Pathologist's perspectives on diagnosis and management of Thyroid cancer. Second International Oncology Conference, invited speaker. Abu Dhabi-UAE (Sept 2014).

Albawardi A. (2014). The first Emirates Art & Photography in Pathology Award 2014, event organizer and scientific committee judge. <http://www.cmhs.uaeu.ac.ae/pathcomp/>

Al-Hosani AH, Kizhakkedath P, Loriger A, John A, Bleijlevens B, Al-Blooshi AS, Al-Nuaimi AM, Al-Gazali L, Zelcer N, Ali BR. (2014). Impaired Trafficking of the Very Low Density Lipoprotein Receptor caused by missense mutations associated with Dysequilibrium syndrome. The Ninth International Scientific Conference for Medical Students in the GCC Countries. Al-Ain, UAE, 26-30th December, 2014.

Ali BR. (2014). Genomic Medicine: Is it Relevant to UAE?. Al-Jalila Foundation First Research Symposium. Dubai, UAE, 2nd April 2014.

Aljneibe MA, Ben-Salem S, Khozaimy KM, Al-Kathiri KM, Alameri SS, Ali BR, L. Al-Gazali. (2014). A Novel Splice Site Deletion in the OFD1 Gene is responsible for Oral-Facial-Digital type 1 Syndrome in an Emirati Child. The Ninth International Scientific Conference for Medical Students in the GCC Countries. Al-Ain, UAE,

26-30th December, 2014.

Almarzooqi S. (2014). 2nd International Congress on Oncology, Al Saadiyat Island, Abu Dhabi, 18-19th September 2014, invited speaker (Gynecological malignancies – a pathologist perspective)

Almarzooqi S. (2014). Chair of the Emirates Art and Photography Award in pathology 2014. A co-founder of the award that targets medical students in UAE to increase awareness of pathology as an interesting and needed subspecialty. Award ceremony held at UAEU main campus 15th April 2014.

Almarzooqi S. (2014). Co-founder of interactive instagram account that aims at providing a new mean of education for medical students and pathology residents. Account name: path_gram_uae.

Almarzooqi S. (2014). Emirates Medical Association community based Mini Medical School, Khalifa university, Abu Dhabi, invited speaker, May 27th 2014. Talk titled "pathology and art".

Almarzooqi S. (2014). Emirates Medical Association community based Mini Medical School- Level 2, Abu Dhabi University, Abu Dhabi, invited speaker, November 3rd 2014, invited speaker. Presentation titled "cervical cancer".

Almarzooqi S. (2014). Emirates Medical Association, pathology branch: 1st Emirates Pathologists Meeting round 2014-15, Prime Hospital, Dubai, 1st November 2014, invited speaker. Title: "interesting ovarian cases"

Almarzooqi S. (2014). Emirates Medical Association-Pathology Society meeting, March 22nd 2014, invited speaker "the soft part of pediatric pathology".

Almarzooqi S. (2014). Organizer of a student targeted discussion forum titled "oh, the specialties you'll choose" held at college of medicine and health sciences, 28th April 2014.

Al-Salam S. (2014). Novel Biomarkers for risk stratification of heart failure. 4th international Heart Failure Conference, Al Ain, UAE, 11-13 December, 2014.

Al-Salam S. (2014). Sheikh Hamdan Bin Rashid Al Maktoum Award. 8th Dubai International Conference for Medical Sciences. Member of Scientific Committee. Dubai, 15-17 December, 2014.

Milhem RM, Al-Gazali L, Ali BR. (2014). ER-Retention is a Common Cellular Mechanism Underlying Numerous Human Monogenic Disorders: The Case of Familial Exudative Vitreoretinopathy and Congenital Myasthenic Syndrome. FASEB Science Research Conference on Protein Folding in the Cell. Saxtons River, VT, USA. 20-26th July 2014,



RESEARCH GRANTS

CMHS Research Grant

Profs Bassam Ali (PI), L Al-Gazali Cellular analysis of the missense mutations causing Spondylometaphyseal dysplasia, short limb-hand type and Disequilibrium Syndrome. [2013-2014].

Profs B Ali, L Al-Gazali (PI) Identification of the Genetic and Molecular Basis of Intellectual Disability in Two Families from the UAE. [2013-2015].

Dr S Al-Salam (PI) Trefoil factor 3: A novel protein in breast cancer chemoresistance. [2014-2016].

CMHS startup Grant

Drs A Albawardi, S Almarzooqi (PI), Prof AK Souid In Vitro Assessment of Antitumor Activities. [2013-2016].

Drs A Albawardi (PI), S Almarzooqi in vitro effects of platinum compounds on murine renal cellular respiration. [2013-2016].

Drs S Almarzooqi (PI), A Albawardi, Prof AK Souid In Vitro Assessment of Antitumor Activities. [2013-2016].

Drs S Almarzooqi, A Albawardi (PI) in vitro effects of platinum compounds on murine renal cellular respiration. [2013-2016].

Sheikh Hamdan Bin Rashid Al-Maktoum Award for Medical Sciences Profs B Ali (PI), L Al-Gazali The Pharmacogenomics of Warfarin Metabolism in UAE Population. [2012-2014]

Profs L Al-Gazali (PI), B Ali Exome sequencing and homozygosity mapping to identify causative genes and mutations in Emirati families with recessive conditions. [2012-2014]

Drs S Almarzooqi, F Mustafa (PI) Investigation of Mouse Mammary Tumor Virus (MMTV) Presence in the UAE Population: A Putative Viral Agent in Human Breast Cancer. [2013-2015].

UAEU-NRF Grant

Profs B Ali (PI), L Al-Gazali Evaluation of the Genetic Manipulation of ER folding and ER-Associated Protein Degradation Components as a Therapeutic Target for ERAD Diseases. [2013-2015].

Profs B Ali, L Al-Gazali (PI) Whole-Exome sequencing and homozygosity mapping to identify causative genes underlying autosomal recessive intellectual disability in consanguineous UAE families. [2013-2015].

Drs A Albawardi, F Mustafa (PI) Characterization of Mouse Mammary Tumor Virus (MMTV) in Human Tumors in the UAE: Is MMTV a General Biological Carcinogen. [2013-2015].

Dr S Al-Salam (PI) HIF-1 α survival signal in Ischemic Myocardium: A protective role of Galectin-1 and Galectin-3. [2011-2014].

**UAEU-Zayed Health Centre
Interdisciplinary Grant:**

Profs B Ali (PI), L Al-Gazali
Novel approaches to ameliorate
the effects of mutations underlying
Lysosomal Storage Disorders
in Emirati patients. [2014-2017].

Profs B Ali, L Al-Gazali (PI)
The identification of the genetic
defects underlying monogenic
disorders in UAE. [2014-2017].

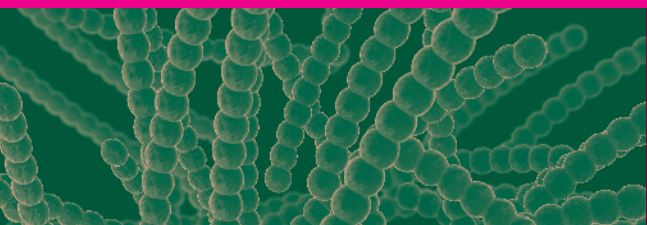
**Terry Fox Fund for Cancer
Research**

Dr S Al-Salam (PI).
Role of Galectin 1&3 in the breast
cancer chemoresistance. [2011-
2014].

Others

Al Jalila Foundation Seed Grant
Drs S Al-Salam, A Amin (PI)
Therapeutic Effects of Crocin
against Hepatocellular Carcinoma:
A Preclinical Study. [2014-2016].

2014
Pathology



Department of Pharmacology & Therapeutics

Research Profile

Professor & Chair

Prof S Bastaki

Professors

Prof A Adem

Prof M Oz

Associate Professor

Dr S Attoub

Assistant Professors

Dr R Mohanraj

Dr S Ojha

Dr B Sadek

Dr F Yousuf

Teaching Assistant

Mr R A Beiram

Medical Research Specialist

Ms N Amir

Ms K Arafat

Mr S Dhanasekaran

Dr SM Nurulain

Mr A Shamsulislam

Medical Secretary

Ms K Al Kaabi

Ms S Duncan

Central Facilities

(Animal House)

Dr M H Ali

Mr M El Wasila

Mr M Shafiullah

Office Assistant

Mr S Alikutty

The Pharmacology & Therapeutics

Department has special interests in Diabetes and Degenerative Diseases, Neuroscience, Clinical Toxicology, Gastroenterology and Oncology. The research is done with state of the art equipment in purpose-built laboratories with good technical and other support.

Prof. Salim Bastaki

Gastroenterology: Gastrointestinal diseases have increased in recent years. Our research is based on gastrointestinal secretion and the mechanism of action of PPIs and other acid inhibitors on acid secretion. In the early years, Histamine H₂-receptor antagonist, Sucralfate and Muscarinic receptor antagonists were used more often. But with the introduction of the proton pump inhibitors (PPIs) their use has declined owing to the potent anti-secretory and anti-ulcer activity of the PPIs. At present we are studying the new H₃R antagonist on Gastric acid and Ulcer formation in the rat in vivo and in vitro. We have finished and published the effect of receptor antagonist and PD-136450 on stress-induced gastric ulcer on in rats and the healing rate of alcohol-and indomethacin-induced ulcers in the same rats.

Teratology: Epilepsy affects approximately 1% of the world's population and it is the second most common neurologic disorder after stroke. It is a heterogeneous symptom complex—a chronic disorder characterized by chronic seizures. Approximately 0.5% of all pregnancies occur in women with epilepsy. It is known that epileptic women demonstrate a higher liability to obstetric complication than non-epileptic females and congenital malformations are more common in their offspring than those of normal or rats. We have finished working on the effects of Aflatoxin B on pregnant mice and working on the new antiepileptic drug (AED) on the fetuses of mice.

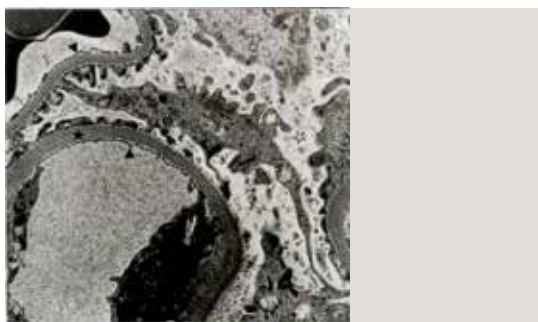
Pharmacogenetics: Oxidation by enzymes encoded at the CYP2D6 locus is the main route of elimination for a large number of drugs including many commonly prescribed in psychiatric practice such as antidepressants and neuroleptics. The CYP2D6 locus is highly polymorphic and numerous mutant CYP2D6 alleles are currently known including defective alleles which yield no functional protein product and duplicated active alleles which cause ultrarapid oxidation. Two CYP2D6 oxidation phenotypes EM (extensive metabolisers) and PM (poor metabolisers) are commonly recognized. These phenotypes can be accurately predicted by genotyping. The clinical implications of the CYP2D6 polymorphism are of potential importance to psychiatric practice in the UAE since tricyclic antidepressants are widely prescribed for treatment of depression. These drugs have a small therapeutic index and unpleasant side-effects or therapeutic failure is commonly encountered when fixed dose regimens are used. We just published the work in PlosOne the top on line Journal. At present we are working on NAT2 phenotyping and genotyping in the Emiratis.

Prof. Abdu Adem

Diabetes

Mechanisms of Apoptotic Cell Death in Diabetes

In almost all multicellular organisms, cell suicide or apoptosis appears to play an important role in the maintenance of cellular homeostasis. Apoptosis is tightly regulated by a set of genes that either promote apoptosis or promote cell survival. Although a number of stimuli appear to trigger the process of apoptosis, there are two major signaling pathways of apoptosis: the death receptor pathway and the death receptor-independent or mitochondrial pathway. Mechanisms of apoptotic cell death are being studied in kidneys of an animal model of diabetes. The ultra structural features in the tubules seem to implicate apoptosis in the pathology of



renal nephropathy. In addition he reported, for the first time, a significant loss of foot processes of podocytes (*) in the diabetic rat kidney (Fig.1 left). These findings could contribute to the understanding of the patho-physiology of diabetic nephropathy.

Neurodegenerative Diseases

Novel Selective Ligands for Muscarinic Acetylcholine Receptors

Five muscarinic acetylcholine receptor subtypes (M1- M5) have been cloned and are found in the brain. However, the pharmacological identification of the subtypes responsible for the various central effects of the muscarinic drugs is difficult due to the lack of highly selective muscarinic agonists and antagonists. His lab in collaboration with others, has isolated muscarinic M1 and M4 receptor subtype selective toxins from mamba snake (*Dendroaspis*) venoms. At present the status of M1 and M4 receptors in health and disease states in humans are being investigated. Results from his lab have shown significant decrease of M4, but not of M1 receptors in the hippocampus of Alzheimer's patients compared to controls. Moreover, changes in these receptors have been reported by his group in adrenalectomized animal models which have been shown to have a selective loss of hippocampal neurons. Attempts to isolate and characterize M2, M3, and M5 selective toxins by his group is in progress. Behavioral, biochemical and electrophysiological techniques are used in his laboratory to understand the role of other neurotransmitters in diabetes, epilepsy, aggressive behavior, aging, and degenerative diseases.

Prof. Murat Ahmet Oz

The research interest of Prof. Oz focuses on the identification of ion channels and neuronal networks upon which neuropharmacologically active agents act to modulate neuronal excitability. To this end, actions of neuropeptides such as vasopressin, angiotensin, and cholecystokinin on the spinal cord preparations and the effects of bioactive lipids such as endocannabinoids on the functions of ion channels are the major research topics investigated in his laboratory.

Dr. Samir Attoub

Cancer research

My research is focused on the role of PI3K/Akt/NF- κ B pathway as a driving force behind lung and colon cancer progression (apoptosis, inva-

sion, angiogenesis and metastasis) using siRNA technology and in parallel screening of potential anti-cancer drugs.

1. Identification of Akt isoforms involved in colon cancer survival and invasion

The PI3K/Akt/NF κ B signaling cascade is constitutively activated in cancers. Akt is linked to the transforming activity of c-src, c-kit, c-met oncogenes and growth factors, such as EGF and IGF receptors. Drugs targeting receptor tyrosine kinases (ErbB2/HER2 and ABL/c-kit) impact the PI3K/Akt pathway. Consequently, the inhibition of Akt is considered to be an attractive cancer therapeutic target. Three isoforms of Akt (Akt1/PKB α , Akt2/PKB β , and Akt3/PKB γ) are over-expressed and activated in cancers, but the degree of functional redundancy between them on cancer cell survival and invasion are unclear. The identification of the Akt isoform that is the most promising target for cancer therapy is unknown and will be addressed in the following specific objectives:

- To explore the respective roles of Akt-1, -2 and -3 in cancer cell survival, invasion, tumor growth and metastasis, studies will be conducted using RNA interference technology in LNM35 human lung cancer cells and HT29 human colon cancer cells.
- To characterize the ability of different isoforms of Akt (Akt-1, -2 and -3) to transactivate different subsets of target genes to orchestrate either cell survival or invasion. This will be investigated in colon and lung cancer cells using microarray analysis.

The effects of knockdown of Akt-1, -2 or -3 on cellular survival will be determined by cellular viability, DNA fragmentation, cell cycle and TUNEL assays, caspases activity, PARP cleavage, cytochrome-c release and expression of pro- and anti- apoptotic proteins. The impact

of Akt-1, -2 or -3 silencing on invasion will be investigated using the collagen type I and the chick heart invasion assays, cell-cell and cell-matrix adhesion and expression of E-Cadherin. The effect of knock down of the Akt's on HT29 cell line on tumour growth will be tested in nude mice. In addition, we will assess the development of new blood vessels (CD31 antibody), the presence of apoptotic cells (caspase 3 activity), and proliferative activity (ki67 antibody). We'll test the therapeutic impact of the Akt isoforms inhibition on metastasis using the highly invasive and metastatic lung cancer cell line LNM35 targeting the lymph nodes and lungs. This cell line is stably transfected with a vector encoding luciferase, to allow a rapid and reliable quantification of micro-metastases. To identify the mechanisms underlying the effects of Akt isoform inhibition, we will search for differentially expressed genes using microarray analysis and confirm the results by real-time RT-PCR. It is anticipated that this project will provide evidence that targeting Akt-1 and/or -2 is a promising strategy for the treatment of colon and lung cancer.

2. Screening of potential anti-cancer compounds using *in vitro* and *in vivo* assays

The overall goals of this part of my research are directed towards studying the *in vitro* and *in vivo* cytotoxic properties of the synthesized/purified drugs (Luteolin, Thymoquinone and Frondoside A). The effective drugs will be further investigated in order to determine their mechanisms of action using various molecular biological techniques. In addition, we will attempt to investigate the effects of these drugs on cell survival and invasion *in vitro* and on tumor growth *in vivo*. The effects on metastasis in nude mice using various cancer cell lines will also be investigated.

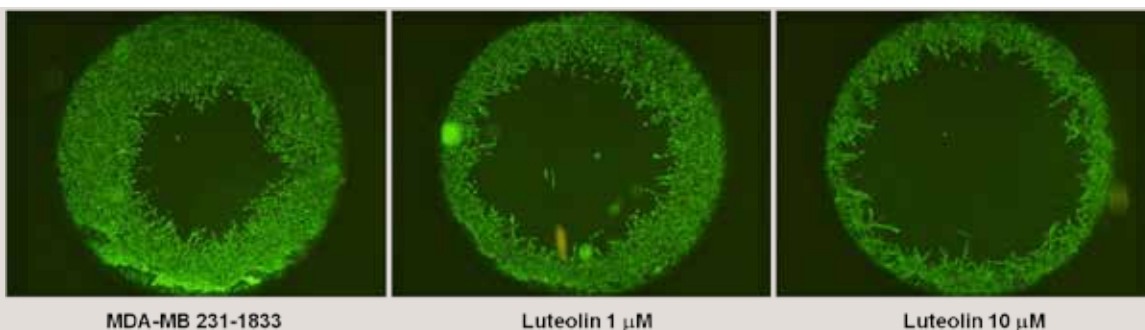


Figure 2: Dose-response effect of luteolin on Breast cancer cell invasion.

Dr. Rajesh Mohanraj

Main research interest pertains to deciphering the role of neutral sphingolipids and identification of novel therapeutic targets for diabetic vascular complications.

Dr. Shreesh Ojha

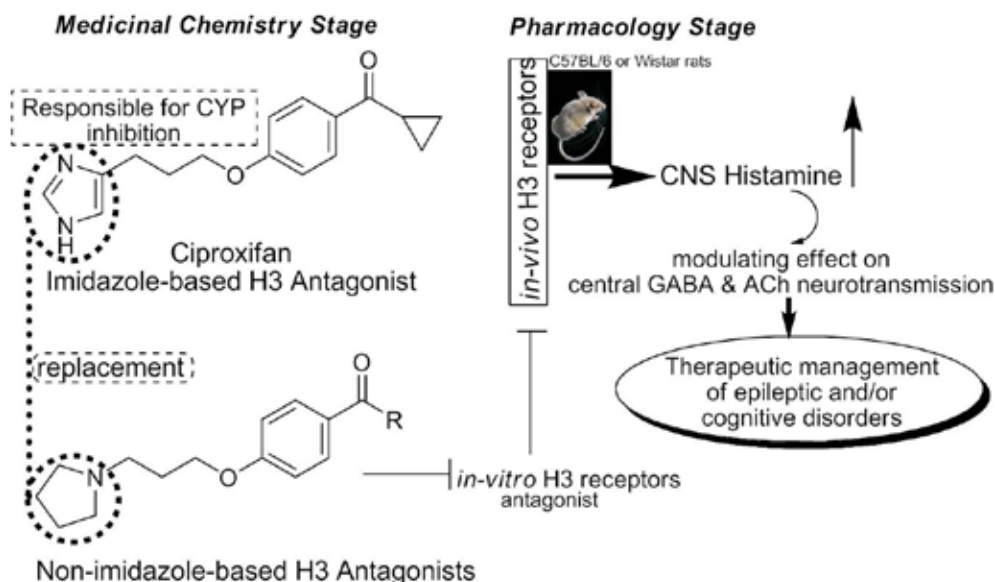
The research interest of Dr. Shreesh Ojha focuses on targeting the interplay of oxidative/nitrosative stress and inflammatory signaling and their manipulation using natural, synthetic or semi-synthetic bioactive agents in the pathogenesis in ischemic heart disease, diabetes and diabetic vascular complications and metabolic syndrome. He uses the animal models of ischemic heart diseases and dietary models of diabetes and its vascular complications, obesity and metabolic diseases. His research work pertains to investigate the mechanisms that may be responsible for modifying; inducing or preventing cardiovascular or metabolic disease based on evidences arises from different approaches including hemodynamic, biochemical, histological and immunohistochemical. Currently, various substances are being tested to identify novel compounds which might find their use in future therapeutics for ischemic heart diseases and metabolic syndrome.

Dr. Bassem Shabab Sadek

Histamine H3 Receptors as Novel Drug Targets for Therapeutic Management of Epilepsy and Cognitive Disorders

The development of selective antagonists targeting central histamine H3 receptors enables the explanation of their physiological and pathophysiological functions, as the difficulty for developing satisfactory therapy of Alzheimer's disease (AD), Attention-Deficit-Hyperactivity-Disorder (ADHD), or drugs abuse (DA) lies in the complex pathophysiology of the disease, which involves numerous pathways that include deficiency in cholinergic neurotransmission, abnormalities of adrenergic, serotonergic and dopaminergic neurotransmission. Thus, the development of H3 receptor antagonists belonging to different chemical classes capable of penetrating into the CNS and modulating histaminergic neurotransmission in the central nervous system can positively affect the multi-neurotransmitter disorders, e.g. AD, ADHD, or DA.

