



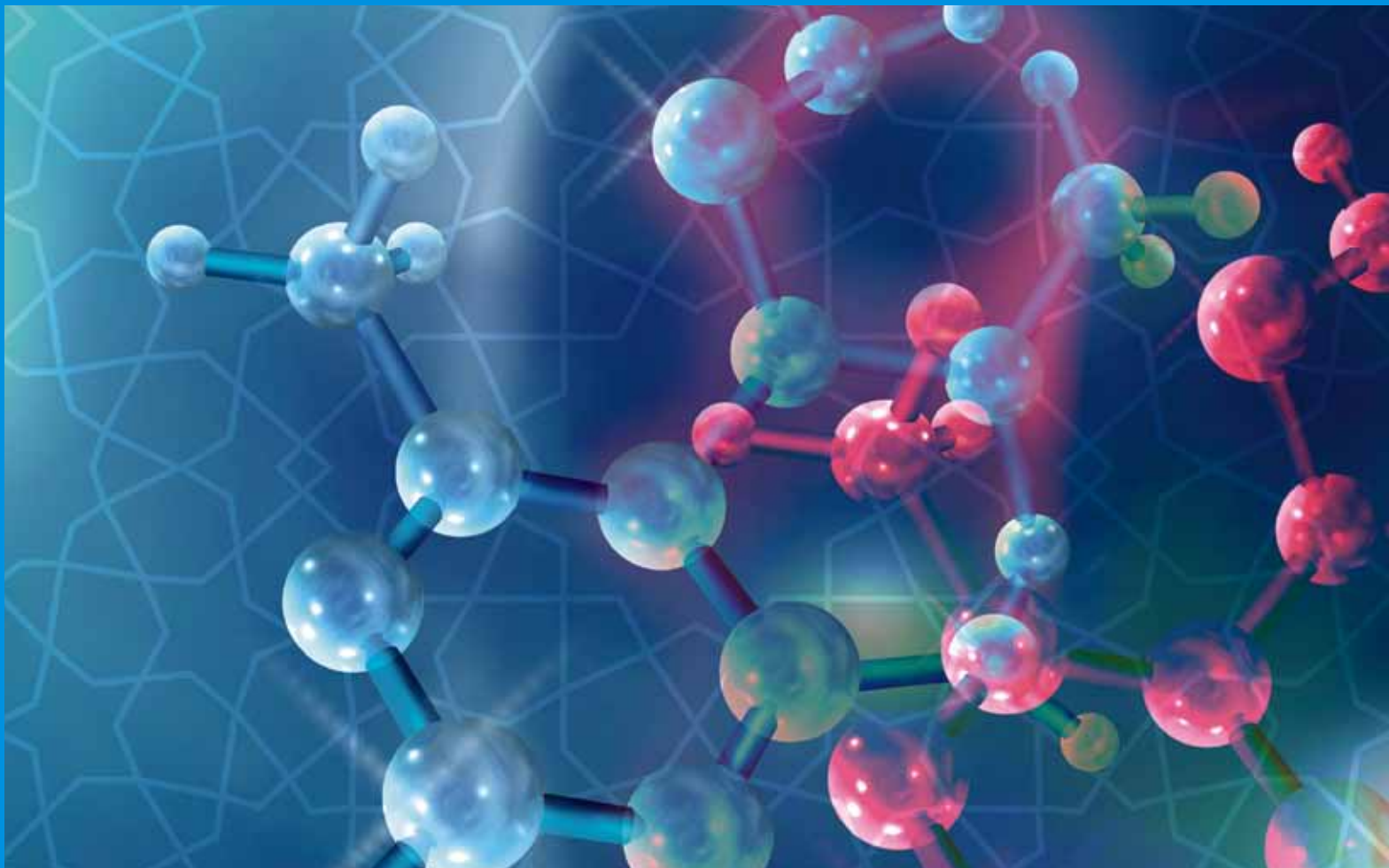
جامعة الإمارات العربية المتحدة
United Arab Emirates University

UAEU College of Medicine
and Health Sciences

2012

Research Publications & Research Profiles

Office of the Assistant Dean for Research
and Graduate Studies



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Dean's Message

It gives me great pleasure to welcome you to the College of Medicine and Health Sciences (CMHS) Research Publications 2012.