The research interest of Dr Bassem Shaban Sadek focuses on the structural development of those histamine H3 receptor antagonists targeting cognitive disorders. To this end, different chemical classes of antagonists, e.g. piperidine- and pyrrolidine-based antagonists will be synthesized and investigated for their in-vitro antagonistic effect at human histamine H3 receptors. Selected compounds with high in-vitro antagonist activity will be further examined on their selectivity profile against a wide set of human GPCRs expressed in different cell lines. Those most promising antagonists will be investigated on their in-vivo modulating effects on



epilepsy, memory impairment and drug addiction using different animal models in rats and mice, as such pharmacologic evaluation is a key stone in the development of future drugs of significant role in therapeutic management of aforementioned central disorders.

Dr. Fakhreya Yousuf

Major research activities are in the area of stroke and vascular diseases. She investigates the cellular and molecular mechanisms of white matter injury due to chronic stroke/ ischemia, especially the role of inflammation and matrix metalloproteinases in white matter damage in a rat model of vascular cognitive impairment.

Vascular cognitive impairment (VCI) is a heterogeneous disease due to large and small vessel pathology. Small vessel disease with arteriolosclerosis secondary to hypertension and diabetes with white matter injury is the most common form. As the population increases in age, the incidence of vascular causes of dementia is projected to rise, creating a pressing need to use animal models to elucidate the pathophysiology of the white matter damage and identify effective treatments. During her postdoctoral fellow in the USA, she developed a novel model for white matter gliosis in older spontaneously hypertensive rats that are stroke prone (SHR-SP). At 12 weeks of age they underwent unilateral carotid artery occlusion (UCAO) and were fed with the Japanese permissive diet (JPD) with added salt. Four weeks later (week 16 of life), they developed extensive white matter damage with gliosis, apoptosis of mature oligodendrocytes in white matter lesions, and compensatory increase in immature oligodendrocytes. Increased MMPs associated with BBB disruption and myelin breakdown. Memory impairment, as determined by Morris water maze (MWM), was evidenced starting at week 3 following UCAO/JPD. This model combines hypertensive changes in the blood vessels with hypoxia and genetic/environmental factors, making it similar to VCI in patients. Her current objectives are to understand the molecular and subcellular basis of oligodendrocytes death, myelin loss, and BBB opening in UCAO/JPD rat model of vascular cognitive impairment. She is looking into the role of hypoxia/HIF-1 α expression in MMP-9 induction, opening of the BBB, and white matter damage. She is also developing strategies for therapeutic intervention to prevent or lessen BBB damage, myelin loss and cognitive impairment in vascular cognitive diseases.

Articles in Peer-reviewed Journals

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Al Dhaheri Y, Attoub S, Ramadan G, Arafat K, Bajbouj K, Karuvantevida N, Abuqamar S, Eid A, and Iratni R. (2014). Carnosol induces ROS-mediated Beclin1-independent autophagy and apoptosis in triple negative breast cancer. *PLoS One*, 9(10); e109630.

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Sadek B, Bahi A, Schwed SJ, Walter M, Stark H. (2014). Anxiolytic- and antidepressant-like activities of the novel and potent non-imidazole histamine H3 receptor antagonist ST-1283. *Inflamm. Res*, 2014, 63(1):1-48.

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Proceedings, Conferences, Invited Lectures, Websites and Others

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Sadek B, Bahi A, Schwed SJ, Walter M, Stark H. (2014). Anxiolytic- and antidepressant-like activities of the novel and potent non-imidazole histamine H3 receptor antagonist ST-1283. 43d Annual Meeting of the EHRS held jointly with COST Action BM0806, Lyon/France 7-10 May 2014, Session chair, Oral presentation.

RESEARCH GRANTS

CMHS-UAEU Grant

Prof A Adem [PI]
Development of a translational model of the cognitive deficits in schizophrenia (2013-2015)

Prof S Bastaki [PI]
Gastroprotective effect of a novel histamine H3 Receptor antagonist, DL-76 in a rat model. (2013-2015)

Dr S Attoub [PI]
Impact of the combination of Frondoside A with Oxaliplatin or 5-fluorouracil in the treatment of colon cancer. (2014-2015)

Prof TE Adrian [PI], Dr S Attoub, Prof E Mensah-Brown
Licofelone: a dual LOX/COX inhibitor for cancer. (2014-2015)

Dr BS Sadek [PI]
Pro-cognitive evaluation of novel histamine H3 receptor antagonists belonging to non-imidazole class. (2013-2015)

Dr J Fakhreya Y [PI]
Hypoxia induction of matrix metalloproteinase-9 in a novel rat model of vascular cognitive impairment. (2014-2015)

Dr S Ojha [PI]
To investigate the therapeutic potential of endocannabinoid system ligands in murine model of metabolic syndrome. (2013-2014)

Prof M Oz [PI]
Effects of menthol on the function of Serotonin-type3 Receptors of central nervous system. (2014-2015)

UAEU Centre-Based Interdisciplinary Grant

Dr T Loney [PI], Profs A Adem, Tar Ching Aw
Toxicological Effects of Pesticide Exposure in Agricultural Workers in Al Ain, UAE. (2014 - 2016)

Prof A Adem [PI], Profs S Shehab, AE Salem
Novel Mechanisms for effective antidepressant drugs. (2014)

Dr R Iratni [PI], Drs S Attoub, J Viallet, SA Qamar
Potential role of Drap1 (NC2α) as a novel tumor suppressor of breast cancer. (2014-2016)

Dr GKhan [PI], Prof TE Adrian, Dr S Attoub
Impact of Epstein-Barr virus small RNA (EBER-1) on genes associated with inhibition of apoptosis. (2014-2016)

Prof B al-Ramadi [PI], Drs M Fernandez-Cabezudo, Dr S Attoub
Development of Manuka Honey and related products as adjuvant therapy for cancer. (2014-2016)

Terry Fox Fund for Cancer Research

Dr S Attoub [PI]
Effect of Frondoside A on tumor cell survival and invasion in vitro and the growth of breast tumor

xenografts in athymic mice. (2012-2014)

UAEU Program for Advanced Research (UPAR)

Dr BS Sadek [PI]
Design, Synthesis, and Pharmacological Evaluation of Novel Antiepileptic Drugs Belonging to Histamine H3 Receptor Antagonists. (2014-2016)

Prof AE Salem [PI], Dr I Abdou, Prof A Adem, Dr S Attoub
Stabilizing Quadruplex Nucleic Acids and Inhibiting Telomerase Enzyme using Modified Natural Bioactive Compounds: A Novel Approach for Developing Anti-cancer Drug. (2014-2016)

UAEU- Start-up-grant

Dr R Mohanraj [PI]
Role of GALT-V in diabetic retinopathy. (2013-2017)

Dr J Fakhreya Y [PI]
Role of hypoxia in a rat model of vascular cognitive impairment. (2013-2015)

Sheikh Hamdan Award For Medical Sciences
Dr R Mohanraj [PI]
Role of LaCer in diabetic nephropathy. (2013-2015)

Dr S Ojha [PI]
Investigation on the role of naturally occurring phytochemicals in the rat model of metabolic syndrome. (2012-2014)

National Research Foundation (NRF) -UAEU

Dr M Oz [PI]
The effects of 2-Arachidonyl Glycerol, a major endocannabinoid, on the function of 5-HT3 receptors of the hippocampal Interneurons. (2012-2014).

Dr S Ojha [PI]
Pharmacological evaluation of multitargeted bioactive agents [Peroxisome Proliferator Activated Receptor-γ; PPAR γ and Cannabinoid Receptors] in diabetes and its complications. (2012-2014)

Dr R Mohanraj [PI], Prof A Adem
Role of SMPD2 in diabetic retin-

opathy. (2012-2014)

Dr J Fakhreya Y [PI]
Hypoxia regulation of MMP-9 in a novel model of vascular cognitive impairment. (2012-2014)

Prof A Adem [PI]
Exposure to heavy metals and Taupathies. (2013-2015)

Dr S Attoub [PI]
Notch isoforms in cancer cell survival and invasion: who is the culprit? (2012-2014)

Virginia Youth Tobacco Project; VA, USA (Small Grant Award)
Dr. M Oz [Co-PI]
Molecular Mechanisms Underlying Menthol Cigarette Addiction. (2014).

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical sciences

Prof S Bastaki [PI]
Reproductive toxicology studies on a new antiepileptic compound H3R ligand 3-(1H-imidazol-4-yl) propyl pent-4-enylcarbamate in the mouse.



2014

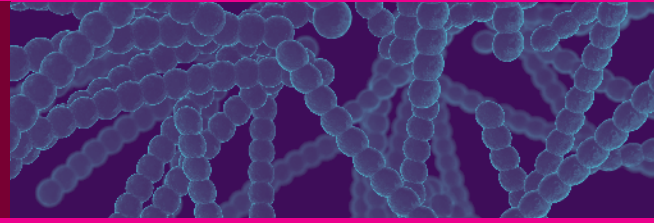
Pharmacology



Standing from Left to right: Mr. S Alikutty, Dr. M H Ali, Prof. A Adem, Dr. B Sadek, Mr. M El Wasila, Prof. M Oz, Mr. Hamadi, Dr. R Mohanraj, Dr. S Ojha, Dr. SM Nurulain, Mr. A Shamsulislam, Mr. M Shafiullah, Mr. K H Kader.

Sitting from Left to right: Ms. N S Khan, Ms. S Sulaiman, Ms. K Al Kaabi, Dr. S Attoub, Prof. S Bastaki, Dr. F Yousuf, Ms S Duncan, Ms. K Arafat, Ms. N Amir

Department of Physiology



Research Profile

Members of Staff of the Physiology Department have interests in neuroscience and muscle (including skeletal, cardiac and smooth muscle). The experimental work includes normal physiology as well as pathophysiology, particularly in relation to the peripheral nerves, autonomic nervous system, and heart in the diabetic state, which is a common disorder in the United Arab Emirates. The work requires complex electrophysiological and cellular methodologies, as well as electron microscopy, using in vitro and in vivo techniques. Other departmental research interests include uterine smooth muscle physiology, cardiovascular and pulmonary effects of particulate air pollution, cancer biology, as well as novel therapeutics for cancer, type 2 diabetes mellitus, and obesity.

Basic neurophysiology and experimental clinical neurophysiology laboratories

The research activities of the basic neurophysiology laboratory presently broadly focus on skeletal muscle function and muscle pain. The main techniques employed are classical electrophysiological techniques (EMG, ENG, muscle force and velocity, single fiber and single unit recordings) and sensorimotor and pain assessment animal behavioral methods. Currently, in collaboration with several colleagues at CMHS we are focusing on validation of behavioral abnormalities in the Rotenone rat model of Parkinson disease and the possible role of basal ganglia in chronic pain modulation. The second area focuses on neural plasticity particularly in the spinal cord related to processing of somatic pain in cervical and lumbar spinal networks as well as of visceral pain. We are particularly interested in changes of

Professor & Chair:

Prof C Howarth

Professors:

Prof TE Adrian

Prof M Fahim*

Prof W Lammers*

Prof M Ljubisavljevic

Prof A Nemmar

Assistant Professors:

Dr Sandeep BS

Medical Research Specialists:

Ms S Beegam

Mr J Oommen

Ms K Parekh

Mr A Qureshi

Ms B Stephen

Medical Research Technicians:

Ms Petrilla J

Ms Priya Y

Senior Administrator:

Mr P Rajagopalan

Office Assistant:

Mr Saeed C

**Professors Lammers and Fahim retired in August 2014.*



The rat with stroke induced by middle cerebral artery temporary occlusion being stimulated by TMS and the schematic depiction of TMS stimulation in a human subject.

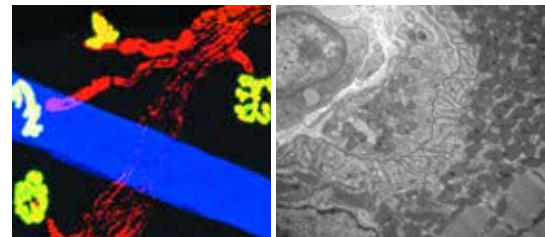
the cellular and functional properties of spinal pain-related neural networks in various chronic pain conditions. Finally, our laboratory is trying to identify the effects of various repetitive Transcranial Magnetic Stimulation (rTMS) protocols on gene expression in diseases like stroke and chronic pain.

The Experimental Clinical Neurophysiology laboratory uses various Transcranial Magnetic Stimulation (TMS) techniques, and other classical Clinical neurophysiology methods (H and F wave and visual evoked potentials) to investigate mechanisms of human nervous system plasticity and the possibilities to remodel these processes in health and diseases. We primarily focus on the organization and plasticity of cortical inhibitory and excitatory pathways in the normal human motor cortex, and in movement disorders and chronic pain. Furthermore, we are interested in application of TMS and transcranial direct current stimulation (TDCs) in neurorehabilitation and treatment of movement disorders and chronic pain syndromes. Finally, Dr. Ljubisavljevic's special interests over the years were cortical processes related to volition in exercise and fatigue. The work focuses on mechanisms associated with sensorimotor integration and maladaptive plasticity in central fatigue. Our research activities are partly conducted in collaboration with colleagues from the Institute for Neurology, University Clinical Center Belgrade, and with the Neurology division of Tawam Johns Hopkins Hospital.

Aging and neurodegenerative disorders

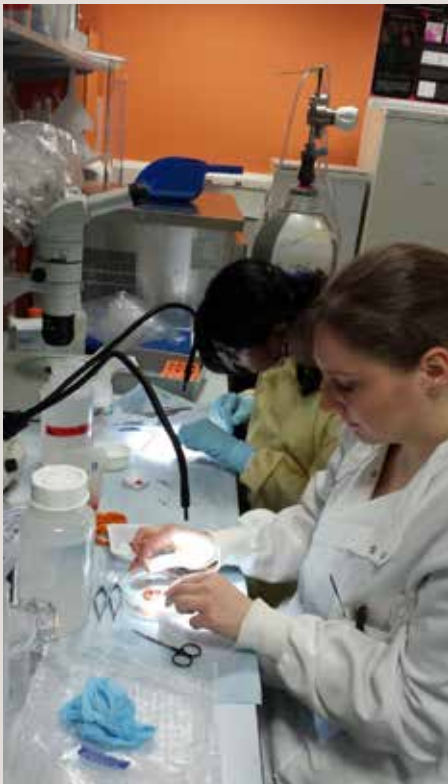
Studies on aging and neurodegenerative disorders have focused on synaptic plasticity and synaptic remodelling, particularly at the nerve-muscle junction in various periph-

eral neuropathies including those caused by diabetes, aging and heavy metal poisoning. Electrophysiological, laser confocal microscopy and electronmicroscopy techniques are used in combination to focus on changes in muscular performance in these conditions. It is hypothesised that free radicals are involved in these nerve injuries and antioxidants like vitamin E & C may have a protective role. Studies on the cerebral microcirculation include changes in the susceptibility to thrombus formation in the brain, and the effects of metals, aspirin and heat.



Cardiovascular function and diabetes

The major research focus of Professor Chris Howarth is diabetes mellitus and heart function and this work is carried out in the 'Electrophysiology Research Laboratory', a joint venture between Professor Howarth and Dr Murat Oz (Pharmacology). A variety of in vivo and in vitro techniques are employed to investigate the effects of type 1 and type 2 diabetes on the heart. Biotelemetry is used to continuously measure the ECG and other parameters in vivo. Video edge detection techniques are used to measure shortening and fluorescence photometry is used to measure intracellular Ca^{2+} in individual cardiac myocytes. Patch-clamp tech-



(A) Photograph showing Petrilla Jayaprakash (Research Assistant) learning how to dissect the sinoatrial node from rat heart under the supervision of Dr Louise Miller (Post-Doc) in Professor Mark Boyett's research laboratory at the University of Manchester, UK.

niques are used to study membrane currents. Work in the Electrophysiology Research Laboratory is supported by technical staff, research assistants, undergraduate medical and science students, Ph.D. and M.Sc. students and post-doctoral scientists from overseas laboratories who visit on a regular basis. Professor Howarth has ongoing collaborations with researchers in other departments in CMHS and various international research laboratories in the UK, Ukraine and other countries. Recent projects have investigated the effects of diabetes on atrioventricular node and sinoatrial node cell electrophysiology, effects of sucrose-enriched diet on gene expression and Ca^{2+} transport in ventricular myocytes from the Goto-Kakizaki type 2 diabetic rat and the effects of anti-diabetic drugs on the electrophysiology of ventricular myocytes from diabetic rats. Work in the laboratory has been generously supported by Sheikh Hamdan Bin Rashid Al Maktoum

Award for Medical Sciences, Emirates Foundation, National Research Foundation, United Arab Emirates University, College of Medicine & Health Sciences, LABCO a partner of Sigma-Aldrich and the Al Ain Equestrian, Shooting and Golf Club.

Mapping laboratory

Work has proceeded very well in 2014 with major research developments obtained both in the mapping lab in Al Ain and through our collaborations with other laboratories around the world. This led to several joint publications, together with Ming Lei and his collaborators at Oxford and Cambridge, UK, with Leo Cheng and his group at the University of Auckland, with Luke Fullard and Maria Ferrua from the Massey University, Palmerston North, also in New Zealand, and two publications with Herbert Schäfer, Zweibrücken, Germany, one of which won the Martin-Wienbeck Award.

But probably the most important achievement has been the publication of our first paper on electrical propagation in the urinary bladder; a project that was started many years ago by John Morrison and that, when John left the faculty, was ably continued by Fayez Hammad from the department of Surgery. In this paper, we show for the first time the pattern of electrical propagation in the bladder with interesting similarities and differences with other smooth muscle organs.

Another milestone was reached when we were invited to organize a symposium on 'Electrical propagation in smooth muscle organs' that took place last August in Budapest, Hungary. This symposium was held in the context of the annual meeting of the Federation of European Physiological Societies (FEPS) whereby speakers were invited to review this topic in the stomach (Leo Cheng, Auckland, NZ), in the small intestine (Wim Lammers, Al Ain, UAE), the pregnant uterus (Chiara Rabotti, Eindhoven, the Netherlands) and the urological system (Fayez Hammad, Al Ain, UAE).

This symposium, in turn, led to an invitation by the journal *Acta Physiologica* (IF: 4.25) to dedicate a special issue on this topic. All four speakers wrote a review and this was supplemented with 3 more invited reviews (Susan Wray, Liverpool, UK; Konrad Schulze, Iowa City,

US and Marcus Drake, Bristol, UK). The special issue has meanwhile been published in the February 2015 issue of *Acta Physiologica*.

This year saw the departure of Wim Lammers from the department of Physiology and the College of Medicine and Health Sciences. His departure on August 31st was followed by the appointment of Dr Sandeep Subramanya on September 1st 2014. One of the aims of this succession is to continue the use of the high resolution mapping system in the lab, which is currently the only smooth muscle mapping lab in the world.

However, Dr. Subramanya also has a track record conducting research on water soluble vitamin transport in health disease. He is in the initial phase of establishing transport studies in the faculty.

Pathophysiologic mechanisms of particulate air pollution

Air pollution from road traffic is a serious health hazard, and particulates have become cause for increasing concern. The UAE has seen tremendous growth in road traffic during the last fifteen years resulting in a significant increase in vehicular air pollution. In the major cities such as Abu Dhabi, Dubai or Sharjah, vehicle emissions are currently considered as one of the greatest contributors to urban air pollution. Inhaled particulate air pollution with diameter below than 2.5 μm contributes to respiratory and cardiovascular morbidity and mortality.

Diabetes, hypertension and renal failure are considered as major health problems in the UAE and the world at large. Not only the life-threatening complications but the cost of treatment is imposing enormous and increasing strains on national health budgets. In my laboratory we are studying the mechanisms underlying the effects of air pollution on diabetes, hypertension and renal failure. My laboratory is also searching for novel novel pharmacological agents that can ameliorate or prevent the toxicity of air pollution. Nanotechnology is a broad interdisciplinary area of research, grouping physical, chemical, biological, and engineering expertise involved in manufacturing materials at a sub-100-nm scale. Whereas benefits of nanotechnology in areas as diverse as diagnosis, imaging, drug delivery, and

information and communication technologies are extensively publicized, the discussion of the potential effects of the widespread use of nanotechnology in consumer and industrial products is just beginning to emerge. In my laboratory, we are investigating the biokinetics and the pulmonary and cardiovascular toxicological potential of engineered nanoparticles. Studies on the pulmonary and extrapulmonary effects of particle shapes (e.g., spheres, tubes, rods), chemistries (e.g., polystyrene, TiO_2 , FeTiO_2 , carbon) and surface characteristics (iron coating, charge) are being investigated. These studies involve in vivo and in vitro investigations.

Water-pipe smoking (WPS) is a major type of smoking in Middle Eastern countries and is increasing in popularity in Western countries and is perceived as relatively safe. While the adverse pulmonary and cardiovascular effects related to cigarette smoke have been extensively described, data related to the effects of WPS are very scarce. Clinical studies have reported some difficulties in studying the isolated effects of WPS because most of the smokers are also current or past cigarette smokers. Therefore, experimental studies investigating the pathophysiological mechanisms underlying the adverse health effect of WPS are critical and much needed. In my laboratory, we are assessing the respiratory and cardiovascular effects of WPS in mice.

The cancer laboratory

The overall thrust of the pancreatic cancer program is elucidating the molecular mechanisms underlying its rapid growth and invasion and in developing novel strategies to treat it. Prof. Adrian investigates various aspects of this pancreatic cancer, including growth and differentiation signaling pathways, the role of the lipoxygenase pathways in tumor growth and escape from apoptosis, the interactions between pancreatic cancer cells and the pancreatic endocrine islet tissue, as well as the reasons for the severe metabolic disturbance and cachexia that accompany this devastating disease. With his collaborators, he has developed some novel therapeutic agents, one of which recently entered clinical trials. New anti-cancer compounds have been isolated from marine organisms, including the sea cucumber. The mechanisms by which these agents cause cell cycle arrest and induce apoptosis in cancer

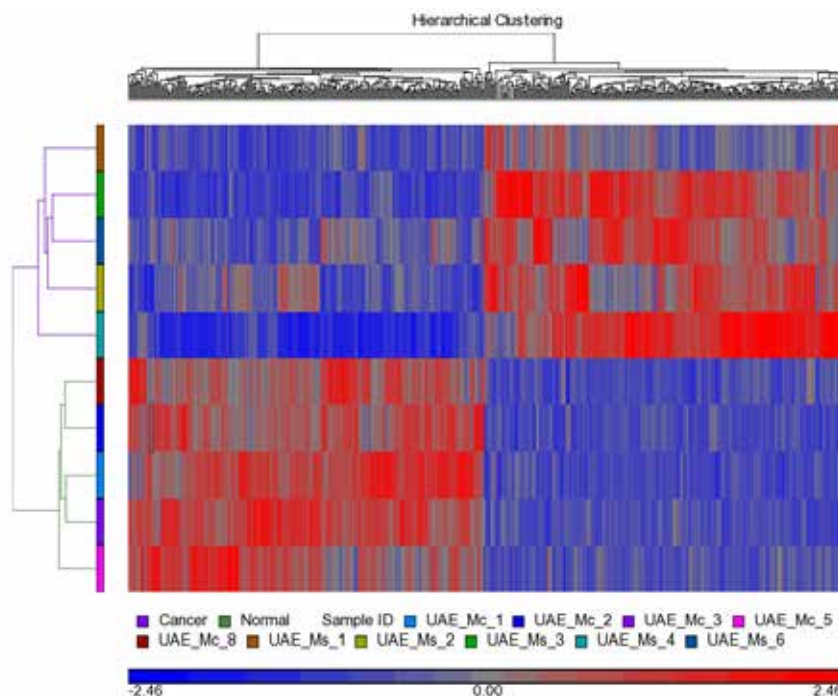
cells are currently under investigation. Recently, he has used oligonucleotide microarrays to identify novel growth-related genes from their expressed sequence tags and this has led to the discovery of a new tumor suppressor gene in the endoplasmic reticulum.

In other studies we have shown that the sea cucumber-derived triterpene glycoside, frondoside A causes marked growth inhibition of human pancreatic cancer cells, both in vitro and in vivo. Frondoside A causes apoptosis of the cancer cells via the mitochondrial pathway. We have recently shown that frondoside A has synergistic anti-cancer effects when combined with gemcitabine, the standard therapeutic agent used in this disease. Studies are underway to identify the mechanism of action of frondoside A.

Little is currently known about the mechanisms of cancer cachexia, which is a major cause of morbidity and mortality in cancer patients. In collaboration with Prof. Farouk

Safi in the Department of Surgery and Dr. Joel Malik at Weill Cornell Medical College in Qatar, we have been investigating early gene expression changes in skeletal muscle from patients with cancer cachexia. The studies were performed using next generation RNA sequencing (RNAseq). Early exciting findings show marked differences in gene expression. In silico analysis using the Kyoto Encyclopedia of genes and Genomes identified grouping of genes with altered expression into different pathways (KEGG Pathways). particularly in expression of genes previously shown to be involved in various cardiomyopathies, with the ubiquitin protein degradation pathway, normal muscle contractile function, calcium signaling and metabolic pathways. These studies should shed light on the mechanisms of cachexia and pave the way for therapeutic intervention of this debilitating problem.

Diabetic neuropathy and retinopathy



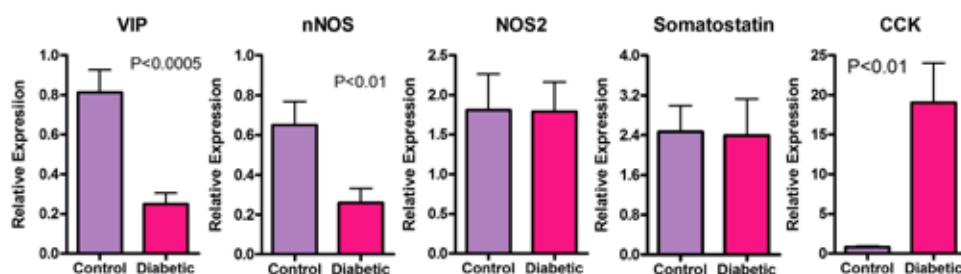
Heat map showing expression of individual genes (each vertical line represents an individual gene) in control patients (top panels) and patients with cancer cachexia (bottom panels). Increased gene expression is denoted in red and reduced expression denoted in blue.

Changes in gene expression in the diabetic eye, in sympathetic and dorsal root ganglia, corpus cavernosum and vascular tissues were investigated by low density expression array in studies funded by the Emirates Foundation and the FMHS by Professors Adrian and Morrison. Several interesting early changes in gene expression were seen, particularly in the retinas of diabetic animals. Ongoing studies include confirmation of the expression changes using fast real-time RT-PCR and immunocytochemistry for the protein products of these genes in collaboration with Dr. Eric Mensah-Brown in the Department of Anatomy. Marked changes in gene expression have been documented. For example, in the pelvic ganglia from diabetic animals the expression of vasoactive intestinal polypeptide (VIP) and neuronal nitric oxide synthase (nNOS) are dramatically reduced in diabetic animals, while expression of another transmitter, Cholecystokinin (CCK) is dramatically increased. Since VIP and nNOS play a role in penile erection and in control of bladder function, these changes are likely to explain the erectile dysfunction and for urinary retention that are seen in diabetics. Early changes in expression of several genes, including calpain 3, and several crystallins, in the retina have been seen in three different models of diabetes in the rat. Changes in expression of these genes are likely to be involved in the pathophysiology of cataracts, diabetic retinopathy and glaucoma.

hormones in diabetes and obesity

Enteroendocrine L-cells produce glucagon gene products (GLP-1 and oxyntomodulin) as well as PYY. All are satiety factors. GLP 1 is also an incretin. The number of L-cells and hormonal contents increases distally through the gut with highest concentrations in the rectum. We have previously shown that intracolonic infusion of bile salts in humans causes secretion of L-cell hormones, triggered via TGR5 membrane receptors. Together with colleagues in the Department of Internal Medicine, Prof. Adrian has been investigating release of these lower GI hormones in obese patients with type 2 diabetes mellitus. Using a simple and well-tolerated agent, this group has shown substantial increases in circulating concentrations of GLP-1, PYY and insulin. The release of the lower GI hormones resulted in a fall in circulating glucose levels and a marked reduction in spontaneous caloric intake of a subsequent meal. This mechanism is likely to be valuable in the treatment of type 2 diabetes and obesity. Investigations focused on the improvement of diabetic status and reduction in body weight through this pathway are planned.

Clinical studies on lower gastrointestinal



Relative expression of mRNA for VIP, neuronal NOS (NOS1), NOS2, somatostatin, and CCK in pelvic ganglia from control rats and diabetic rats 12 weeks after treatment with streptozotocin. Real-time RT-PCR confirmation of low density gene expression array data, n=8 in each group.

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Howarth F C, El Nebrisi E, Jayaprakash P, Qureshi MA, Parekh K, Oz M, Adrian TE. (2014). Effects of a sucrose-enriched diet on the pattern of gene expression, contraction and Ca²⁺ transport in Goto-Kakizaki type 2 diabetic rat heart. *Cardiovascular Research*, 103; Supplement: 1, P400, 2014

Nemmar A, Beegam S, Yuvaraju P, Yasin J, Ali BH. (2014). Prothrombotic and systemic inflammatory effects caused by amorphous silica nanoparticles in mice *Pharmacology & Physiology International Scientific Congress* 2014, Kuala Lumpur, Malaysia., on 22 to 24 August 2014. Abstract published in *J Vasc Res* 2014;51(Suppl 1):1-43 (DOI:10.1159/000367639).

Salem KA, Sydorenko V, Qureshi MA, Oz M, Howarth FC. (2014). The Acute effects of pioglitazone on ventricular myocyte shortening and Ca²⁺ transport in the Goto-Kakizaki type 2 diabetic rat. The 8th Dubai International Conference for Medical Sciences, Dubai, UAE.

Proceedings, Conferences, Invited Lectures, Web Sites and Others

Al Azwani EK, Al Haddad AH, Mahamoud Y, Safi F, El Salhat H, Malek J, Adrian TE. (2014). RNA-seq Study Of Muscle And Adipose Tissue In Cancer Patients With Early Cachexia. Qatar Foundation Annual Research Conference Proceedings: Vol. 1, HBPP0326. DOI: 10.5339/qfarc.2014.HBPP0326, 13 Nov 2014

Al Haddad AH, Al Azwani EK, Mahamoud Y, Safi F, El Salhat H, Malek J, Adrian TE. (2014). Next generation sequencing of the muscle and fat transcriptome in patients with cancer cachexia reveals novel mechanisms. Proceedings of the 2nd International Cancer Cachexia Conference – Evolving mechanism and therapies. Montreal, Canada, September 26-28, 2014

Al Hemeiri A, Al Hammadi N, Yuvaraju P, Beegam S, Yasin J, Adeghate E, Ali BH, Nemmar A. (2014). Short-term pulmonary effects of nose-only waterpipe (shisha) smoking exposure in mice. 9th International Scientific Conference for Medical Students in the GCC Countries. Al-Ain, UAE, December 26-30, 2014

Al Dhaheri R, Alamiri J, Alhefeiti S, Al Saedi H, Beegam S, Yuvaraju P, Nemmar A. (2014). Protective effect of emodin against particulate air pollution-induced impairment of vascular and cardiac homeostasis in mice. 9th International Scientific Conference for Medical Students in the GCC Countries. Al-Ain, UAE, December 26-30, 2014

Lammers WJ, van der Vusse GJ. (2014). Organizers of a symposium: 'Electrical propagation in smooth muscle organs' at the annual FEPS meeting, Budapest, Hungary, August 2014.

Lammers WJ. (2014). Normal and abnormal electrical propagation

in the small intestine. Symposium 'Electrical propagation in smooth muscle organs', FEPS 2014, Budapest, Hungary, August 2014.

Ljubisavljevic M, Oommen J, Javid A, Parkeh K, Shehab S, Adrian T. (2014). Effects of different repetitive transcranial magnetic stimulation protocols on changes in gene expression in the rat brain. Poster B065 Tue 8/7/2014, 2289, 3036. 9th FENS forum of Neuroscience, Milan, Italy, July 5-9.

Shehab S, D'souza C, Ljubisavljevic M, Redgrave P. (2014). High frequency electrical stimulation of the subthalamic nucleus excites target structures in a model using c-fos immunohistochemistry. Poster C069 Wed 9/7/2014, 2187, 3707. 9th FENS forum of Neuroscience, Milan, Italy, July 5-9

Awards

Prof A Nemmar
Excellence in Teaching Award,
College of Medicine and Health
Sciences, UAEU - 2014

RESEARCH GRANTS

CMHS New Research Grants

Prof FC Howarth (PI)
Effects of sodium-glucose co-transporter inhibitors on cardiac muscle contraction and Ca²⁺ transport in the diabetic heart.

Profs TE Adrian (PI), Farouk Safi
Effects of Frondoside A on Pancreatic Cancer Stem Cells.

Prof. TE Adrian (PI).
Licofelone a dual LOX/COX inhibitor for cancer.

Prof A Nemmar (PI), Ms P Yuvaraju, Ms S Beegam
Adverse respiratory effects of water pipe smoking in mice: Time-course study and influence of thymoquinone and curcumin.

Dr O Bakouch (PI), Prof A Nemmar, M. Maaiz, Drs S Al Shamsi, A Al Dhanhani

The function of the glomerular filtration barrier in angiotensin-induced hypertension and STZ-induced diabetes. Experimental studies

Prof M Ljubisavljevic (PI)
Effects of transcranial direct current stimulation of left prefrontal cortex on motor performance in old age

CMHS Faculty Seed Grant

Dr Sandeep S (PI)
Origins and Patterns of Electrical Propagation in the isolated Rat Uterus during the course of Pregnancy

UAEU / National Research Foundation Research Grant

Profs FC Howarth (PI), K Yuill, E Adeghate
Electrical remodelling of the atrioventricular node in diabetes. [2011-2014]

UAEU Center-Based Interdisciplinary Research Grant Competition

Dr G Khan (PI), Prof TE Adrian, Dr S Attoub
Impact of Epstein-Barr Virus Small RNA (EBER-1) on Genes Associated with Inhibition of Apoptosis. [2013-2016].

UAEU Program for Advanced Research grant

Prof FC Howarth (PI),
An investigation of sinoatrial node cells electrophysiology in the diabetic rat. [2014-2016]

UAEU-Sultan Qaboos University joint collaboration Grant

Prof A Nemmar (PI), Prof BH Ali (PI)
Experimental studies on the interactions between pulmonary exposure to particulate air pollution and acute renal failure: pathophysiologic mechanisms and influence of protecatant drugs. [2012-2015]

Summer Undergraduate Research Experiences (SURE)

Prof A Nemmar [PI]
Evaluation of the possible protec-

tive effects of emodin against particulate air pollution-induced impairment of vascular and cardiac homeostasis. [2014-2015]

Emirates Foundation

Profs TE Adrian (PI), JFB Morrison, A Perrin, Dr R Hennig.

The Expression of Genes in Neurons and the Tissues they Innervate During Development of Neuropathy in Two Animal Models of Type 2 Diabetes and in Human Tissues [Extension - 2014].

Sheikh Hamdan Award for Medical Sciences

Profs FC Howarth (PI), TE Adrian, Dr M Oz, Prof H Raza, Mr A Qureshi, Ms K Parekh, Ms A John, Mr L Kury, Mr K Salem
Remodelling of cardiac muscle and Ca²⁺ transport proteins underlies the transition between normal contraction in pre-diabetic heart and abnormal contraction in genetic and diet-induced type 2 diabetic heart. [2012-2014]

Profs H Raza (PI), FC Howarth
Elucidation of the molecular mechanisms and metabolic changes in inflammation and

diabetes: Anti-diabetic and anti-inflammatory effects of non-steroidal anti-inflammatory drugs. [2012-2014]

Terry Fox Fund for Cancer Research

Profs TE Adrian (PI), F Safi, Drs S Al Marzooqi, A Al Bawardi.
Isolation of Human Pancreatic and Hepatic Cancer Stem Cells and Investigation of their Eradication

Profs TE Adrian (PI), JFB Morrison, A Perrin, Dr R Hennig
The Expression of Genes in Neurons and the Tissues they Innervate During Development of Neuropathy in Two Animal Models of Type 2 Diabetes and in Human Tissues [Extension - 2014].

National Research Foundation Grant

Prof M Ljubicavljjevic [PI]
Long-term effects of noninvasive brain stimulation on food craving

Profs S Shehab [PI], M Ljubicavljjevic
Neuropathic pain due to trauma and inflammation of the viscera

Prof YE Greish (PI), Profs TE Adrian, A Amin.
Targeting Pancreatic and Hepatic Cellular Carcinoma Stem Cells Utilizing a Novel Nanotechnology Approach. [2015-2017]

Prof A Nemmar (PI), Dr S Al-Salam, Prof BH Ali
Water-pipe (Shisha) smoking and hypertension: Pathophysiologic mechanisms and possible influence of antioxidant and anti-inflammatory drugs. [2011-2014]

Other

Joachim Leitner Foundation, Dubai
Profs TE Adrian (PI), T Rizvi
Characterization of TTMP a new tumor suppressor gene.

Al Jalila Foundation
Profs TE Adrian (PI), E Mensah-Brown, Dr H El Salhat
Studies on the Transcriptome of Patients with Cancer Cachexia. [2015-2017].



2014 Physiology



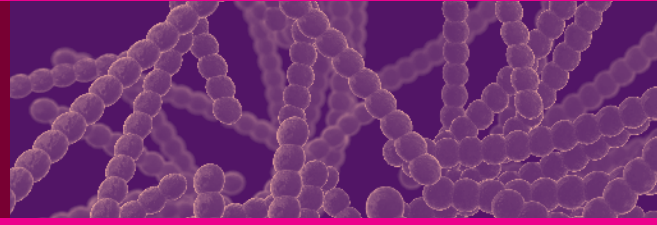
Standing: [from left to right]

Mr P Rajagopalan, Dr Sandeep BS, Prof A Nemmar, Prof M Ljubicavljjevic, Prof TE Adrian, Mr J Oommen, Mr Saeed, Mr MA Qureshi

Seated: [from left to right]

Ms P Jayaprakash, Ms Priyadarshini, Prof FC Howarth, Ms B Stephen, Ms S Beegam, Ms K Parekh.

Department of Psychiatry and Behavioural Sciences



A. Departmental Profile and Research Themes:

1. Epidemiological aspects of common mental health disorders in primary health care and community settings

- (a) Mental adjustment to cancer and its relation to Anxiety and Depression Among Oncology Patients at Tawam Hospital. Dr. O. Osman, Dr. E. Emam)
- (b) Prevalence of anxiety and depression among patients in Primary Care. (Dr. Osman, Dr. A. Shamsan, F. Almogaddam).
- (c) Affective and anxiety disorders in childhood and adolescence. (Dr. L. Amiri).
- (d) Life satisfaction among older adults in the UAE. (Dr. H. Moselhy).
- (e) The association of mental disorders with unhealthy behaviours among adults in the UAE (Dr. H. Moselhy).
- (f) Association of stress vulnerability, stress and work-related injuries in workplace settings (H Moselhy, S. Yousef).
- (g) Free time activities and behavioural disorders among UAE children (S. Yousef)

2. Personality, psychosocial and trans-cultural aspects of physical illness

- (a) Body image disturbance in outpatients undergoing bariatric surgery procedures. (Dr. O. Osman, E. Emam, F. Almogaddam).
- (b) Behavioral, social and functional morbidities among Bariatric Surgery patients in the UAE (Dr. O. T. Osman, E. Emam, F. Almogaddam, F. Torab)
- (c) Depressive disorders as a risk factor in susceptibility to coronary heart disease. (Dr. H. Moselhy, S. Yousef).
- (d) Relation of brain lesion and apathy, depression, cognition and daily function in stroke patients. (Dr. H. Moselhy, S. Yousef).
- (e) Psychiatric comorbidity among children with learning disorders.(S. Yousef)

Professor and Chair:

Prof. HF Moselhy

Professors:

Prof. R Ghubash

Associate Professors:

Dr. OT Osman

Assistant Professor:

Dr. L Amiri

Dr. KA Aziz

Research Technician

Mr S Yousef

Ms. F Almogaddam

Senior Administrator

Ms. A Al Shamsi

Clerk II:

Mr O Pocker

(f) Psychosocial and environmental determinants of childhood behavioral disorders. (S. Yousef)

(g) Housemaids and behavioural disorders of UAE children (S. Yousef)

3. Cultural aspects of psychiatry

(e) A survey of Psychodermatology for Middle Eastern Dermatologists (Dr. OT OSMAN, F. Almugaddam)

4. Collaborative Research

(a) Adjustment to Mental Health problems Among Oncology Patients. Collaboration with Tawam Hospital psychiatry, Psychology and Oncology services. (Dr. E.Emam, Dr. O. Osman)

(b) Cultural Aspects of Trauma and Recovery: A Joint partnership research project with Harvard Program on Refugee Trauma (HPRT) –Harvard Medical School and UAEU Global Health Institute (Dr. O. T. Osman, Dr. L. Nasir & Dr. R. Mollica,).

(c) Drug and Alcohol Abuse in the United Arab Emirates. A joint partnership with the National Rehabilitation Institute (NRC) in Abu Dhabi (Dr. O.T. Osman, A. El Kashef, I. Blair, Dr. T.C. Awe)

(d) Pattern of heroin use among Egyptian population: positive gate way hypothesis (H Moselhy)

(e) Family profile among drug user in Mansoura, Egypt (H Moselhy)

(f) The rate of HIV among Egyptian adults drug users (H Moselhy)

(g) Suicidal behavior and attitudes of Jordan's nursing students (S. Yousef, H Moselhy)

(h) Depression associates with factors influencing the carrier choice of Jordan's nursing students (S. Yousef, H Moselhy)

(i) Depression and self-esteem among adolescents in UAE (S. Shah, S. Yousef)

(j) DiAlert: a prevention program for overweight first degree relatives of type 2 diabetes patients: Emirate National -Community Based Trail (Dr. Juma Alkaabi, S. Yousef).

(k) Burnout among health care workers in the emirates of Abu Dhabi: Across-sectional study (H Moselhy, S. Yousef).

(l) Systematic review of burnout among Arab health care workers (I. Elbarazi, S. Yousef, T. Loney).