This annual publication provides a record of the research efforts of staff at the College of Medicine And Health Sciences (CMHS), UAEU. The report lists the staff members and their academic interests by department. It also documents research output for 2012, successful grant applications, and other project funding. A comparison of the research achievements by CMHS staff for 2012 against previous years, show a healthy improvement in research activity and outcome. I am delighted to recognize this positive achievement, which will strengthen our efforts to be a research-intensive college within a progressive national university.

I would like to acknowledge our national, regional, and international colleagues who have collaborated with CMHS staff on research projects and publications. We are also proud of our medical students contributions to research. Nurturing an interest in research at an early stage in their medical training will help some of our students consider medical research as a career option when they graduate. As always, we are grateful to our research sponsors who have continued to provide much-needed research funds to support laboratory, clinical, and epidemiological research.

My special thanks to the Editor, Professor Wim Lammers, who has worked tirelessly with Ivanna Lizarriturri of our Media Unit, and chairs of the departments at CMHS to compile and organize the material for this 2012 edition of 'Research Publications and Research Profiles'.

Professor Tar-Ching Aw
Interim Dean, College of Medicine & Health Sciences

Foreword from the Assistant Dean for Research & Graduate Studies

Research activities at the College of Medicine and Health Sciences (CMHS) lead to a high number of peer-reviewed publications in internationally acclaimed journals every year.

In the last 20 years, we have maintained this tradition and have kept the community in the UAE and across the globe aware of the research contributions of the CMHS at the UAEU in the academic and scientific environment. The researchers at the CMHS are well-known investigators in various disciplines of Biomedical Sciences and have always made their presence felt in the scientific community through their publications and participation at national and international meetings and other scholarly activities, which has led us to position ourselves ideally as the top biomedical research-intensive institution in the UAE and the region.

Despite a very competitive atmosphere to attract funds for research, we are proud of our faculty members who have preserved a progressive and cooperative environment while maintaining productivity of international standard. The Office of Research and Graduate Studies continues to promote such an environment 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 Imaging, Analytical, and a Molecular and Cellular Biology facility, in addition to a small animal vivarium.

It is important to highlight and recognize the contribution and ongoing support of the UAEU administration who are seeking to make UAEU a research intensive institution in order to implement the vision of His Excellency the Chancellor Sheikh Nahayan Mubarak Al Nahayan.

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

Dr. Ahmed H. Al-Marzouqi
Assistant Dean for Research & Graduate Studies

Editor's Preface

This is the 22nd annual report on Research Publications and Research Profiles for the College of Medicine & Health Sciences, United Arab Emirates University. This volume is a continuation of a series of annual reports, dating back to our very first report in 1991.

As usual, every year, we try to upgrade and maintain the quality of this directory and this year is no exception. We have continued to include the Departmental Profiles and the Reports from several Research Priority Groups, including a report on Student Medical Research. At the end of the booklet we have also listed the journals in which we have published in 2012 and their impact factor.

In this edition we have also kept the design, which we have used for the past 4-5 years. This design provides a uniform style and a consistent use of visual elements. With the new layout it is now easier to identify chapters, sections and text categories.

As always, it is a pleasure to thank the production team, who have put all this together. Ms Ivanna Lizarriturri was the Graphic Designer, literally from front to back cover. She also transformed all submissions into our in-house style using InDesign software. Mr Rajagopalan, as always, took care of editing the initial departmental contributions and the communication between all parties and Mr Ashook provided the numerous photographs. The translation, as in previous years, was ably performed by Ms Al-Anood Al-Jaberi.