(m) Internet addiction among Intern doctors in Cairo University Hospital (H Moselhy)

(n) Developing novel model for clinic-biological patterns in depression from biosignal, biochemical and genetic measures. Partnership with Khalifa University (H Moselhy, S. Yousef).

(o) Sexual dysfunctions among opioid dependents and its correlation with level of sex hormones (Moselhy)

(p) Behavioral and emotional problems among young children in Abu Dhabi Emirate, UAE (Co-Investigator; PI Al-Mekaini L) (Amiri L)

(q) Psychiatric manifestations in children with inborn errors of metabolism (IEM), (Co-Investigator, PI Al-Jasmi F) (Amiri L).

5. Postgraduate Education and Training

(a) Arab Board Curricular development, credentialing and accreditation in General Psychiatry (Dr. O. Osman).

(b) Arab Board Curricular development in child & adolescent psychiatry (Dr. O. Osman).

7. Recent translation, development and validation of psychiatric instruments for use among Arabic speaking population.

- Mini-International Neuropsychiatric Interview (MINI) (Dr. O. Osman).

8. Biological Psychiatric Research:

- Group IVA phospholipase A2: A potential marker for schizophrenia (Dr. H. Moselhy)

- Molecular genetic study of schizophrenia in Arab population (Dr. H. Moselhy)

- Blood and hair heavy metals levels among UAE children (S. Yousef).

- Association of heavy metals concentration levels with childhood developmental and behavioural disorders (S. Yousef).

- The Influence of A118G single nucleotide polymorphism of human Mu Opioid Receptor Gene and the MDR1 Gene in Egyptian patients with Tramadol Induced Seizure (H Moselhy)

- Frequency of C3435 of ABCB1 gene in patients with tramadol dependence (Moselhy)
- Whole-Exome Sequencing and Homozygosity Mapping Analysis of Emirati Families with Multiple Schizophrenic Patients (B Ali, H Moselhy)
- Radiologic findings on imaging studies among psychiatric inpatient Psychiatric population in the United Arab Emirates. (Dr. O. Osman, Dr. A. Muffadel).

9. Addiction Research:

Epidemiology and qualitative Characteristics of Smoking 'Midwakh; and other tobacco products in the UAE. A joint Partnership Collaborator with Abu Dhabi Health Authority (O.T. Osman)

Original articles in peer reviewed journals

Amawi N, Mollica R, Lavelle J, Osman O, Nasir L. (2014). Overview of Research on the Mental Health Impact of Violence in the Middle East in Light of the Arab Spring: Original Article. *J Nerv Ment Dis*, 202, 9, 625-629.

Elhamady M, Awara M, Abdelati A, Yousef S, Moselhy H. (2014). child sexual abuse among opioid dependence syndrome. *Addict Disorders and their treatment Journal*, 13 (4); 151-158.

Elhamady M, Mobasher M, Yousef S, Moselhy H. (2014). pattern of sexual dysfunction among opioid dependency in Egypt. *Addict disorders and their treatment Journal*, 13 (2): 68-74.

Enaba D, ElBaz H, Moselhy H. (2014). higher frequency of C3435 of ABCB1 gene in patients with tramadol dependence. *Am J Drug Alcohol Ab*, 40 (4): 317-320.

Hamed MA, Hashem RS, Khalifa DA, Awaad MI, Serafi DM, Abdelaziz KM. (2014). Assessment of cognitive functions in euthymic patients with bipolar II disorder compared with healthy controls. *Middle East Current Psychiatry*, 21: 244-251.

Okasha TA, El Sheikh MM, El Missiry AA, El Serafi D, El kholy S, Aziz K A. (2014): Cognitive Functions In Euthymic Egyptian Patients With Bipolar Disorder: Are they different from healthy controls? *J Affect Disorders*, September, 166:14-21.

Osman O, Abbas A, Eid H, Salem M, Abu-Zidan F. (2014). Alcohol-related Road Traffic Injuries in Al-Ain City, United Arab Emirates. *Traffic Inj Prev*, 16, 1, pp1-4 Publisher: Taylor & Francis ISSN: 1538-9588.

Osman OT, Abbas AK, Eid HO, Salem MO, Abu-Zidan FM. (2014). Interpersonal violence in the United Arab Emirates. *Int J Inj Contr Saf Promot*, 21(3):260-5.

Shaikh RB, Muttappallymyalil J,

Sreedharan J, Osman OT. (2014). A call to address Dokha smoking: an emerging form of tobacco use. *Public Health*, Aug;128(8):766-7. doi: 10.1016/j.puhe.2014.05.010. Epub 2014 Jul 4.

Vupputuri S, Hajat C, Al-Houqani M, Osman O, Sreedharan J, Ali R, Crookes AE, Zhou S, Sherman SE, Weitzman M. (2014). Midwakh/dokha tobacco use in the Middle East: much to learn. *Tobacco Control*, 23-10-2014. <http://www.ncbi.nlm.nih.gov/pubmed/25342581>

Yousef S, Eapen V, Zoubeidi T, Mabrouk A. (2014). Behavioral correlation with Television viewing and Videogame use among children in UAE. *Int J Psych Clin Pract*, 18 (3):203-207.

Zaki N, El-Batrawy A, El-Missiry A, Ibrahim D, Aziz K A. (2014): Cognitive functions in euthymic patients with bipolar II disorder and their correlation with the clinical profile. *Middle East Current Psychiatry*, 21:139-147.

Published Abstracts, Letters and Correspondence

Muffadel A, Osman OT. (2014). Prevalence and correlates of positive findings on radiologic/imaging studies among psychiatric inpatients in the United Arab Emirates. *XVI World Congress of Psychiatry Madrid*, 4, 39, 221, 3815.

Osman O, Mollica R, Nasir L, Hashim J, Lavelle J, Amawi N, Zoubaidi T. (2014). Trauma care survey of key informant psychiatrists and primary care physicians in the middle east. *XVI World Congress of Psychiatry Madrid*, 5, 51- Psychiatry in the developing world, 151, 3867.

Osman OT, Sabri S, Alraesi H, Shamsanm A, Risk D. (2014). Frequency of Symptom Expression Among Primary Care Women With Premenstrual Dysphoric Disorder In the United Arab Emirates. *XVI*

World Congress of Psychiatry Madrid, 6, 75, 573, 3912.

Proceedings, Conferences, Workshops, Invited Lectures, Web-sites and others

Alkaabi J, Yousef S, Al Maskari F, Al Ahbabi N, Al Ameri R. (2014). Prevention program for overweight first degree relatives of type 2 diabetes patients: randomized control trial. *The 8th Dubai International Conference for Medical Sciences*. Dubai, UAE, 16-17 December.

Aziz, AK. (2014). Heart Failure and Depression. *4th World Heart Failure Congress*, Al-Ain, UAE, 11th December.

Moselhy H. (2014). Untangling the complexities of mood disorders. *Neuroscience summit (bipolar disorder session)*, Dubai, 7-8 March 2014.

Moselhy H. (2014). Sexual exploitation of schizophrenic female. *Al Ain Hospital*, Al Ain, 29 April.

Moselhy H. (2014). Psychological conflict theory of Alsakindary. *Muslim psychologist meeting*, Jakarta, Indonesia, 15-17. 6.2014.

Moselhy H. (2014). Apathy in stroke. *1st Khorphakan hospital psychiatric conference*. Khore Fakhani, UAE, 26.9.2014S.

Osman OT. (2014). Violence and Substance Abuse Among Trauma Patients in Al Ain. *Invited Hospital wide Plenary Lecture*. Alain Hospital Medical Library Auditorium. May, 28, Al Ain Hospital, Al Ain.

Osman OT. (2014). Prevalence and correlates of positive findings on radiologic/imaging studies among psychiatric inpatients in the United Arab Emirates. *Oral Communication at the XVI World*

Congress of the World Psychiatry Association. Madrid - Spain, September 16.

Osman OT. (2014). How to understand and implement the Health Authority of Abu Dhabi Guidelines for Screening community Mental health patients for anxiety and depression. *Oud Altouba Family Health Centre*, Al Ain, September 22.

Osman OT. (2014). Screening for depression using the Patient's Health Questionnaires (PHQ- 9) *Oud Altouba Family Health Centre*, Al Ain, September 29.

Osman OT. (2014). Screening for Anxiety using the Generalized Anxiety Disorder Scale (GAD-7) *Oud Altouba Family Health Centre*, Al Ain, October 6, 2014.

Osman OT. (2014). How to understand and prevent Substance abuse and addictions. *Invited Lecture in a University Symposium on Drugs of Abuse: 'Your future guarantees your country: Say no to drugs'*. UAEU, November 19.

Osman OT. (2014). Cognitive Behavioral Therapy for Depression *Clinical Workshop*. Alain Hospital, Al Ain, December 15.

Osman OT. (2014). Coping with suicide, death and dying *Cancer patients. Workshop at Alain Hospital*, Al Ain, December 16.

Osman OT. (2014). Evidence based assessments and therapies for Eating Disorders. *Group clinical supervision Workshop*. Alain Hospital, Al Ain, December 17.

Osman OT. (2014). Dialectical Behavioral Therapy for high risk patients with personality disorders. *Invited Lecture in a Workshop on Psychotherapy Supervision, the Clinical Diploma in Applied Psychological Skills and Competencies in Mental Health*. The College of Medicine and Health Sciences-UAEU, November 19.

Osman OT. (2014). Overview of Evidence Based Assessments and Therapies for Depression. *Invited*

Lecture in a Workshop on Psychotherapy Supervision. The Clinical Diploma in Applied Psychological Skills and Competencies in Mental Health. At the College of Medicine and Health Sciences- UAEU, November 19.

Osman OT. (2014). Evidence Based Assessments and Therapies for Substance abuse and addiction. Invited Lecture in a Workshop on Psychotherapy Supervision. The Clinical Diploma in Applied Psychological Skills and Competencies in Mental Health. At the College of Medicine and Health Sciences, UAEU, November 19.

Yousef S. (2014). DiAlert- Educational and prevention program for

pre-diabetic patients. The 4th GCC Symposium of Clinical Nutrition and Chronic disorders, Dubai, Sept 27-28.

Yousef S. (2014). The Fourth Conference of Childhood Obesity and physical activity, Health and Nutritional research workshop, Kuwait, 18-20 Feb.



Research Grants

CMHS New Research Seed Grant

Dr L Amiri (PI)
Characteristics of suicide attempts among national UAE population

Khalifa University of Science, Technology and Research Grant
Dr Khandoker A (PI), Prof H Moselhy, Mr S Yousef

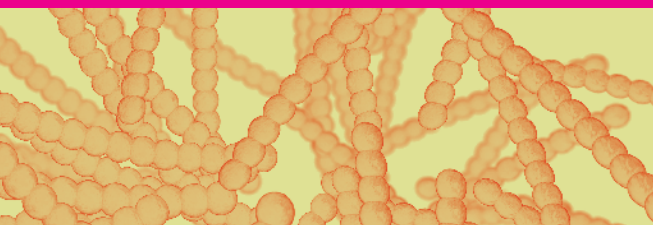
Developing novel model for clinical biological patterns in depression from biosignal, biochemical and genetic measures [2014-2016]

UAE University Program for Advanced Research [UPAR]
Dr B Ali (PI), Prof H Moselhy
Whole-Exome Sequencing and Homozygosity Mapping Analysis of Emirati Families with Multiple Schizophrenic Patients. [2014-2017]



2014
Psychiatry

www.cmhs.uaeu.ac.ae/Departments/Psychiatry Tel: 7672000 / Fax: 7672995



Department of Radiology

Research Profile

Professor & Chair:
Prof RD Langer
Associate Professor:
Dr K FW N van Gorkom
Assistant Professor:
Dr H Komaromy*
Teaching Assistant:
Dr T Al Mansour
Secretary:
Ms. KSM Al Kaabi

**until 08/2014*

All faculty members in the Department of Radiology focus on research in areas relevant to the nation's need, i.e. imaging in oncology, evaluation and classification of genetic diseases and congenital malformations, neuro-imaging, radio contrast media (RCM) and MRI contrast media research and basic radiological research – incorporating animal studies in collaboration with CMHS basic sciences departments and departments at other UAEU colleges and units.

Prof. Ruth Langer's main research interest is in the field of new cross-sectional imaging modalities, such as dual energy – and multi slice computed tomography (DECT, MSCT). DECT has been assessed for renal stone disease and renal stone composition in the UAE (fig. 1 a + b). The latter is different from renal stone composition in other parts of the world. Another field of interest is imaging in patients with congenital malformations and skeletal dysplasias, of greatest interest in the UAE and the entire Gulf region due to its high prevalence. Furthermore her research interest includes basic research in radio contrast media and gadolinium bound contrast agents (GBCA), the evaluation of nephrogenic systemic fibrosis (NSF), detected in patients with underlying renal disease and other disorders. Her research portfolio comprises animal studies on newly developed RCM and gadolinium bound contrast agents (GBCA), responsible for NSF in humans. She has been a member of the Oncology Research Priority Group and the Genetics Research Priority Group.

Dr. Klaus FW Neidl van Gorkom's main areas of research include neuroimaging, head & neck-, molecular -, and cancer imaging, in accordance with particular needs of the UAE community. An ongoing project is imaging in patients after bariatric surgery in collaboration with the CMHS Department of Surgery. One of his long-term projects is the development of state-of-the-art,

high-tech neuro-imaging, like MRI spectroscopy in metabolic and genetic diseases and brain tumors, perfusion-imaging for stroke and tumors, tensor-imaging and functional MRI for behavioral diseases and tumors. Furthermore Dr. Neidl van Gorkom investigated in vitro gadolinium deposition in tissue after long-term intra-peritoneal GBCA injection in rats (fig. 2 a + b). He has been collaborating with the Neuroscience Research Priority Group and the Cancer Research Priority Group.

Dr. Hedvig Komaromy's research interest was in the field of neuroradiology, particularly white matter changes in patients with multiple sclerosis, traumatic brain injuries, migraine, Alzheimer's and Parkinson's diseases. For such projects sophisticated imaging equipment must be further upgraded in the CMHS teaching hospitals for improvement of patient care. Her seed grant project was 'multidetector trauma computed tomography – radiological findings in patients after road traffic accidents', one of the leading causes of death in the United Arab Emirates.

A long-standing project was the implementation of new MRI tools for prognostic judgment in patients with traumatic brain injury to further develop rehabilitation of trauma victims.



Fig. 1 a: DECT, coronal reconstruction, left supra-vesical and intra-renal calculi: two high-level calcium-containing stones



Fig. 1 b: DECT, corresponding matched image at 80 kV and 140 kV for density measurement: high-level calcium containing stone

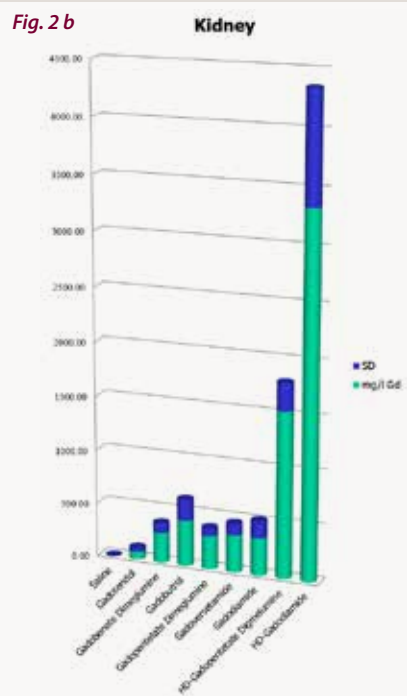
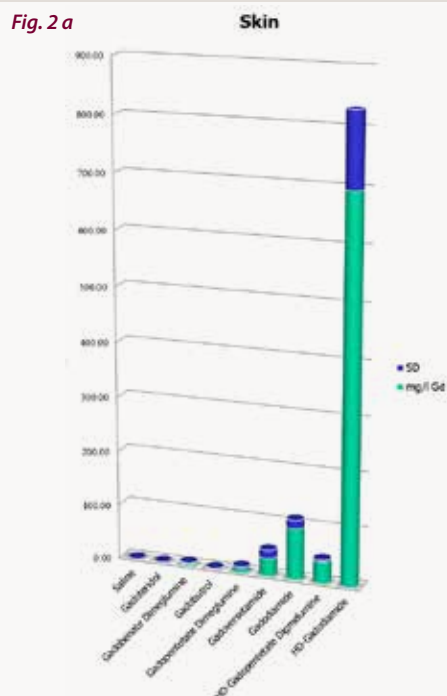


Fig. 2 a: Gadolinium concentrations in the skin, HD-groups were treated with 5.0 mmol/kg BW, all others with 2.5 mmol/kg BW

Fig. 2 b: Gadolinium concentrations in the kidneys, HD-groups were treated with 5.0 mmol/kg BW, all others with 2.5 mmol/kg BW

Articles in Peer-reviewed Journals

Langer RD, Neidl van Gorkom KF, Petroianu G, Lorke D. (2014). Potential interactions between radio contrast media and antibiotics and their effect on discography – an in vitro study. ECR 2014 / C-0027. DOI 10.1594/ecr2014/C-00469

Published Abstracts, Letters and Correspondence

Langer RD, Neidl v Gorkom K, Petroianu G, Lorke DE. (2014). Potential interactions between radio

contrast media and antibiotics and their effect on discography – an in vitro study, EJR(S) Abstracts 2014

Proceedings, Conferences, Web Sites and others

Langer RD. (2014). The role of MSCT in trauma imaging. 4th International Radiology Conference, Al Ain, UAE, 2014

Neidl van Gorkom KFW (2014).. Pitfalls in trauma imaging. 4th International Radiology Conference, Al Ain, UAE, 2014

RESEARCH GRANTS

UAEU Seed Grant

Dr. H Komaromy [PI]
Multidetector trauma computed tomography radiological – findings in patients after road traffic accidents. Due to her resignation the grant was returned to the CMHS Research Office.

2014

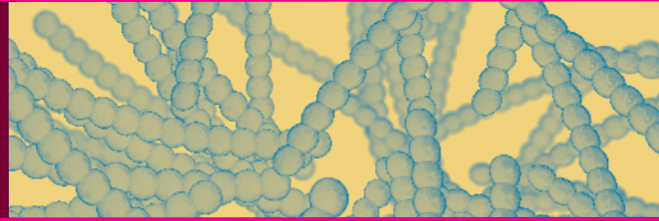
Radiology



*Standing left to right:
Dr. H Komaromy (resigned)
Prof. RD Langer, Dr. KFW Neidl
van Gorkom
(not included in the photo: Ms.
Khula Al Kaabi, Dr. Talib Al
Mansour)*

www.cmhs.uaeu.ac.ae/Departments/Radiology. Tel: 7672000 / Fax: 76722067

Department of Surgery



Research Profile

Faculty members in the Department have now increased from four (1999) to thirteen currently, seven of whom are UAE nationals (three being Teaching Assistants training overseas), with five previously advertised senior positions (breast/endocrine surgery, minimal access surgery, neurosurgery, orthopaedics and otorhinolaryngology) yet to be filled. All Faculty members have had Consultant privileges at Tawam Hospital and Professor Branicki, Abu Zidan and Al Mahmoud have privileges at Al Ain Hospital, Professor Branicki being the Head of the Surgical Institute (March 2013 to date).

Professor Frank Branicki

Clinical interests include the management of gastrointestinal bleeding, peptic ulcer and benign and malignant gastroduodenal disease in particular as well as acute care surgery and trauma management. Principal practice is in the management of esophago-gastric cancers. He has been an Instructor for 54 Advanced Trauma Life Support (ATLS) Courses, most as Course Director with involvement also in Advanced Trauma Care for Nurses (ATCN). These activities have generated data for presentation and publication. Collaboration with Assoc Prof Fawaz Torab led to a publication relating to peritoneal resorption capacity in an animal model of peritonitis. In addition, collaboration with Prof. Sherif Karam, Department of Anatomy, has involved experimental studies relating to gastric cancer conducted by a co-supervised Master's student, now awarded, under supervision in Prof Karam's laboratory. This work, funded by a research grant from the Terry Fox Foundation, has been published in two articles. Prof Branicki is Emeritus Editor of the indexed Asian Journal of Surgery and regularly reviews articles for the World Journal of Surgery, the European Journal of Surgical Oncology, etc. He also serves as the

Professor & Chair

Prof FJ Branicki

Professors

Prof F Abu-Zidan

Prof F Hammad

Prof F Safi

Associate Professors

Dr F Torab

Dr T AlMahmoud

Assistant Professors

Dr A Al Belooshi

Dr A Jawas

Dr Z Al Fardan

Dr S Al Thani

Teaching Assistants

Dr MA Al Ali

Dr K Al Awadhi

Dr E Al Essa

Research Support

Mr L Lubbad

Administrative Support

Ms Z Al Nasser

Mr C Aboobacker



Chair of the Undergraduate Medical Curriculum Committee and Director of the Final Integrated Examination for undergraduates on completion of training. In June 2010 he was the recipient of the Distinguished Performance Award in the Faculty of Medicine and Health Sciences (CMHS) at UAE University, being inducted as a Fellow of the American College of Surgeons in San Francisco in October 2011. In November 2013, he acted as host for the inaugural UK overseas Joint Surgical Colleges Fellowship Examination (JSCFE) held in Al Ain and examined postgraduates for this exam in Sri Lanka in 2014. These have been professional activities in 53 countries including promulgation of ATLS to four countries which have since established their own courses (Syria, Oman, Egypt and Iran). In 2014 Prof. Branicki presented invited lectures in Abu Dhabi, Al Ain, Dubai and Ulaanbaatar (Mongolia).

Professor Farouk Safi

Prof. Farouk Safi's clinical interests in colorectal and hepatobiliary surgery have led to presentations at national and overseas meetings. A member of the Scientific Committee for the 2nd Emirates Oncology Conference held in November 2014 his clinical practice has generated data relating to surgical interventions for hepatic, pancreatic and colorectal malignancy and



management of inflammatory bowel disease. Prof Safi directed the 2nd Liver Surgery workshop hosted at CMHS in March 2012 with local and overseas invited Faculty. Liver failure after hepatectomy, atypical appearance of hepatocel-

lular carcinoma and rare liver tumors are areas in which he has developed an interest.

Professor Fikri Abu Zidan

In 2014 Professor Fikri Abu-Zidan continued his focused research activities in the areas of trauma management, injury prevention, 'point-of-care' critical care ultrasound, and acute care surgery. He was effectively leading the Trauma Research Group of the CMHS till September 2013 when this transitioned to Dr Ali Jawas, Department of Surgery (CMHS). He is at present leading the CMHS Medical Education Research Group (MERGE).

Collaborative work continued with the Departments of Community Medicine (CMHS), and Departments of Surgery, Critical Care, and Orthopedics at Al Ain, and Al Rahba Hospitals. In 2014, Professor Abu-Zidan published 10 articles/reviews in international refereed Journals and gave 17 invited lectures in international conferences. At present he is studying methods of trauma training, biomechanics of injury, methods of injury prevention, and 'point-of-care' emergency ultrasound. He appointed Dr Hani Eid as a full time Senior Research Fellow in the Surgical Department to continue working on research stemming from the Road Traffic Collision Registry of Al-Ain City.

Professor Abu-Zidan serves at present as the Statistical Consultant for World Society of Emergency Surgery and the World Journal of Emergency Surgery and is the Statistical Editor for Hamdan Medical Journal. In 2014 Professor Abu-Zidan was invited as an International Judge for the International Major Incident Response Exercise (IMIREX) in Kuching, Sarawak, Malaysia and as an international expert in Belo Horizonte, Brazil for writing clinical guidelines for using ultrasound in trauma patients.

Professor Fayez Hammad

Prof. Fayez Hammad has clinical interests in minimally invasive surgery for renal stone disease and oncology in particular. He is the Founding Program Director for the residency training program in Urology which is currently under the auspices of HAAD (Health Authority of Abu Dhabi).

Prof. Fayez Hammad completed a study of the regional distribution and propagation of electrical activities in the isolated guinea-pig urinary

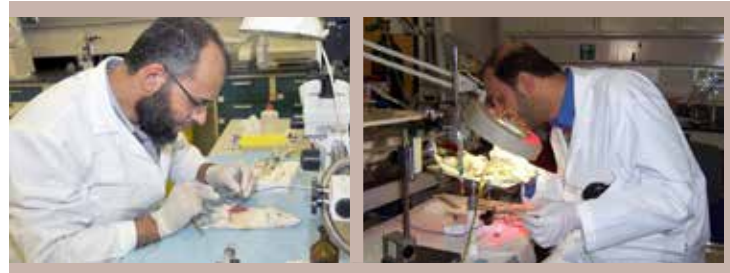
bladder in collaboration with Prof. Wim Lammers from the Department of Physiology, CMHS. This work which was funded by an Individual Research Grant from CMHS (UAE University, 2011) was published in the American Journal of Physiology. Also in collaboration with Prof. Lammers, Prof. Hammad has also conducted a project on 'Slow wave conduction disturbances proximal and distal to ileal end-to-end anastomosis following ileocystoplasty'. Final results will be presented at the Annual meeting of the American Urological Association in New Orleans (May 2015). In the field of electrical propagation, Prof. Hammad had also recently published in Acta Physiologica 2014 a review article on "Electrical propagation in the renal pelvis, ureter and bladder".

In collaboration with Dr. Ged Davis, University of Otago, New Zealand and Prof. Tony Wheatley, University of Galloway, Ireland, Prof. Hammad has completed a study on the effect of Bosentan on the 'Hemodynamic and tubular glomerular response to renal nerve stimulation following reversible unilateral ureteric obstruction' in the rat, recently published recently in Physiological Research. In 2014, Prof. Hammad, analyzed all the available published data related to the Urology Publications from the United Arab Emirates. This work with the lessons learned was published recently in BMC Res Notes.

In collaboration with Dr Hasan Elbiss, Department of Obstetrics and Gynaecology, Prof. Hammad has submitted for publication a study related to the incidence of prolapse in UAE women. With Dr Omran Bakoush, Department of Internal Medicine, CMHS, Prof. Hammad has completed a major study on the effect of diabetes mellitus on the recovery of kidney function following ureteric obstruction. This study involves measuring renal function serially up to 30 days following reversible 24-hr unilateral ureteric obstruction in normal and diabetic rats. In addition to hemodynamic and tubular renal functions, the effect of both diabetes mellitus and ureteric obstruction on glomerular permeability were investigated.

Ongoing laboratory studies in the Department of Surgery Research Lab include the following projects rat models of ischemia-reperfusion injury a) renoprotective effects of aliskiren, b) effect of Alda-1 on renal function, c) effect of thymoquinone on the renal function and d) protective

effects of Caryophyllene against renal dysfunction. All the experimental studies are performed in collaboration with Dr. Loay Lubbad, Research Assistant in the Department of Surgery.



Associate Professor Fawaz Torab

Associate Professor Fawaz Torab has been the Chair of the Al Ain Medical District (AAMD) Human Research Ethics Committee for many years. This Committee includes members from Tawam and Al Ain Hospitals in addition to Primary Health Care, Preventive Medicine, Zayed Military Hospital, Al Noor Hospital and Oasis Hospital. All research projects performed by human investigators or in a Health institution in AAMD are reviewed and approved by this Committee. A submission seeking renewal of acceptance with the Federal Wide Assurance authorities in the USA was successful. This will facilitate any research project carried out in collaboration with researchers in the USA. He is the Chair of the Human Research Ethics Committee which will cover, in addition to the above mentioned health institutions, all research carried out in humans in the UAEU. Dr Torab is also a member of the Research Ethics Board of UAEU.

Dr Torab is the 'Founder' and 'President' of the Obesity and Metabolic Surgery Interest Group in the UAE (OMSIG). This group was accredited in 2009 through the International Federation of Surgery for Obesity (IFSO) and the UAE has now



become a member of this prestigious federation. The team of OMSIG has won the bid to host the world conference of IFSO in 2018 in Dubai. In 2013, Dr. Fawaz was a founding member of the Gulf Obesity Surgery Society and was elected as General Secretary, in December 2014 he became Vice President. He is also the representative of the UAE to the Mediterranean and Middle East Endoscopic Surgery Society (MMESA) and was selected as President of MMESA until 2016. He was elected in 2013 as the President of the Emirates Society of the Laparoscopic-Endoscopic Surgery (ESLES) which functions under the umbrella of the Emirates Medical Association with 82 members throughout the UAE. He was the President of a successful annual ESLES conference was held in October 2014 in Al Ain under the patronage of HE Sheikh Hamdan bin Mubarak Al-Nahayan, Minister for Higher Education and Scientific Research and Chancellor of UAEU. ESLES has won the bid to organize the annual conference of MMESA which will be held in November 2015 in Dubai.

Assoc Prof Torab has been a member of the Scientific Committee of Sheikh Hamdan Awards since 2006 and a member of the Higher Committee of Research, Ministry of Health, since 2010. He was awarded by the Undersecretary of the Ministry of Health, UAE in May 2013 in appreciation for his contribution for the establishment of bariatric surgery in the UAE.

Assoc Prof Fawaz Torab's clinical interests are in acute care surgery, particularly pancreatitis and abdominal sepsis. There is a principal interest in laparoscopic procedures (bariatric surgery) for morbidly obese patients, whose co-morbidities affecting life style and life span can be ameliorated by surgical intervention. A prospectively collected large database relating to surgical procedures performed is accruing and Assoc Prof Torab has pioneered, in the UAE, the use of single incision laparoscopic surgery (SILS) for various procedures.

He has also continued oversight of basic and advanced laparoscopic surgical workshops and courses in the UAE and elsewhere for Residents in training and more experienced surgeons. Research interests in collaboration with departmental, basic sciences and hospital colleagues at Al Ain and Tawam Hospital include clinical outcomes of primary and revisional bariatric

surgery and single port procedures, experimental models of peritoneal sepsis, experimental studies of treatment of breast cancer. In 2014 he has made significant contributions with presentations nationally in Al Ain, Abu Dhabi, Dubai and Fujairah and internationally in Turkey, Egypt and Austria. For his contributions to laparoscopic surgery in the country and his collaboration with other regional societies, he was awarded the Honorary Minimal Invasive Surgery Fellowship of the Indian Society of Minimal Invasive Surgery in November 2014.

Since 2005, he has conducted a prospective randomized study of open versus laparoscopic approach for repair of perforated duodenal ulcers with serial analysis of proinflammatory mediators. In collaboration with Prof Basel Ramadi, Chair of Medical Microbiology and Immunology (CMHS), and oncologists at Tawam Hospital, a patent has been submitted in the USA, through the UAEU for a potential new treatment strategy with studies of the effect of Manuka honey, alone or in combination with standard chemotherapy, on inhibition of proliferation and viability of an estrogen receptor-negative breast cancer cell line. Assoc Prof Torab was appointed Associate Editor of the Journal of Minimally Invasive Surgical Science in 2012.

Assistant Professor Ali Jawas

Assistant Professor Ali Jawas successfully completed residency training in General Surgery at the University of Toronto in 2004 and was appointed Assistant Professor in December 2004. Following his basic training in Vascular Surgery he has also completed a Fellowship in Toronto and rejoined us in Al Ain in October 2005. He is actively involved in the provision of vascular services in Tawam Hospital. Previously the Program Director for our Integrated General Surgery Residency Training Program Asst Prof Jawas was appointed by the Arab Board for Medical Specialization, Damascus, Syria as their representative for General Surgery training in the United Arab Emirates. He has been a member of the Evaluation Committee for surgical training programs in different emirates. Dr. Jawas organized written examinations for the Board (June, November 2014) at CMHS in General Surgery, Orthopedics, Urology and Neurosurgery, in addition he is involved in clinical examinations. He is an Executive Board Member of the Scientific

and Organizing Committee of a Hemostasis and Thrombosis Congress to take place in Dubai in 2015. Also a member of the Executive Committee of the Gulf Vascular Surgery Society Dr Jawas was involved in the preparations for the Bahrain International Vascular Symposium taking place in 2015. A member of the General Surgery Residency Program Advisory Committee (ACGME accredited program) he is currently the Head of Trauma Research Priority Group at CMHS. He acts as a reviewer for malpractice and medical liability cases for HAAD and Dubai Health Authority.

Main research interests are related to the study of the management of peripheral arterial disease in Gulf countries. An Executive Board member in the Vascular Society Dr Jawas contributed to writing the "Guidelines for the Management of Peripheral Arterial Disease in the GCC countries". In 2013 he made two presentations at Cardiovascular Conferences in Oman and Turkey as well as participating in meetings in the USA.

Another compelling area of interest is vascular trauma. As an Instructor he has actively participated in teaching many Advanced Trauma Life Support (ATLS) Courses of the American College of Surgeons. Publication of the first article on the epidemiology of vascular trauma following road traffic collisions in the UAE was followed by articles on "Management of war related vascular injuries: experience from the Gulf War" and a "Management algorithm for blunt renal artery occlusion in multiple trauma patients". In 2013, following election, he accepted the Headship of the Trauma Group at CMHS, UAE.

Assistant Professor Tahra AlMahmoud

Promoted to Associate Professor in June 2013, Dr Al Mahmoud completed residency training in Ophthalmology at McGill University, Montreal. Fellowship training in Ottawa was concerned with diseases of the anterior chamber of the eye, and a fellowship in Uveitis again at McGill was undertaken. Together with colleagues in Canada, she is involved in collaborative clinical research comparing clinical outcomes of various refractive procedures such as Advanced Corneal Surface Ablation and Femtosecond Thin-Flap LASIK. In addition, Dr AlMahmoud is planning to continue her collaborations with the Department of Ophthalmology at Al Ain

and Tawam Hospital conducting ocular trauma research. Al Mahmoud has published 'A Code of conduct and professionalism for residents in training.'

Assistant Professor Saeed Al Thani

Assistant Professor Saeed Al Thani completed Residency Training in Orthopedics at the University of Toronto and was appointed Assistant Professor in July 2004. Following Fellowship training in 'sports injuries, hand and joint replacement surgery' at the same institution in Toronto he rejoined the CMHS in Al Ain in January 2006 and has been able to establish a busy Sports Injuries clinic and surgical practice in Tawam Hospital.

Dr Al Thani is President of the Emirates Orthopaedic Society, Chairperson UAE AO Chapter, and Vice President of the National Sports Medicine Committee. He is a member of World Orthopaedic Alliance and has been a member of the Scientific Committee of the Combined 33rd SICOT and 17th PanArab Orthopaedic Association meeting, hosting an Orthopaedic World Conference. Assist Prof Al Thani also holds membership of the Arab Board Examination/Licensing Committee and has been actively involved in teaching postgraduate orthopaedic surgery courses in Oman, the UAE and Switzerland. Assist. Prof Al Thani has interests in platelet rich plasma in tendinopathy management, functional outcome studies following rotator cuff repair and cruciate ligament reconstruction. He is also involved in establishing a National Total Joint Replacement Registry.

Assistant Professor Ali Abbas Al Beloushi

Assistant Professor Ali Al Belooshi completed his residency training in Toronto (Orthopaedic Surgery) having been appointed as an Assistant Professor in 2007. He undertook an extended period of subspecialty Fellowship training in lower limb arthroplasty including revisional surgery and is actively participating in elective and emergency clinical services at Tawam Hospital. Since 2009 he has been the Coordinator for the Junior Surgical Clerkship relinquishing this responsibility to Asst Professor Ali Jawas in June 2014.

He participated with two presentations in the International Congress for Joint Reconstruction (ICJR) meeting 2013 in Dubai. Chairperson for the hip and knee arthroplasty section of the

2nd Emirates International Orthopedic Congress held in Dubai there was oversight of the scientific program with more than 70 local and international speakers. Asst. Prof Al Belooshi has completed an MBA in post and is also the Chair of the Malpractice Committee in Orthopedic Surgery for the Dubai Health Care Authority and Head of the Orthopaedic Malpractice Committee for the Health Authority Abu Dhabi (HAAD).

Assistant Professor Zuhair Al Fardan

Assistant Professor Zuhair Al-Fardan completed Residency training in Plastic and Reconstruction Surgery in Toronto, and, subsequently, Breast Reconstruction Fellowship training including experience in microvascular, surgery. Appointed Assistant Professor he returned to the CMHS in August 2008 and is actively participating in clinical services at Tawam Hospital. Dr Al-Fardan's main interest areas are wound healing and clinical outcomes of reconstructive surgery. His principal clinical practice involves breast reconstruction and hand surgery. Dr Al-Fardan is a co-founder and academic officer for the 'Hand Surgery Club, UAE' and co-founder of the 'Abu Dhabi Plastic Surgery Club'. Asst. Prof Al Fardan is also an active Faculty member of AO-trauma Middle East which conducts hand surgery workshops countrywide, and an active member of the Canadian Society of Plastic Surgery. He has also conducted workshops for injectable fillers in the GCC countries. Dr Al-Fardan was a member of Organizing and Scientific Committees and Invited Faculty for Dubai Derma (2012) and Abu-Dhabi Dermatology and Aesthetic Medicine (2013) conferences.

Dr. Mohamad Al Ali

Dr. Mohamad Al Ali, appointed Teaching Assistant in the Department, undertook a short term period of training in Toronto for three months in 2007 and has completed residency training in Otorhinolaryngology at the Sahlgrenska University Hospital, Sweden, where he is now undertaking Fellowship training in Rhinology.

Dr Essa El Eassa

Dr Essa showed great interest in learning research methodology under the direct supervision and mentoring of Professor Fikri Abu-Zidan. He has finished two research projects in trauma in a very short period that ended with two publications in high impact prestigious journals. One was published in World Journal of

Surgery and the other in the Journal of Cardiothoracic Surgery. Furthermore, Dr Essa has recently finished his MBA in the field of "Change Management" which hopefully will encourage him to be involved in developing a course on Trauma Clinical leadership which is an important area for future trauma surgeons. Dr. Eassa is undertaking Residency training in General Surgery in Winnipeg (Canada).

A senior medical laboratory specialist, Mr Loay Lubbad took up appointment in the Department in May 2008 and is much involved, in particular, with experimental studies of smooth muscle function conducted by Prof. Hammad. Mr. Abdulla Jamal has been working for some years as a Departmental Secretary and has facilitated teaching activities in the both Clerkships, workshops and various CME activities with dedicated service to a high standard, with assistance from Mr. Aboobacker in office duties. Miss Zahra Al Nasser was approved as Departmental Secretary in April 2013 having acquired experience at Tawam Hospital and has taken on greater responsibilities with dedication and enthusiasm since the departure of Mr. Jamal in June 2014.

Skills and Procedural Training

In April 2004 the Department hosted inaugural back to back Provider and Instructor courses in the UAE for the Advanced Trauma Life Support (ATLS) with four invited Faculty and staff from Canada and the USA. These courses are training Emirati graduates and others in trauma care and will help reduce the burden of permanent disabilities and mortality from motor vehicle crashes. In March 2008 the CMHS was the site for inauguration of the Advanced Trauma Provider Course for Nurses (ATCN) in the UAE. These activities run in concert with ATLS courses are made possible with the enthusiastic participation of Instructors from Al Ain and Tawam Hospitals. The Department has hosted more than 40



courses since 2004.

With the support of Faculty Administration it was possible to establish a Clinical Skills and Procedural Training Centre which is a multidisciplinary venture to foster training for undergraduates and particularly Residents in a variety of clinical disciplines. Assoc Prof Fawaz Torab has been the Director of the Center with basic and advanced laparoscopic courses planned in collaboration with industry who have strongly supported the project financially. Both FAST and ATLS courses are accommodated as need be, and also courses in laparoscopic gynecological surgery and fetal ultrasonography. Ultrasound trainers include cardiologists, nephrologists, obstetrician/ gynecologists, radiologists and surgeons. This initiative has been made possible with donations from instrument and equipment manufacturers. A number of Interns and Residents in the General Surgery training program have successfully completed ATLS, FAST and laparoscopic training courses.

Original Peer-Reviewed Scientific Articles

Abu-Zidan FM, Abdel-Kader S, El Hussein R. (2014). Common carotid artery injury caused by a camel bite: case report and systematic review of the literature. *Ulus Travma Acil Cerrahi Derg*, 20(1):59-62.

Abu-Zidan FM, Mohammad A, Jamal A, Chetty D, Gautam SC, van Dyke M, Branicki FJ. (2014). Factors affecting success rate of Advanced Trauma Life Support (ATLS) courses. *World J Surg*, 38(6):1405-10.

Al Mahmoud T, Barss P. (2014). Peter Vehicle occupant restraint systems impact on eye injuries: a review. *Surv Ophthalmol*, 59(3):334-44

Elbiss HM, Raheel H, George S, Abu-Zidan FM. (2014). Clinical effects of gynecologic laparoscopy courses in the United Arab Emirates. *Int J Gynaecol Obstet*, 124(1):42-4.

Grivna M, Eid HO, Abu-Zidan FM. (2014). Epidemiology of burns in the United Arab Emirates: lessons for prevention. *Burns*, 40(3):500-5.

Grivna M, Eid HO, Abu-Zidan FM. (2014). Epidemiology, morbidity and mortality from fall-related injuries in the United Arab Emirates. *Scand J Trauma Resusc Emerg Med*, 2;22:51.

Hammad FT, Stephen B, Lubbad L, Morrison JF, Lammers WJ. (2014). Macroscopic electrical propagation in the guinea pig urinary bladder. *Am J Physiol Renal Physiol*, 307(2):F172-82.

Hammad FT. (2014). Electrical propagation in the renal pelvis, ureter and bladder. *Acta Physiol (Oxf)*. September 10. doi: 10.1111/apha.12392. [Epub ahead of print].

Hammad FT. (2014). Urology research publications: lessons learned from a developing country. *BMC Res Notes*, July 5;7:429. doi: 10.1186/1756-0500-7-429.

Hefny AF, Abu-Zidan FM. (2014). Comment on: "Marek et al. CT scan-detected pneumoperitoneum:

an unreliable predictor of intra-abdominal injury in blunt trauma. *Injury*, 45(11):1800.

Jawas A, Hefny AF, Abbas AK, Abu-Zidan FM. (2014). Vascular surgery research in the Gulf Cooperation Council countries. *Asian J Surg*, 37(2):100-5.

Mohammad A, Hefny AF, Abu-Zidan FM. (2014). Focused Assessment Sonography for Trauma (FAST) training: a systematic review. *World J Surg*, 38(5):1009-18.

Osman OT, Abbas AK, Eid HO, Salem MO, Abu-Zidan FM. (2014). Interpersonal violence in the United Arab Emirates. *Int J Inj Contr Saf Promot*, 21(3):260-5.

Safi F, Bekdache O, Al-Salam S, Alashari M, Mazen T. (2014). Giant condyloma acuminatum of Buschke-Lowenstein tumour: Disease development between 2000 and 2010, *Surgical Practice*, 86, 27-36.