Many thanks to all and to the faculty for their contributions,

Dr W Lammers, *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

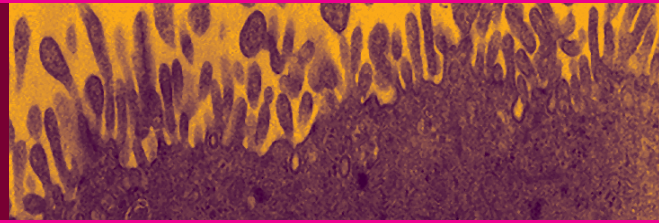
Physiology

Psychiatry

Radiology

Surgery

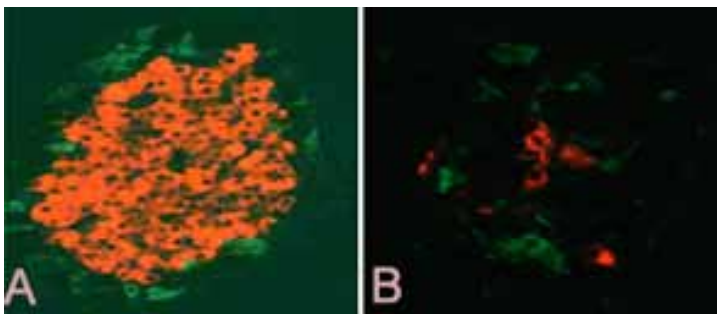
Department of Anatomy



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.

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



Immunolocalization of insulin (red) and NPY (green) in pancreatic islet cells.
Note a significant decrease in the number of insulin positive cells in the islet of diabetic rats (B) compared to control (A). X 400.

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.

Professor, Chairman

Prof E Adeghate

Professors

Prof K Bagnall

Prof S Karam

Prof E Mensah-Brown

Prof S Shehab

Assistant Professor

Dr. A Bahi

Dr. BS Emerald

Medical Research Specialist

Dr. Abdul Samad Ponery

Mr. RS Hameed

Ms. A Rifaat

Ms. Wafa Al Dhaheri

Mr. S Tariq

Mr. W Wanniarachi

Ms. Crystal D'Souza

Secretary

Ms. Shaikha Al Shamsi

Office Assistant

Mr. TV Basheer

Amine Bahi's main research activities are in the area of molecular and behavioral neuroscience. He studied the effects of glutamatergic and dopaminergic transmissions in different brain regions on psychiatric disorders in rodents. He is mainly interested in addiction, depression, anxiety and chronic psychosocial stress. He is currently investigating how genetic manipulations using viral vectors in the central nervous system are likely to be critical in behavioral consequences of these psychiatric illnesses. A second interest involves studying the role of microRNA124 in addiction. Recent findings showed that microRNA124a is expressed in the dorsal striatum. Using shRNA-expressing lentiviral vectors, microRNA124a-knock down in the dorso-lateral striatum reduced ethanol-conditioned place preference (EtOH-CPP) as well as alcohol voluntary intake in rats. The overall suggestion is that microRNA124a manipulation may provide an effective therapeutic intervention for alcoholism. In collaboration with the Department of Pharmacology & Therapeutics at the CMHS, he analyzed the effects of the newly synthesized Histamine H_3 receptor " H_3R " antagonist ST1283 in ethanol rewarding properties. Results showed that ST1283 decreased voluntary ethanol consumption and EtOH-CPP by altering its reinforcing effects, suggesting a novel role for histamine signaling in regulation of alcoholism.

EPK Mensah-Brown main research activity is in the mechanisms underlying MLD-STZ diabetes and experimental autoimmune encephalitis. Currently, I am studying the interactions that occur between cytokines as they cause the autoimmune conditions of type diabetes and EAE. I am at the present, examining the mechanism by which TLR-2 agonist, Pam3 CYS-CK4 (Pam3CSK₄), IL-27 and IL-17 enhance and promote diabetogenesis in susceptible mice. Recently, I have extended my studies to investigate the role of epigenetic regulating factors in the metabolic syndrome.

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.

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 manipulating their growth and differentiation on nanofibrous scaffolds.