Published Abstracts, Letters and Correspondence

Abu-Zidan FM. (2014). Minimizing missed war injuries. 15th European Congress of Trauma and Emergency Surgery and Second World Trauma Congress, Frankfurt, Germany, May 2014 (oral presentation).

Hammad FT, Bakoush O, Lubbad L. (2014). Does diabetes mellitus affect the recovery of renal dysfunction following reversible unilateral ureteral Obstruction? *Journal of Urology Supplement*, vol. 191, Issue 4, p: e273-e274 April 2014.

Hefny AF, Eid HO, Abu-Zidan FM. (2014). Pedestrian injuries in the United Arab Emirates. 15th European Congress of Trauma and Emergency Surgery and Second World Trauma Congress, Frankfurt, Germany, May, 2014 (Poster).

Mohammad A, Hefny AF, Abu-Zidan FM. (2014). Focused Assessment Sonography for Trauma (FAST) Training: A Systematic Review. 15th European Congress of Trauma and Emergency Surgery and Second World Trauma Congress, Frankfurt, Germany, May 2014 (oral presentation).

Safi F. (2014). Neoadjuvant therapy in pancreas cancer from Surgical Point of view. *Emirates Oncology Conference* November 2014, Abu Dhabi, UAE.

Conference Invited Lectures and Presentations

Abu Zidan FM. (2014). Global Vision for the Improvement of Trauma Management (Key note lecture). 3rd Global Emergency Medicine Conference, Mohammad Bin Rashid Academic Medical Center, UAE.

Abu-Zidan FM. (2014). Blast injuries. *Advanced Disaster Medical Response Course*, November, Kuching, Sarawak, Malaysia.

Abu-Zidan FM. (2014). Data analysis. "Establishing a Trauma Registry" Workshop. 10th Middle East Trauma Conference, Dubai, UAE.

Abu-Zidan FM. (2014). Global vision in the management of multiple trauma patients. 10th Middle East Trauma Conference, Dubai, UAE.

Abu-Zidan FM. (2014). Innovations in Trauma Systems in UAE. *International Congress on Innovations in Global Trauma Care 2014*, Belo Horizonte, Brazil.

Abu-Zidan FM. (2014). Biomechanism of Blast Injuries. *International Conference Major Incident and Disaster Management*, Kuching, Sarawak, Malaysia.

Abu-Zidan FM. (2014). Educational and Clinical Impact of

Advanced Trauma Life Support (ATLS) Courses: A Systematic Review. *First UAE Clinical Simulation Conference 2014*, Mohammad Bin Rashid Academic Medical Center, Dubai, UAE.

Abu-Zidan FM. (2014). Educational and Clinical Impact of Advanced Trauma Life Support (ATLS) Courses: A Systematic Review. *3rd Global Emergency Medicine Conference*, Mohammad Bin Rashid Academic Medical Center, Dubai, UAE.

Abu-Zidan FM. (2014). Extremity injuries. *Advanced Disaster Medical Response Course*, Kuching, Sarawak, Malaysia.

Abu-Zidan FM. (2014). Point of Care Ultrasound Training: An Experience from UAE. *First UAE Clinical Simulation Conference 2014*, Mohammad Bin Rashid Academic Medical Center, Dubai, UAE.

Abu-Zidan FM. (2014). Predicting injury severity in multiple trauma patients: A challenging task. *3rd Global Emergency Medicine Conference*, Mohammad Bin Rashid Academic Medical Center. Dubai, UAE.

Abu-Zidan FM. (2014). Prehospital ultrasound in Disasters. *International Conference Major Incident and Disaster Management*, Kuching, Sarawak, Malaysia.

Abu-Zidan FM. (2014). Promoting trauma research in United Arab Emirates: Lessons learned. *First International Road Traffic Accidents Conference: Causes, Challenges and Countermeasures (3Cs)*, Abu Dhabi, UAE.

Abu-Zidan FM. (2014). Social Media and Disasters. *International Conference Major Incident and Disaster Management*, Kuching, Sarawak, Malaysia.

Abu-Zidan FM. (2014). The RUSH protocol in shock. *3rd Global Emergency Medicine Conference*, Mohammad Bin Rashid Academic Medical Center, Dubai, UAE.

- Abu-Zidan FM. (2014). The RUSH protocol in shock. 10th Middle East Trauma Conference, Dubai, UAE.
- Abu-Zidan FM. (2014). Trauma Registries: An essential part of trauma systems. "Establishing a Trauma Registry" Workshop. 10th Middle East Trauma Conference, Dubai, UAE.
- Abu-Zidan FM. (2014). Trauma research in UAE: Lessons learned. 3rd Global Emergency Medicine Conference, Mohammad Bin Rashid Academic Medical Center, Dubai, UAE.
- Abu-Zidan FM. (2014). War, The Man-Made Disaster: What It Taught Us. International Conference Major Incident and Disaster Management, November, Kuching, Sarawak, Malaysia.
- Branicki F, Abu-Zidan FM, Shafi M, Jamal J, Gautam S. (2014). Approach to polytrauma in 2014. International Emergency and Catastrophe Management Conference. Dubai, UAE.
- Branicki F, Eid HO, Hefny AF, Bashir MO Abu-Zidan FM. (2014). Camel-related injuries. 10th Middle East Trauma Conference. Dubai, UAE.
- Branicki FJ. (2014). Emergency Surgery: requirements for efficient delivery. Efficiency in Surgical Operating Theatre Management, Hospital Build and Infrastructure Middle East: Exhibition and Congress, Dubai, UAE.
- Branicki FJ. (2014). Management of Early Complications of Gastroduodenal Surgery. Mongolian-American Joint Medical Symposium – 2014. National Cancer Center and Mongolian University of Medical Sciences. Ulaanbaatar, Mongolia.
- Branicki FJ. (2014). Management of Esophageal Cancer. Mongolian-American Joint Medical Symposium – 2014. National Cancer Center and Mongolian University of Medical Sciences. Ulaanbaatar, Mongolia.
- Branicki FJ. (2014). Surgery for Gastric Cancer. Mongolian-American Joint Medical Symposium – 2014. National Cancer Center and Mongolian National University of Medical Sciences. Ulaanbattar, Mongolia.
- Branicki FJ. (2014). The Role of Gastric Surgery in Advanced/Metastatic Gastric Cancer. Mongolian-American Joint Medical Symposium – 2014. National Cancer Center and Mongolian University of Medical Sciences. Ulaanbattar, Mongolia.
- Branicki FJ. Gastric Surgery in 2014. 3rd Emirates Oncology conference and 14th Pan Arab Cancer Congress. Abu Dhabi, UAE.
- Branicki F.J. Subspecialty surgical practice: a case for risk reduction. 1st Al Ain Hospital Mortality and Morbidity Conference. Al Ain, UAE.
- Eid HO, Abu Zidan FM. (2014). How to establish a trauma registry: Practical advice. "Establishing a Trauma Registry" Workshop. 10th Middle East Trauma Conference, Dubai, UAE.
- Eid HO, Abu Zidan FM. (2014). Trauma Severity Scores. "Establishing a Trauma Registry" Workshop. 10th Middle East Trauma Conference, Dubai, UAE.
- Hammad FT, Bakoush O, Lubbad L. (2014). Does diabetes mellitus affect the recovery of renal dysfunction following reversible unilateral ureteral Obstruction? American Urological Association Annual Meeting, Orlando, USA.
- Hammad FT. (2014). Case Discussion and Questions in Uro-Oncology, 3rd Emirates international Urological Conference and the 1st Societe Internationale D'urologie Regional Conference in collaboration with the European Association of Urology and the Arab Association of Urology, Dubai, UAE.
- Hammad FT. (2014). Catheter Associated Infections; 2nd Surgical Workshop, Al Noor Hospital, Al Ain, UAE.
- Hammad FT. (2014). Electrical propagation in the renal pelvis, ureter and bladder; The Joint Meeting of the Federation of European Physiological Societies-FEPS and the Hungarian Physiological Society, Budapest, Hungary.
- Hammad FT. (2014). Laparoscopy for Upper Urinary Tract Diseases; The 5th conference and workshop of Emirates Society of Laparo-Endoscopic Surgeon, Al Ain, UAE.
- Hammad FT. (2014). The pathophysiology of upper urinary tract obstruction; 4th Emirates Urological Society Expert Forum/ Endoscopic
- Safi. F. (2014). Neoadjuvant therapy in pancreas cancer from Surgical Point of view. Emirates Oncology Conference November 2014, Abu Dhabi, UAE.
- Torab FC. (2014). Approach to blunt abdominal trauma. 1st International Conference on Trauma and Emergency Medicine. Dubai, UAE.
- Torab FC. (2014). Establishment of bariatric surgery service in UAE: History, outcome and prospect. 9th International Congress of the Association of Minimal Access Surgeons of India (Amasicon 2014). Dubai, UAE.
- Torab FC. (2014). Gastric band to sleeve: when and how? Master-class Sleeve Gastrectomy, Gulf Obesity and Metabolic Surgery Society Meeting. Dubai, UAE.
- Torab FC. (2014). GIST are feasible for laparoscopic surgery. Emirates Society of Laparo-endoscopic Surgeons. Dubai, UAE.
- Torab FC. (2014). Interactive Panel Discussion: Revision surgery following failed Gastric Band, Sleeve, and RYGB. 13th Middle East Surgery Conference, Dubai, UAE.
- Torab F.C. (2014). Stenosis after sleeve gastrectomy: an underestimated problem to be solved.

11th International Congress and Workshop of the Egyptian Society of Laparoscopic Surgery (ESLS). Hurghada, Egypt.

Torab F.C. (2014). Weight Regain after gastric bypass: causes and management 11th International Congress and Workshop of the Egyptian Society of Laparoscopy Surgery (ESLS) Hurghada, Egypt.

Torab FC. (2014). Panel discussion: selection of procedure and management of complications in bariatric surgery. 9th International Congress of the Association of Minimal Access Surgeons of India (Amasicon 2014). Dubai, UAE.

Torab FC. (2014). Passage obstruction after gastric sleeve: causes and management. IFSO 2014, 19th World Congress of Interna-

tional Federation for Surgery of Obesity & Metabolic Disorders. Montreal, Canada. : 370

Torab FC. (2014). Weight regain after Gastric bypass. IFSO 2014, 19th World Congress of International Federation for Surgery of Obesity & Metabolic Disorders. Montreal, Canada. : 528.

Prof FT Hammad (PI), Mr L Lubbad
The effect of Alda-1 on the kidney functions following renal ischemia-reperfusion injury in the rat

Sheikh Hamdan Award for Medical Sciences

Dr FC Torab (PI)
Vitamin Supplementation Post Bariatric Surgery: A Randomised Controlled Trial of Sleeve Gastrectomy.

RESEARCH GRANTS

CMHS Research Grant

Dr M Grivna (PI), Prof FM Abu-Zidan, et al
Prevention of pediatric home-related injuries: A randomized controlled trial. [2014-2015].

2014 Surgery



*Standing left to right:
Mr Cherukunnummal Aboobacker,
Prof Fikri Abu-Zidan, Prof Fayez
Hammad, Dr. Saeed Al Thani,
Dr. Ali Jawas, Dr Fawaz Torab*

*Seated left to right:
Dr. Zuhair Al Fardan, Dr. Tahra
AlMahmoud, Prof Frank Branicki*

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Research Priority Groups

Diabetes and Cardiovascular

Genetics and Development

Immunology and Immunoregulation

Neurosciences

Oncology

Trauma

Diabetes and Cardiovascular Research Priority Group

Introduction

The Diabetes and Cardiovascular Research Priority Group (DCRG) was established in the autumn of 2001 alongside other research priority groups. The DCRG works closely with the Al Ain Diabetes Research Group, Emirates Diabetes Society and the Emirates Endocrine Society.

Aims of the Group

- Facilitate diabetes and cardiovascular research in the College of Medicine and Health Sciences and the UAEU at large.
- Enhance basic and clinical research capabilities of established diabetes investigators.
- Act as a channel for research funding.
- Act as a resource for new faculty members and for those who may want to start research in diabetes/cardiovascular diseases.
- Present scientific research at national and international scientific conferences
- Publish scientific research in national and international scientific journals.
- Cooperate and liaise with any local, national or international agency with similar research interests.
- Train post-doctoral, doctoral, masters and bachelors degree students.
- Act as a resource unit on diabetes mellitus and cardiovascular diseases.

Activities

19th Annual Workshop on Diabetes Mellitus and Endocrine disorders

The DCRG organized a one-day Conference on "Diabetes Mellitus and Endocrine Disorders" on Saturday, 5th of April 2014 at the College of Medicine & Health Sciences, United Arab Emirates University. The Conference attracted more than 350 delegates from across the UAE and abroad. In addition to the local delegates, we had speakers from abroad including, Dr. Ebaa Al-Ozairi, Assistant Professor and Consultant Endocrinologist, Faculty of Medicine, Kuwait University, Kuwait.

The Symposium covered different areas of diabetes including:

Core members:

Dr. Juma Al Kaabi (Chair)

Prof. Abdu Adem

Prof. Chris Howarth

Dr. Syed Mehboob Ali Shah

Prof. Thomas Adrian

Prof. M Agarwal

Dr. Fatma Al Maskari

Prof. El-Sadig Kazzam

Prof. Farouk Safi

Dr. Rajesh Mohanraj

Prof. Ernest Adeghate

In addition to the core members, group membership includes more than 45 other faculty members from within the CMHS.

- Overview of the management of Type 2 diabetes by Prof. Hussein Saadi, Consultant Endocrinologist, Chief of the Department of Medicine, Cleveland Clinic, Abu Dhabi.
- Overview of the Management of Obesity by Dr Ebba Al Ozairi, Assistant Professor at Kuwait University and Consultant in Diabetes and Endocrinology
- Thyroid disorders and pregnancy by Dr. Ali Khalil, Consultant Endocrinologist, Imperial College Diabetes Centre, Abu Dhabi
- Diabetes in pregnancy by Dr. Bachar Afandi, Consultant Endocrinologist, Tawam Hospital, Al Ain
- Overview of the diabetic foot by Dr. Juma Al Kaabi, Associate Professor of Medicine & Consultant Endocrinologist, CMHS, Al Ain

Workshops on the use of insulin pumps were also conducted to familiarize nursing staff with this new technology.

Themes of research conducted by the group include the following:

- Neuropeptides and neurotransmitters in diabetes mellitus
- Trace elements in diabetes mellitus
- Immunology of diabetes mellitus
- Clinical pharmacology of diabetes mellitus
- Insulin and glucagon secretion in health and disease
- Effects of diabetes mellitus on cardiac muscle function
- Epidemiology of diabetes mellitus
- Diabetic complications (nephropathy, neuropathy and angiopathy)
- Lipids in human and experimental diabetes
- Metabolic syndrome and obesity
- Pancreas transplantation
- Hypertension
- Gestational diabetes

Grants obtained by members

- Exploring the Influence of expatriate domestic Workers on the physical, emotional and behavioural well-being of Emirati children- Federal Demographic Council
- The effect of betatrophin on the metabolic parameters of diabetic rats. UAEU Grant
- Effects of exercise training on heart function in the Goto-Kakizaki type 2 diabetic rat".-UAE University Interdisciplinary Grant.
- Alterations in calcium signalling and

cardiac muscle proteins underlie contractile dysfunction in Zucker diabetic fatty rat heart". CMHS Project Grant

- Remodeling of Ca²⁺ transport proteins underlies cardiac muscle dysfunction in the Zucker diabetic fatty rat Sheikh Hamdan Bin Rashid Al Makhtoum Award for Medical Sciences Grant
- Localization of apolipoprotein A-1 and its effect in the pancreas of a rodent model of type 2 diabetes- CMHS Research Grant
- The Role of TNF- α in experimental autoimmune neuritis: a model of inflammatory demyelinating polyneuropathy- CMHS Research Grant
- Effect of ghrelin on the metabolic parameters of diabetic rats
- Search for Novel Anti-diabetic drug candidates Emirates Foundation Grant
- Several UPAR and NRF Grants were also awarded

Collaboration with local and international institutions

Local

Al Ain Diabetes Research Group
Emirates Diabetes Society (Emirates Medical Association)
Tawam and Jimi Hospitals, Al Ain, UAE
Neuroscience Research Group, FMHS, UAEU
Faculty of Science, UAEU
Faculty of Engineering, UAEU

International

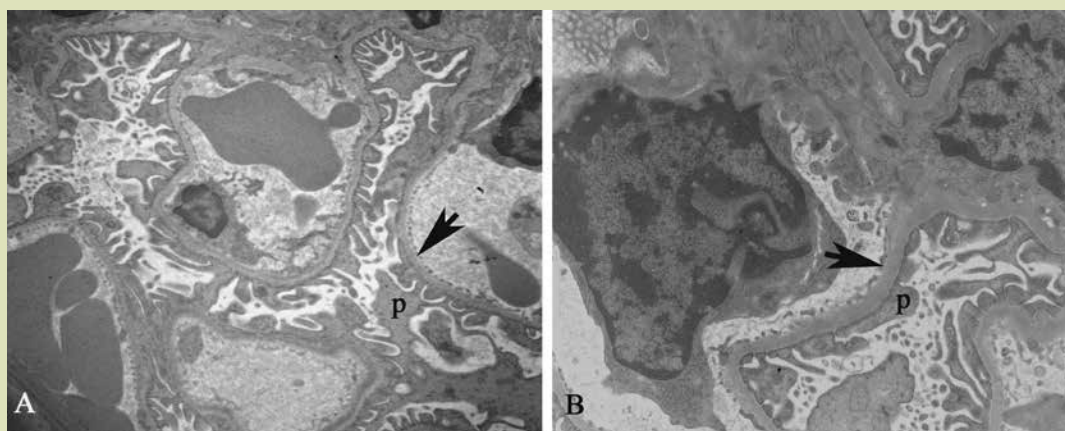
University of Manchester, UK
James Cook University, Queensland, Australia
University of Bristol, UK
University of Leeds, UK
University of Central Lancashire, UK
Karolinska Institut, Sweden
Semmelweis University, Hungary
University of Pecs, Hungary
University of Nebraska Medical Centre, Omaha, USA

Publications

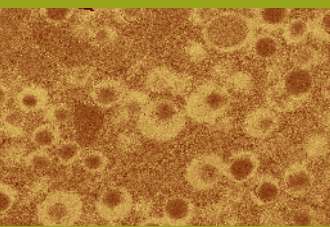
Members of the DCRG published more than 24 diabetes-related papers in top quality peer-reviewed journals including but not limited to Heart Failure Reviews, Medicinal Chemistry, Cell & Tissue Research, Journal of Endocrinology, Open Medicinal Chemistry Journal, Molecular and Cellular Biochemistry, Experimental

Physiology, PLoS One, Journal of Obstetrics and Gynecologic. The cumulative impact factor of these journals exceeded 36 (See Departments of Anatomy, Biochemistry, Community

Medicine, Pathology, Pharmacology, Physiology, Psychiatry, Internal Medicine and Medical Microbiology for relevant publications).



Electron micrographs showing the glomerulus of normal (A) and diabetic (B) rats, 4 months after the onset of diabetes mellitus. Note that the basement membrane (arrow) of the glomerular capillaries of diabetic rats is thicker than that of control. The foot processes of podocytes (p) are fewer in the glomerulus of diabetic rats when compared to that of normal. Magnification: X7000.



Genetics and Development Research Group

Mission of the Group

Consanguineous marriages are prevalent in the UAE population and therefore recessively inherited single gene disorders occur more frequently in the UAE than in other populations with over 200 recessive disorders having been reported so far. In addition, the incidence of multifactorial diseases such as type 2 diabetes, obesity, hypertension, certain cancers, neurodegenerative and cardiovascular diseases has been steadily rising in the UAE over the past few decades. This is mainly due to rapid socioeconomic growth and a significant rise in life expectancy as a result of improved health care systems. The rapid increase in the prevalence of multifactorial diseases also suggests genetic predisposition to those diseases revealed by rapid changes in lifestyle including diet. The mission of the Genetics and Development Research Priority Group is to provide the highest quality research into the basis of genetic diseases prevalent in the UAE and high quality health care and education. In support of its mission, the group strives to (1) define the extent of genetic, developmental and multifactorial disorders in the country; (2) be the leading source of research into the causes and pathogenesis of these disorders and (3) seek new approaches to diagnosis, treatment and prevention of such disorders. Our mission is also to educate the next generation of health care leaders by providing continuing professional development to physicians with up-to-date courses and to educate the public by providing information on different genetic disorders and approaches to prevention.

Research Interests of Members of the Group

Principal investigators of the Genetics and Development Research Priority Group are affiliated to different departments within the College of Medicine and Health Sciences. The current membership of the group includes:

Prof. Bassam R. Ali (Pathology Department); Professor of Molecular Genetics and Leader of the Genetics and Development Research Group

Research interests: 1) Elucidation of the molecular and cellular defects underlying genetic disorders in the UAE and Arab populations; 2) Exploring novel therapeutic targets for genetic disorders and 3) Defining alleles and genotypes of genes underlying drug metabolism among Emiratis.

Prof. Yousef M. Abdulrazzaq (Paediatrics Department); Professor Emeritus.
Research interests: Neonatology, birth defects, metabolic disorders and asthma.

Prof. Thomas E. Adrian (Physiology Department); Professor.
Research interests: 1) Identification of diabetes susceptibility genes in UAE nationals; 2) Identification of genes involved in skeletal muscle cancer cachexia; 3) Characterization of novel genes involved with cancer growth and invasion

Prof. Lihadh Al-Gazali (Paediatrics Department); Professor of Clinical Genetics and Senior Consultant in Clinical Genetics.
Research interests: Delineation of the clinical and molecular aspects of congenital malformations in the UAE.

Dr. Fatima Al-Jasmi, (Paediatrics Department) Associate Professor.

Research interest: Clinical, molecular and therapeutic aspects of inborn errors of metabolism.

Dr. Ahmad Hassan Al-Marzouqi (Biochemistry Department); Associate Professor and the Director of Research and Sponsored Projects at the Office of the Deputy Vice Chancellor for Research and Graduate Studies
Research interest: Protein Complexes that Modify Chromatin for Transcription Regulation

Dr. Suhail Al-Salam (Pathology Department); Associate Professor

Research interests: Molecular pathology of cancers and cardiovascular conditions in UAE

Dr. Samir Attoub (Pharmacology and Therapeutics Department); Associate Professor
Research interest: Cellular signaling in cancers.

Prof. Keith Bagnall (Anatomy Department); Professor.
Research Interest: The aetiology of adolescent idiopathic scoliosis

Prof. Salim Bastaki (Pharmacology and Therapeutics Department); Professor.
Research interests: 1) Oxidative phenotyping and genotyping UAE nationals using antidepressant drugs 2) Teratogenic effects of antiepileptic drugs

Dr. Srdjan Denic (Internal Medicine Department); Associate Professor.
Research interests: (1) Effect of human inbreeding on selection of alpha-thalassemia (2) The genetics of neutropenia

Prof. Omar M. El-Agnaf (Biochemistry Department); Professor.

Research interest: The role of protein misfolding and aggregation in neurodegenerative diseases

Dr. Eyad Elkord Medical Microbiology and Immunology Department); Assistant Professor.
Research interest: Cancer Immunology and Immunotherapy with special interest in the role and function of immunosuppressive cells (T regulatory cells and myeloid-derived suppressor cells) in cancer.

Dr. Starling Emerald (Anatomy Department); Assistant Professor

Research interest: Epigenetics in metabolic syndrome and obesity

Prof. Sehamuddin Galadari (Biochemistry Department); Professor of Biochemistry and Molecular Cell Biology, Advisor to the DVC for Academic Affairs

Research interest: Cellular signaling and human disease

Prof. Ruth Langer (Radiology Department); Professor and Chair

Research interest: Imaging of patients with congenital syndromes and malformations

Dr. Hisham Mirghani (Obs/Gyne Department); Associate Professor and Chair

Research interest: Prenatal diagnosis and fetal medicine

Prof. Hassib Narchi (Paediatrics Department); Professor

Research interests: Causes and mechanisms of common diseases in Middle Eastern populations

Prof. Tahir A. Rizvi (Medical Microbiology and Immunology Department); Professor.
Research interest: Retroviral/lentiviral vectors for human gene therapy.

Dr. Sami Shaban (Medical Education); Associate Professor

Research Interests: Biomedical informatics, health registries, e-learning, database-driven website design and relational databases

Prof. Abdul-Kader Souid (Paediatrics Department); Professor and Chair
Research Interests: 1) Analytical biochemistry; 2) Investigating effects of drugs and toxins on cellular bioenergetics and mitochondrial function

Dr. Jehan Suleiman (Paediatrics Department); Assistant Professor and Paediatric Neurologist
Research Interests: 1) Paediatric Encephalitis in the UAE; 2) Bone health and vitamin D levels in children on chronic use of antiepileptic drugs in UAE

Publications and Grants

Please refer to the list of publications and grants for individual members of the group in their respective departments.

Collaborations of the group members with UAE, regional and international organizations

Local collaborations

- Ministry of Health
- School Health Authorities
- Sheikh Hamdan Awards for Medical Sciences
- Center for Arab Genomic Studies
- Central Veterinary Research Laboratory

Regional collaborations

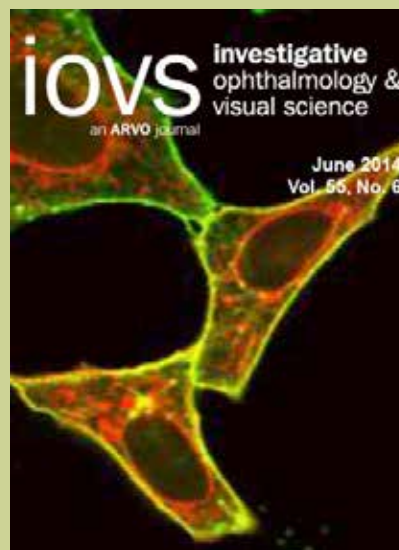
- Sultan Qaboos University, Muscat, Sultanate of Oman
- King Faisal Specialist Hospital and Research Center, Saudi Arabia
- Weill Cornell Medical College, Doha, Qatar

International collaborations

- International Clearing House for Birth Defect Monitoring System [member]
- Harvard University, USA
- University of California, San Diego
- Cambridge University, UK
- Birmingham University, UK
- University of Salford, UK
- University of Manchester, UK
- Imperial College London, UK
- University College London Medical School, UK
- National Human Genome Research Institute
- National Institute of Health, Bethesda, USA
- Institute of Human Genetics, Erlangen, Germany
- Mount Sinai School of Medicine, New York, USA
- Telethon Institute of Genetics and Medicine Naples, Italy
- UT Southwestern Medical Center at Dallas, USA
- Institute für Medizinische Genetik, Berlin, Germany
- Cincinnati Children's Hospital, OH, USA
- University of Ottawa, Canada
- Medical University of South Carolina, Charleston, South Carolina

PhD Program

Several members of the group are involved in postgraduate studies teaching and students' supervision. Prospective PhD and MSc students are encouraged to contact the above research group leaders in advance. Some PhD scholarships and fellowships are available to prospective students.



Confocal microscopy images generated at the CMHS Imaging Unit have been selected as the cover page for the June 2014 issue of the prestigious journal "Investigative Ophthalmology and Visual Science" [Milhem RM, Ben-Salem SM, Al-Gazali LI & Ali BR (2014) Identification of the cellular mechanisms that modulate trafficking of Frizzled Family Receptor 4 (FZD4) missense mutants associated with FEVR. Investigative Ophthalmology and Visual Science, 55:3423-3431].

The Immunoregulation and Infection Research Priority Group

The major aim of the Immunoregulation and Infection Research Priority Group is to promote basic and clinical research in the fields of immunology, microbiology, and related disciplines. Through its wide membership encompassing investigators from a diverse number of departments in the College of Medicine and Health Sciences and affiliated hospitals, the Group aims to facilitate interdepartmental collaborations in basic and clinical research related to immunological disorders, infectious diseases, and microbial pathogens.

The group also undertakes sponsorship of international and regional visitors and speakers to CMHS and periodically becomes responsible for organizing international medical scientific conferences. In 2014 the group hosted the following research seminars:

5 February, 2014 **"Interplay of the Cytokines, IFN- γ and IL-17 in Experimental Diabetes"** by **Professor Eric Mensah-Brown**, Department of Anatomy, CMHS, UAEU.

18 March, 2014 **"Middle East respiratory syndrome coronavirus - The story from the UAE"** by **Dr. Stefan Weber**, consultant microbiologist, Head of Serology and Molecular Diagnostic Service, Sheikh Khalifa Medical City, Abu Dhabi.

22 April, 2014 **"Immunotherapy of Cancer"** by **Dr. Eyad Elkord**, Department of Medical Microbiology and Immunology, CMHS, UAEU.

17 June, 2014 **"Viral Etiology of Human Breast Cancer"** by **Dr. Farah Mustafa**, Department of Biochemistry, CMHS, UAEU.

15 September, 2014 **"Tropical Medicine and Parasitology on the Arabian Peninsula"** by Prof. Eskild Petersen, Professor in Tropical Medicine and Parasitology, Institute of Clinical Medicine, Faculty of Health Sciences, Aarhus University, Denmark.

27 October, 2014 **"Neuro-immune interactions in the control of experimental diabetes"** by **Dr. Maria Cabezudo**, Department of Biochemistry, CMHS, UAEU.

All the above events were well attended not only by the faculty

Group Leader:

Dr. Agnes Sonnevend

Core Members:

Professor Basel al-Ramadi

Professor Eric Mensah-Brown

Professor Tahir Rizvi

Professor Tibor Pal

DR. Adri Prinsloo

Dr. Ahmed Al Qahtani

Dr. Ahmed Deemas al Suwaidi

Dr. Eyad Elkord

Dr. Farah Mustafa

Dr. Fawaz Torab

Dr. Gulfaraz Khan

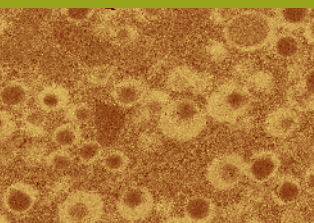
Dr. Maria Cabezudo

Dr. Maryam Al-Shamsi

Dr. Mohammed al Houqani

Dr. Suhail A Al-Salam

Dr. Suleiman Al Hammadi



members but also by postdoctoral trainees, graduate students, undergraduate medical students and research assistants.

Original publications by IIRPG members:

Altogether, members of the group published 31 PubMed listed publications in 2014. A detailed list of publications of each IIRPG member can be found under their respective CMHS departments (refer to departmental reports as below):

Department of Microbiology and Immunology

Professor Basel al-Ramadi
Professor Tahir Rizvi
Professor Tibor Pal
Dr. Agnes Sonnevend
Dr. Ahmed Al Qahtani
Dr. Eyad Elkord
Dr. Gulfaraz Khan
Dr. Maryam Al-Shamsi

Department of Biochemistry

Dr. Maria Cabezudo
Dr. Farah Mustafa

Department of Anatomy

Professor Eric Mensah-Brown

Department of Pathology

Dr. Suhail A Al-Salam

Department of Pediatrics

Dr. Suleiman Al Hammadi
Dr. Ahmed Deemas al Suwaidi

Department of Internal Medicine

Dr. Mohammed Al Houqani

Department of Family Medicine

Dr. Adri Prinsloo

Neuroscience Research Group

Neuroscience Research Priority Group for 2014

The UAE University Neuroscience Group was officially formed in 2006 by a Decree from the Vice Chancellor of the UAE University.

The group consists of basic scientists and clinicians with a common interest in the nervous system. The primary goal of the group is to strengthen collaborative research ties between its members and promote neuroscience research in the UAE and the region. The group develops educational programs at the UAE University that lead to higher degrees in Neuroscience, organizes seminars, congresses and workshops, and participates in scientific activities of other groups in the field of neuroscience. Moreover, the group develops educational programs, provides professional development activities, information and educational resources for neuroscientists at all stages of their careers in the UAE and the region.

Major Achievements for 2014

In the year 2014, the members of the group have presented several abstracts in national and international meetings and a number of publications have resulted from their research activities. Several members of the group have received major research grants from local and international bodies including Michael J. Fox Foundation for Parkinson Disease Research, USA, Shaikh Hamdan Award for Medical Sciences, Emirates Foundation, and several CMHS & UAE University Research Grants.

Scientific Collaboration

Several members of the group hold membership in prestigious organizations and serve on the editorial board of international journals and committees. Also the group members collaborate with a number of research groups, institutions and organizations within the UAE & abroad.

UAE:

Al Ain Hospital, Al Ain
Central Veterinary Research Laboratory, Dubai
Centre for Arab Genomic Study, Dubai
College of Science, UAEU
Hamdan Award for Medical Sciences, Dubai
Tawam Hospital, Al Ain
Zayed University, Dubai

Group Leader

Professor Omar El-Agnaf
(Biochemistry Department)

Core Members

Prof. Milos Ljubisavljevic
(Physiology Department)
Dr. Murat Oz
(Pharmacology Department)
Dr. Ossama Osman
(Psychiatry Department)

Members:

Prof. Abdu Adem
Prof. Safa Shehab
Prof. Eric Mensah-Brown
Prof. Ernest Adeghate
Dr. Fadwa El-Mughairibi
Dr. Fatima Aljasmi
Dr. Maria Cabezudo
Prof. Basel Al Ramadi
Dr. Gururaj Aithala
Prof. Lihadh Al-Gazali
Prof. Chris Howarth
Prof. Salim Bastaki
Dr. Juman Kubba
Dr. Ahmed Al Marzouqi
Dr. Klaus van Gorkom
Prof. Hamdy Moselhy
Prof. Johann Braun
Dr. Leena Amiri
Dr. Kanita Dervic
Prof. Sehamdduin Galadari
Prof. Bassam Ali
Dr. Suhail Al Salam
Dr. Bassem Shaban Sadek
Dr. Md Emdadul Haque
Dr Fakhreya Yousuf Hussain
Mohammad

Abroad:

Lund University Medical School, Sweden
 Boston College, MA, USA
 Bogomeletz Institute, Ukraine
 Conway Institute, Dublin, Ireland
 Columbia University, NY, USA
 Chapman University, USA
 Chinese University of Hong Kong, China
 Center of Molecular Neurobiology, University of
 Hamburg, Germany
 Harvard Medical School, USA
 Imperial College, London
 Institut Pasteur de Lille, Cedex, France
 Institutes for Medical Research and Neurology,
 Belgrade, Yugoslavia
 Iowa Medical School, USA
 James Cook University, Queensland, Australia
 Janssen Research Foundation, Belgium
 Lancaster University, UK
 Kyoto Prefectural University of Medicine, Kyoto,
 Japan
 Laboratory of Neurogenetics, National Institute
 on Aging, Maryland, USA
 Mayo Clinic, Florida, USA
 Manchester University, UK
 McMaster University, Canada
 National Institute of Health, USA
 Royal Free & University College London Medical
 School, UK
 SGHMS, University of London, UK
 Sultan Qaboos University, Muscat, Oman
 The Karolinska Institute, Sweden
 The Queen's University of Belfast, UK
 University of Manchester, UK
 University of Aarhus, Denmark
 Università La Sapienza, Rome
 University of Aalborg, Denmark
 University of Amsterdam, Netherlands
 University of Bonn, Germany
 University of California and San Diego, USA
 University of Gevle, Sweden
 University of Glasgow
 University of Groningen, Netherlands
 University of Turin, Italy
 University of Xi'an, China
 Utrecht Medical Centre, Netherlands

Summary of Grants & Publications 2014 (refer to departmental reports as below):

Shehab S (Anatomy).
 Adeghate E (Anatomy).
 Mensah-Brown E (Anatomy).
 El-Agnaf O (Biochemistry).
 Galadari S (Biochemistry).
 Haque E (Biochemistry).
 Al-Gazali L (Paediatrics).
 Adem A (Pharmacology).
 Bastaki S (Pharmacology).
 Murat Oz (Pharmacology).
 Sadek B (Pharmacology).
 Mohammad F (Pharmacology).
 Ljubisavljevic M (Physiology).
 Osman O (Psychiatry).
 Moselhy H (Psychiatry).
 Gorkom van K (Radiology).
 Al Salam S (Pathology).
 Haque M (Biochemistry).
 Mohammad F (Pharmacology).
 Ali B (Pathology).

Oncology Research Group

Introduction

The Oncology Research Group (ORG) comprises colleagues at the College of Medicine & Health Sciences, the College of Sciences; UAEU and the Abu Dhabi Health Authority, who share an interest in oncology research.

The Chair of this group is Dr. Suhail Al-Salam, the Vice-Chair is Prof. Frank Branicki, the Secretary is Prof. Farouk Safi and Treasurer is Dr Farah Mustafa. Dr. Mohammed Jaloudi, Chair of Oncology at Tawam Hospital is the Deputy Chair.

Objectives

- To promote cancer research – being a catalyst for research activity
- To create a forum for collaboration between Faculty members, basic scientists and colleagues in clinical disciplines, Faculty staff and colleagues of the Abu Dhabi Health Authority dealing with oncology.
- To create and maintain an inventory of
 - research activities
 - resources available
 - basic research expertise
 - available clinical services
 - specialty interests – subspecialties
 - individuals – registry of interest in Oncology
- To act as a reference group regarding cancer research and funding
- To act as an advisory body to the Abu Dhabi Health Authority regarding cancer issues of national interest, e.g. breast cancer screening, cervical screening, risk factors
- To create a unified list of all cancer-related educational activities countrywide
- To act as an advisory body for education regarding cancer, organizing lectures on cancer, cancer conferences and meetings at a local and national level
- To promote quality control in the management of patients with cancer

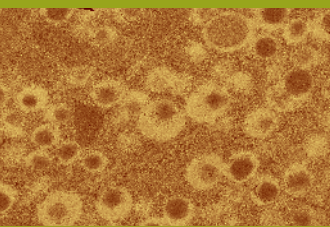
Research Activities

During 2014, members of the ORG received a total of 42 research grants. In 2014, members of the ORG published 52 papers in international peer-reviewed journals.

Other Activities

Members of the group present their work at many local and international conferences.

Some ORG members participated in Terry Fox “runs” which are arranged in different parts of the UAE.



Trauma Research Group

Core Members:

Faculty of Medicine and Health Sciences

Asst Prof Ali Jawas
Professor Fikri Abu-Zidan
Professor Frank Branicki
Professor Fayez Hammad
Professor Elsadig Kazzam
Assoc Prof Michael Grivna
Assoc Prof Sami Shaban
Assoc Prof Fawaz Torab
Asst Prof Mohd Al Houqani
Dr Mohamed Sadig

Al Rahba Hospital, Abu Dhabi

Dr Masoud Bashir
Dr Ashraf Hefny

Tawam Hospital

Dr Abdel Norueldin
Dr Masoud ur Rahman

Al Ain Hospital

Dr Mohammad Kamal Idris

National Ambulance

Dr Hani Eid

Summary

During 2014 the Trauma Group has made major contributions in trauma education and research both nationally and internationally. The Advanced Trauma Life Support [ATLS] has actively continued. Between then the members of the Trauma Group published one book chapter and 9 papers related to trauma in international refereed journals and presented 31 abstracts and invited lectures at national and international meetings. Professor Abu-Zidan was invited as an International Judge for the International Major Incident Response Exercise (IMIREX) 2014, Kuching, Sarawak, Malaysia. Both Professor Fikri Abu-Zidan and Dr Ashraf Hefny were invited as international experts for writing clinical guidelines for using ultrasound on Trauma patients, February 2014, Belo Horizonte, Brazil.

Mission

Our mission is to promote and perform research and education of a high standard in the field of trauma so as to improve patient care.

Major achievements of the Trauma Group in 2014 included:

A) Road Traffic Collision Registry:

The data from this project are still generating useful information on road traffic collisions. The detailed information on more than 1000 patients involved in road traffic collisions was useful to develop a new model for detecting injury severity which was published in "Injury". A full time Senior Research Fellow, Dr Hani Eid continued using the data from this registry considering different aspects of trauma epidemiology and management including distraction-related road traffic collisions and evaluating the value of the New Injury Severity Score. This has increased the research activity of the Trauma Group for the year 2014.

B) Participation in trauma training courses

The Trauma Group was actively involved in the organization and conduct of numerous courses.

1) ATLS Provider and Instructor Courses: It was deemed essential to train UAE doctors using ATLS principles to improve the management of trauma patients. More than 2200 doctors have taken the Provider Course to date countrywide in UAE. We have been encouraged by the increasing support and popularity of ATLS in the UAE and the region. A greater awareness of the value of ATLS

for enhancement of the early management of severe trauma is more evident in our setting. 2) Point-of-Care Ultrasound training. We have noticed increasing support and popularity for "Point-of-Care" Ultrasound in clinical practice in our setting. Professor Abu-Zidan takes special interest in teaching medical students practical skills on performing the E-FAST for detection of intra-peritoneal, pleural fluid, peri-cardiac fluid, and pneumothorax. This will assure transfer of knowledge learned for the new generation. The Rapid Ultrasound in Shocked patients (RUSH) protocol is used routinely in our clinical practice.

C) Publications and Abstracts

In 2014, the group has published one book chapter and 9 papers related to trauma in international refereed journals. Both quality and quantity of research has improved. The group has presented 31 abstracts and oral presentations at national and international meetings in 2014. Details of these publications and presentations are to be found in the relevant Departmental Reports (Department of Surgery, and Department of Community Medicine).

D) International recognition

1. Professor Fikri Abu-Zidan and Dr Asharf Hefny were invited as international experts for writing clinical guidelines for using ultrasound in Trauma patients, International Congress on Innovations in Global Trauma Care, 2014, 19-23 February 2014, Belo Horizonte, Brazil (Fig 1).
2. Professor Abu-Zidan was invited to Sarawak, Malaysia December 2014, to participate as an International Judge, International Major Incident Response Exercise (IMIREX) 2014, 2-4th December 2014, Kuching, Sarawak, Malaysia (Fig2).

Research Grants

1. Grivna M [PI], Shah SM, Al Suwaidi A, Nagelkerke N, Al Marzouqi L, Vincenten J, Bharwani S, Sheek-Hussein M, Elbarazi I, Abu-Zidan FM. (2014-2015). Prevention of pediatric home-related injuries: A randomized controlled trial (UAEU Program for Advanced Research – UPAR). [199,020 AED].
2. Grivna M [PI], El-Sadeg M, Al Maskari F. (2014). Environmental risk factors for school-related traffic injuries in Al Ain, UAE – post-interventional study. (CMHS research grant). [54,000 AED].

Media Reports on Trauma Group activities

The Trauma Group research activities on camel behavior and bites has attracted Media attention.