Starling Emerald examines how shuttle changes in epigenetic regulatory interactions leads to metabolic diseases such as type 2 diabetes mellitus, obesity, cardiovascular disease and hypertension. UAE has the second highest prevalence of diabetes in the world (International Diabetes Federation, 2009). According to the International Diabetes Federation's report the number of people (20-70yrs) with diabetes in 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 behind the foetal origins of metabolic syndrome as well as to elucidate its relevance to humans we have carried out gene expression profiling, methylation profiling as well microRNA profiling studies. From these studies we have identified a number of novel targets (genes, microRNAs and promoter sequences) including some key regulators. We are currently carrying out detailed epigenetic analysis of some of these targets. We believe that a detailed analysis of these may improve our understanding of how shuttle 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

Al-Marzoqee F, Khodr G, Al-Awadhi H, John R, Beg A, Vincze A, Branicki F, Karam SM. (2012). Up-regulation and inhibition of nuclear translocation of Oct4 during multistep gastric carcinogenesis. *International Journal of Oncology*, 41:1733-1743.

Al Samri MT, Biradar AV, Alsuwaidi AR, Balhaj G, Al-Hammadi S, Shehab S, Al-Salam S, Tariq S, Pramathan T, Benedict S, Asefa T, Souid AK. (2012). In vitro biocompatibility of calcined mesoporous silica particles and fetal blood cells. *International Journal of Nanomedicine*, 7: 3111-21.

Bahi A, Dreyer JL (2012). Hippocampus-specific deletion of tissue plasminogen activator "tPA" in adult mice impairs depression- and anxiety- like behaviors. *European Neuropsychopharmacology* 22;672-682.

Bahi A, Dreyer JL. (2012). Involvement of nucleus accumbens dopamine D1 receptors in ethanol drinking, ethanol-induced conditioned place preference, and ethanol-induced psychomotor sensitization in mice. *Psychopharmacology (Berl)*, 222;141-153.

Bahi A. (2012). The selective metabotropic glutamate receptor 7 allosteric agonist AMN082 prevents reinstatement of extinguished ethanol-induced conditioned place preference in mice. *Pharmacology, Biochemistry and Behavior*, 101;193-200.

Bahi A, Dreyer JL. (2012). Involvement of tissue plasminogen activator "tPA" in ethanol-induced locomotor sensitization and conditioned-place preference. *Behavioural Brain Research*, 226;250-258.

Bahi A, Fizia K, Dietz M, Gasparini F, Flor PJ. (2012). Pharmacological modulation of mGluR7 with AMN082 and MPMIP exerts specific influences on alcohol consumption and preference in rats.

Addiction Biology, 17;235-247.

Hartyánszky I, Kalász H, Adeghate E, Gulyás Z, Hasan MY, Tekes K, Adem A, Sótönyi P. (2012). Active Metabolites Resulting from Decarboxylation, Reduction and Ester Hydrolysis of Parent Drugs. *Current Drug Metabolism*, 13: 835-862.

Harvey NC, Lillycrop KA, Garratt E, Sheppard A, McLean C, Burdge G, Slater-Jefferies J, Rodford J, Crozier S, Inskip H, Emerald BS, Gale CR, Hanson M, Gluckman P, Godfrey K, Cooper C. (2012). Evaluation of methylation status of the eNOS promoter at birth in relation to childhood bone mineral content. *Calcified Tissue International* 90(2):120-127.

Howarth FC, Qureshi MA, Hassan Z, Isaev D, Parekh K, John A, Oz M, Raza H, Adeghate E, Adrian TE. (2012). Contractility of ventricular myocytes is well preserved despite altered mechanisms of Ca²⁺ transport and a changing pattern of mRNA in aged type 2 Zucker diabetic fatty rat heart. *Molecular and Cellular Biochemistry*, 361(1-2): 267-280.

Howarth FC, Qureshi MA, Hassan Z, Al Kury LT, Isaev D, Parekh K, Yammahi SRKD, John A, Oz M, Raza H, Adeghate E, Adrian TE. (2012). Changes in calcium transport, expression of genes encoding muscle proteins and contractile function in young and aging Zucker diabetic fatty rat heart. *Hamdan Medical Journal*, 5(2):165-172.