UAE medical researchers say camels 'on heat' are dangerous. 7 days in Dubai, February 12, 2014
<https://7daysindubai.com/uae-medical-researchers-say-camels-heat-dangerous/>



Fig 1: Professor Fikri Abu-Zidan and Dr Asharf Hefny were invited as international experts for writing clinical guidelines for using ultrasound in Trauma patients, February 2014, Belo Horizonte, Brazil.



Fig 2: Professor Abu-Zidan was invited as an International Judge for the International Major Incident Response Exercise (IMIREX) 2014, Kuching, Sarawak, Malaysia

Medical Student Research

Medical Student Research

Research is becoming an increasingly important part of career development for medical students. The College of Medicine & Health Sciences (CMHS) provides a wide variety of opportunities for students to participate in research. Early in the curriculum students are told about the research interests of faculty and the special interest research groups. Planning and design of research projects, research ethics, research project funding and biostatistics are also introduced.

Opportunities for extracurricular research include laboratory attachments, summer research projects and the Dr Ali Mosawi Scholarship. Students are encouraged to join research laboratories and to shadow research activities. It is hoped that some of these attachments will lead to presentations at scientific conferences and publications in peer reviewed journals. The summer holidays are a good time for student research and more than 40 students were involved in research activities during the summer of 2014.

The Dr Ali Mosawi Scholarship program provides opportunities for undergraduate and post-graduate students to visit UK Research Laboratories and Health Organizations.

The 9th International Scientific Conference for Medical Students in the GCC Countries was held in Al Ain, December 26-30, 2014. The conference was attended by more than 1300 delegates from around 20 countries. Keynote speakers included Professor Adeeba Kamarlzaman (University of Malaysia), Professor Linda Samuelson (Michigan State University) and Dr Mohamed Al Olama (Rashid Hospital, Dubai). The program also included 36 oral and 147 poster presentations, 18 workshops, a Medical Exhibition and a variety of exciting social events (see photographs).

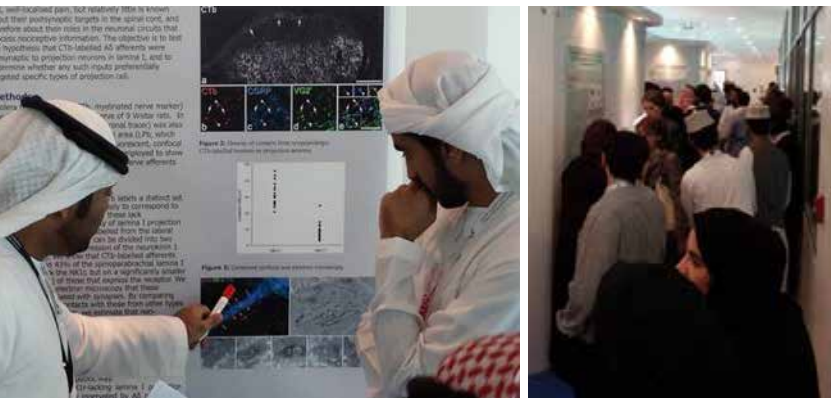
Prizes for Oral Presentations

First Prize

- Almutawea L, Al Kalbani M, Lakhtakia R, Burney I
Patterns of presentation and outcomes of germ cell tumors in women in Oman
Sultan Qaboos University, Oman
- Al-Habsi A, Alsaadoon M, Tony S
Quality of life among children with thalassemia in Oman (caregiver perception)
Sultan Qaboos University, Oman

Second Prize

- Aljoudi S, Haddawi Y, Alsomali F, Kutbi E, Meer E, Binsalman A
Lifestyle habits and their relation to measures of obesity amongst adults living in Jeddah–Saudi Arabia: A cross-sectional study
King Abdul-Aziz University, Saudi Arabia
- Al Dhaheri M, Mohamed YA, Fernandez-Cabezudo MJ, Al-Ramadi BK
Intravenous administration of Manuka Honey as adjuvant therapy in combination with chemotherapy inhibits tumor growth and improves host survival in colon carcinoma mouse model
United Arab Emirates University, United Arab Emirates



Community Medicine, Clinical and Basic Sciences

• Al Alem N, Al-Aklabi S, Sadee M, Al-Amer K, Khan M
The prevalence of diverticular disease in the National Guard Health Affairs, Riyadh, Saudi Arabia
King Saud Bin Abdulaziz University, Saudi Arabia

- Banjar L, Ghunaim A, Alshaikh H, Faruqui H, Alsamti M, Almalki A
Maternal outcomes of breast milk feeding in King Abdulaziz University Hospital, Saudi Arabia
King Abdulaziz University, Saudi Arabia

- Al Hemeiri A, Al Hammadi N, Yuvaraju P, Beegam S, Yasin J, Adeghate E, Ali BH, Nemmar A
Short-term pulmonary effects of nose-only water-pipe (shisha) smoking exposure in mice
United Arab Emirates University, United Arab Emirates

- Alabdulqader A, Alangari F, Niaz G, Chen L, Howison C, Pagel M
Measurement of tumor acidosis using chemical exchange saturation transfer MRI
Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia

- Al-Sweed A, Al-Sadhan M, Davamani F
Substrate zymography of snake venom components depicting the activity of matrix metalloprotease
Al Imam Mohammad Ibn Saud Islamic University, Saudi Arabia

- Al-Baloushi A, Baseer N, Watanabe M, Todd A, Shehab S
Selective contacts between non-peptidergic Aδ nociceptors and NK1 receptor-lacking Lamina I spinoparabrachial neurons in rats
United Arab Emirates University, United Arab Emirates

- Al-Hosani A, Al-Ali A, Nurulain S, Oz M
Carveol inhibits the function of human $\alpha 7$ -nicotinic acetylcholine receptors
United Arab Emirates University, United Arab Emirates

Impact Factor

Impact Factor

Journal Factor	Impact	Journal Factor	Impact
Nature	42.351	Oxid Med Cell Longev	3.979
Lancet	39.027	Cancer Immunol Immun	3.943
Neuron	15.982	J Neurol	3.841
Mol Cell	14.464	Curr Med Chem	3.715
Am J Resp Crit Care Med	11.986	J Affect Disorders	3.705
Hepatology	11.190	Invest Ophthalmol Vis Sci	3.661
Blood	9.775	Expert Opin Biol Th	3.653
Chem Commun (Camb)	6.718	Immunol Immunother	3.640
Hum Mol Genet	6.677	J Endocrinol	3.586
JBMR	6.589	Cell Physiol Biochem	3.550
AIDS	6.557	PLoS One	3.534
Int J Cardiol	6.175	Surv Ophthalmol	3.507
Pain	5.836	Alzheimers Res Ther	3.500
Movement Disord	5.634	Eur J Med Chem	3.432
Expert Opin Inv Drug	5.432	J Diabetes Metab	3.380
J Cereb Blood Flow Metab	5.339	Cell Tissue Res	3.333
Biochimica et Biophysica Acta (BBA) Mol Cell Res	5.297	Neuroscience	3.327
Neurobiol Dis	5.202	Am J Physiol Renal Physiol	3.300
Tob Control	5.150	Dev Med Child Neurol	3.292
Hum Mutat	5.122	Cell Proliferat	3.280
Arch Toxicol	5.078	Virology	3.278
Sci. Rep	5.078	Nutrients	3.148
Brit J Pharmacol	4.990	Paediatr Infect Dis J	3.135
Expert Opin Ther Tar	4.901	Scand J Public Healt	3.125
PLoS Comput Biol	4.829	Biochimie	3.123
Eur J Cancer	4.819	Expert Opin Pharmacol	3.085
Retrovirology	4.767	Sex Transm Infect	3.078
J Biol Chem	4.600	Neurotoxicology	3.054
Hum Genet	4.522	Physiol Behav	3.033
Bone	4.461	Drug Des Devel Ther	3.026
Rheumatology (Oxford),	4.435	J Immunol Res	2.934
Acta Physiol (Oxf)	4.251	J Mol Neurosci	2.922
Cell Calcium	4.210	Food Funct	2.907
Int J Nanomed	4.195	Exp Physiol	2.871
Brit J Dermatol	4.100	J Epidemiol	2.862
Heart Fail Rev	3.991	Front Aging Neurosci	2.843
		Comp Biochem Physiol Part D	2.823

Journal Factor	Impact	Journal Factor	Impact
Pharmacol Biochem Be	2.820	BMC Vet Res	1.743
J Neuroimmunol	2.786	Hum Hered	1.642
CNS Neurol Disord-DR	2.702	Int J Gynaecol Obstet	1.563
Eur J Pharmacol	2.680	Acta Cytol	1.562
Peptides	2.614	Toxicol Mech Methods	1.548
Food Chem Toxicol	2.610	J Clin Pharm Ther	1.533
Diabetes Res Clin Pr	2.536	BMC Nephrol	1.520
Microb Drug Res	2.524	Paed Neurol	1.504
J Chem Neuroanat	2.520	Asian Pacific J Cancer P	1.500
Mutat Res: Gen Tox En	2.481	Eur J Emerg Med	1.500
Injury	2.462	Physiol Res	1.487
BMC Med Genet	2.450	Public Health	1.475
World J Gastroenterol	2.433	Am J Drug Alcohol Ab	1.470
Metab Brain Dis	2.398	J Perinat Med	1.425
Mol Cell Biochem	2.388	Ther Clin Risk Manag	1.343
Angiology	2.370	Pharm Biol	1.337
Lipids	2.353	Int J Psychiat Clin Pract	1.313
World J Surg	2.348	Eur J Drug Metab Ph	1.312
Int J Infect Dis	2.330	Traffic Inj Prev	1.286
Basic Clin Pharmacol Toxicol	2.294	J Occup Med Toxicol	1.226
BMC Psychiatry	2.237	Sci World J	1.219
Behav Pharmacol	2.194	Int J Acad Res	1.200
J Pharmacol Tox Met	2.150	Child Nerv Syst	1.163
Virol J	2.089	Asia Pac J Public Health	1.111
Trends Cardiovasc Med	2.074	Int J Inj Contr Saf Promot	1.047
Infect Agents Cancer	2.071	Int J Clin Pharm	1.044
BMJ Open	2.063	J Clin Toxicol	1.007
Med Oncol	2.058	Int J Vitam Nutr Res	1.000
Environ Impact Assess Rev	2.046	Hemoglobin	0.955
Alcohol	2.038	J Obstet Gynecol Res	0.931
Regul Peptides	2.014	Gen Physiol Biophys	0.875
Cancer Cell Int	1.989	Paediatr Int Child H	0.871
Mol Biol Rep	1.958	Asian J Surg	0.758
Scand. J. Trauma Resusc. Emerg. Med	1.926	Indian J Exp Biol	0.753
Scand J Immunol	1.882	J Pediatr Endocrin Met	0.711
Burns	1.836	Obes Res Clin Pract	0.697
J Nerv Ment Dis	1.812	Acta Chromatogr	0.485

Journal Factor	Impact	Journal Factor	Impact
J Med Case Rep	0.400	J Oncol	-
Ulus Travma Acil Cer	0.379	J Syst Cybern Inf	-
J Environ Prot	0.338	J Venom Res	-
Surg Pract	0.172	JMED Res	-
Addict Disorders and their treatment Journal	-	Longev	-
Appl Clin Res	-	Middle East Current Psychiatry	-
Arch Osteoporos	-	Mil Med. Sci. Lett	-
Austin J Clin Pathol	-	Neurol Disord Drug Targets	-
Biochim Biophys Acta	-	Oman Med J	-
BMC Emerg Them Epidemiol	-	Open Cardiovasc Med J	-
BMC Res Notes	-	Pharmaceuticals (Basel)	-
CMRO	-	Physiol Rep	-
Comput Math Methods Med	-	Qaboos Univ Med J	-
Dermatol Res Pract	-	Research	-
East Mediterr Health J	-	SQU Med J	-
Edu Health	-	Turk J Emerg Med	-
Educ Health (Abingdon	-	World Hosp Health Serv	-
Elsevier	-		
Eur J Cardio Med	-		
Exp Biol Med (Maywood)	-		
Expert Rev Dermatol	-		
FEBS Open Bio	-		
Front Public Health	-		
Gazzetta Medica Italiana	-		
Glob Health Promot	-		
Hamdan Med J	-		
HIV/AIDS – Research and Palliative Care	-		
Hum Gen Variation	-		
Int J Behav Healthcare Res	-		
Int J Diabetes Metabol	-		
Int J Inflam	-		
Int J Prevent & Treatment of Substance Use Disorders	-		
J Contemp Med Edu	-		
J Diabetes, Metabolic Disorders & Control	-		
J HealthC Fin	-		
J Inst Remote Hlth Care	-		
J Med Sci	-		
J Neonatal Perinatal Med	-		

مقدمة المحرر

هذا هو التقرير السنوي الرابع والعشرين عن نشر البحوث وملامح بحوث كلية الطب والعلوم الصحية بجامعة الإمارات العربية المتحدة. و يعتبر هذا العدد بمثابة جزء من سلسلة متواصلة من التقارير البحثية السنوية التي يعود تاريخها منذ أول تقرير لنا سنة 1991.

و كما جرت العادة في كل عام فقد حاولنا تطوير والحفاظ على جودة هذا المجلد وواصلنا إدراج ملامح عن الأقسام والتقارير الواردة من مجموعات الأولوية البحثية، بما في ذلك تقرير عن البحث العلمي لطلبة الطب. في نهاية هذا المجلد أرفقنا قائمة تضم المجلات التي قمنا بنشرها وعوامل تأثيرها.

حافظنا في هذا المجلد على التصميم الذي قمنا باستخدامه، حيث تم تصميمه من قبل قسم الإعلام المرئي وحظي على الموافقة العامة، وفي هذا الإصدار تم اتباع التصميم الذي ينص على أسلوب موحد والتناسق في استخدام العناصر البصرية، حيث يتميز هذا التصميم بسهولة تحديد الفصول والأقسام وفئات النص.

يسرني أن اتوجه بالشكر والثناء لفريق الإنتاج، السيدة إيفانا مصممة الجرافيك التي بذلت مجهودا في تصميم المجلد، والسيد راجا جوبالان على جهوده في مرحلة تحرير المساهمات الأولية للإدارات والتواصل مع جميع الأعضاء، بالإضافة الى السيد اشوك لمساهمته بتوفير الصور الفوتوغرافية، والآنسة العنود للمشاركة والقيام بدور الترجمة.

جزيل الشكر الى جميع المساهمين في هذا الإصدار واشكر بالأخص أعضاء الهيئة التدريسية

الأستاذ الدكتور كيث باجنال
المحرر

قام نائب مدير الجامعة للبحوث والدراسات العليا في العام الماضي بالتعاون مع مدير المشاريع والبحوث على تنفيذ رؤية معالي الشيخ حمدان بن مبارك آل نهيان باعتبار جامعة الإمارات الجامعة الرائدة في الدولة والتي تتمثل أولويتها في اخراج أبحاث عالية الجودة. وقد ساهم الدعم المستمر من قبل مكتب نائب مدير الجامعة للبحوث والدراسات العليا على توفير مصادر تمويل كبيرة وتقديم حلول لعدة مشاكل وأهمها تأخير تعيين مساعدي الباحثين.

يسرني أن أعتنم هذه الفرصة لأشكر جميع المساهمين في هذا المجلد والأسهامات البحثية بكلية الطب والعلوم الصحية.

الدكتورة/ مريم الشامسي
مساعد العميد للبحوث والدراسات العليا

مقدمة مساعد العميد لشؤون البحث العلمي و الدراسات العليا

خلال السنوات الاربع وعشرون الماضية قدم هذا التقرير السنوي عن المنشورات البحثية لكلية الطب والعلوم الصحية للمجتمع الخارجي اسهامات الكلية من خلال المنشورات البحثية والمساهمات الدولية والوطنية في اللقاءات العلمية والأنشطة الأكاديمية. حيث ساعدت الإسهامات البحثية لكلية الطب في تبوأ جامعة الإمارات مكانة رائدة في مجال البحوث الطبية الحيوية على مستوى دولة الإمارات والمنطقة.

وقد شهد العامين الماضيين فرص كبيرة لباحثينا من خلال توفير مختلف فرص التمويل السخي. بالرغم من الأجواء التنافسية العالية فقد تمكنت الكلية من تأمين عدد كبير من المنح الداخلية و الخارجية أيضا مما ساهم هذا في تعيين ودعم طلبة بحوث دراسات عليا ذو كفاءة عالية والمحافظة أيضا على مستوى انتاجيتهم المتميز.

نحن نسعى جاهدين في مكتب الدراسات العليا والبحوث على توفير بيئة لباحثينا تحافظ على التعاون والانتاجية للمعايير الدولية بيئة تمكن من الابداع في مجال البحوث عن طريق تخصيص الموارد بصورة حكيمة ورعاية قوة جديدة، وتوفير البنية التحتية والموارد اللازمة من خلال الحصول على احدث المعدات والتقنيات بالإضافة الى تسيير ذخائر الكلية للاستهلاك العام. في السنوات الأخيرة قمنا أيضا بتطوير وصيانة مرافق البحوث المركزية مثل وحدة التصوير والأبحاث التحليلية ومرفق الخلية الجزئية الحيوية بالإضافة إلى مربى لحيوانات التجارب الصغيرة.

وأثني على جميع الطلبة والفنيين وموظفي الدعم الأكاديمي وأعضاء الهيئة التدريسية الذين ساهموا في إنتاج البحوث الطبية ونشرها في هذا التقرير السنوي.

إن نجاح الكلية يتحقق بفضل فريق عمل مخلص ومنتج.

الأستاذ الدكتور / دينيس تيمبلتون
عميد كلية الطب والعلوم الصحية

كلمة العميد

خلال السنوات الاربع وعشرون الماضية قدم هذا التقرير السنوي عن المنشورات
زملائي الاعزاء

يسعدني أن أقدم التقرير السنوي لملامح بحوث وإسهامات كلية الطب والعلوم
الصحية التي قام بها الباحثين عام 2014. حيث تتوفر نسخة إلكترونية من هذا
التقرير في موقع جامعة الإمارات العربية المتحدة.

تحتفظ كلية الطب والعلوم الصحية بقيادتها ضمن اعضاء الهيئة التدريسية الباحثين
في الدولة وجميع انحاء المنطقة. حققت كلية الطب والعلوم الصحية نجاحا بفضل
اعضاء الهيئة التدريسية الموهوبين، وعلاقات بحثية انتاجية بالتعاون مع الكليات
الاخري في الجامعة والجامعات الاخرى وجهات صناعية ومؤسسات الرعاية الصحية
في جميع انحاء الدولة والمنطقة. نحن نفخر بتأسيس علاقات تعاونية مع جامعات
خارجية تساهم في تمكين علاقات بحثية بالإضافة الى تفعيل مهمتنا التعليمية
والتي تهدف الى تبادل الطلبة وأعضاء الهيئة التدريسية.

وباعتبار كلية الطب والعلوم الصحية إحدى التسع كليات في جامعة الإمارات فهي
الكلية الاولى التي تسهم في إجمالي النتائج البحثية للجامعة حيث خصصت مراكز
بحثية في ابوظبي ودبي والشارقة. ونتمنى لزملائنا كل التوفيق في هذه المراكز
البحثية.

اعرب عن جزيل امتناني لجميع طلبة الطب والدراسات العليا الذين لم يساهموا
فقط في التقرير السنوي للإسهامات البحثية بل على البيئة التعليمية التي تعم
الكلية. بالإضافة الى المتدربين العاملين في الكلية والذين يساهموا في التقدم
العلمي والثقافي لتعزيز مستقبل الأمة.

يسرني أن أعبر عن شكري الخاص إلى المحرر الأستاذ الدكتور كيث باجنال على
تفانيه والعمل الجاد في تحرير التقرير السنوي لملامح بحوث وإسهامات كلية
الطب والعلوم الصحية. ونتطلع إلى مواصلة نجاح أبحاثنا في كلية الطب والعلوم
الصحية.



المحتويات

كلمة العميد

مقدمة مساعد العميد لشؤون البحث العلمي و الدراسات العليا

مقدمة المحرر

107	فرق أولويات البحوث العلمية	1	المنشورات العلمية للأقسام
109	بحوث السكري و أمراض القلب و الأوعية الدموية	3	التشريح
112	بحوث علم الوراثة و التطوير	8	الكيمياء الحيوية
115	بحوث علم المناعة و التنظيم المناعي	19	طب العائلة
117	بحوث العلوم العصبية	23	معهد الصحة العامة
119	علم الاورام	33	الطب الباطني
120	بحوث الأصابات	42	التعليم الطبي
		45	الأحياء الدقيقة و المناعة
125	بحوث الطلبة	53	أمراض النساء و التوليد
		56	طب الأطفال
127	عوامل التأثير	62	علم الأمراض
		70	علم الأدوية
		79	علم وظائف الأعضاء
		89	الطب النفسي
		94	علم الأشعة
		97	الجراحة

هيئة التحرير
المحرر:
الأستاذ الدكتور كيث باجنال
السكرتير الإداري:
السيد راجاغوبالان
التصميم:
السيدة إفانا ليزاريتوري
التصوير:
السيد أشوك براساد
الترجمة:
الآنسة العنود الجابري

الصور المدرجة بالداخل من قبل الباحثين



المنشورات السنوية لمكتب العميد المشارك
لشؤون البحث العلمي و الدراسات العليا

طبع بواسطة وحدة المطبوعات
جامعة الامارات العربية المتحدة



2014

المنشورات العلمية و الاهتمامات البحثية

مكتب مساعد العميد لشؤون البحث العلمي
و الدراسات العليا