Jebasingh D, S Venkataraman S, Jackson DD, Emerald BS. (2012). Physiochemical and toxicological studies of the medicinal plant *Cyperus rotundus* L (Cyperaceae). *IJARNP*. 5(4): 1-8

Lammers WJ, Stephen B, Karam SM. (2012). Functional reentry and circus movement arrhythmias in the small intestine of normal and abnormal diabetic rats. *American Journal of Physiology, Gastrointestinal Liver Physiology*. 302:G684-G689.

Nemmar A, Raza H, Subramanian D, John A, Elwasila M, Ali BH, Adeghate E. (2012). Evaluation of the pulmonary effects of short-term nose-only cigarette smoke exposure in mice. *Experimental Biology and Medicine*. 237(12): 1449-456.

Ram N, Kalasz H, Adeghate E, Darvas F, Hashemi F, Tekes K. (2012). Medicinal Chemistry of Drugs with Active Metabolites (N-, O-, and S-desalkylation and Some Specific Oxidative Alterations) *Current Medicinal Chemistry*, 19 (33): 5683-5704.

Zhang H, Azimullah S, Zheng X, Wang X, Amir N, Mensah-Brown E, Shahin A, Press R, Zhu J, Adem A. (2012). IFN- γ deficiency exacerbates experimental autoimmune neuritis in mice despite a mitigated systemic Th1 immune response. *Journal of Neuroimmunology*, 246: (1-2):18-26. Books, Chapters, Reviews and Editorials

Adeghate E (2012). The role of diabetes mellitus in the Gulf region. *Hamdan Medical Journal*, 5:85-86

Adeghate E (2012). Pancreatic beta-cell: the beauty of being plastic. *Experimental Physiology*, 97:(8) 906-907.

Adeghate E (2012). Orexins: tissue localization, functions, and its relation to insulin secretion and diabetes mellitus. In: *Sleep Hormones* Ed. Litwack G., Elsevier, 89: 111-133, 2012

Karam SM: Stem cells and gastric carcinogenesis: from mouse to human. In: *Stem Cells and Cancer Stem Cells*. Ed. Hayat MA, Springer. (2012). vol 3, Ch 22, pp 221-230.



Published Abstracts, Letters and Correspondence

Fahim MA, Nemmar A, Shehab S, Adem A, Hasan MY. (2012). Paraquat exposure induces dorsiflexor

muscle dysfunction and dopaminergic modification resembling Parkinson's disease. The FASEB Journal, 26:1035.1

Howarth FC, Qureshi, MA, Hassan, Z, Isaev, D, Parekh K, John, A, Oz M, Raza H, Adeghate E, Adrian TE. (2012). Contractility of ventricular myocytes is well preserved despite altered mechanisms of Ca²⁺ transport and a changing pattern of mRNA in aged type 2 Zucker diabetic fatty rat heart. Circulation, 125 (19): E680-E680

Proceedings, Conferences, Invited Lectures, Web Sites and Others

AlKaabi M, Alkindi F, Aldhaheer W, Karam SM. (2012). Oct4 is a biomarker for breast cancer in rats. The Annual Meeting of the Emirates Medical Students Association, Dubai, UAE.

Bahi A. (2012). Systemic and central modulation of the metabotropic glutamate receptor 7 "mGluR7" impairs ethanol-reward related behavior in rodents. The 8th Forum of European Neuroscience Societies (FENS), July 14th-18th, Barcelona, Spain.

D'Souza A, Iqbal T, Adeghate E, Howarth FC, Bidasee KA, Singh J. (2012). Left ventricle structural remodelling and cardiomyocyte contractile function in type 1 diabetic rats. Proc Physiol Soc, 27, PC28.

Fahim MA, Shehab S, Nemmar A, Adem A, Hasan MY. (2012). Vitamin E treatment mitigates paraquat neurotoxicity in rats. Society for Neuroscience 2012.

Jamal M, S. Chogle S, Goodies H, Greish YE, Al-Habib MA, Huang G, Karam SM. (2012). Dental stem cell characterization and their growth and differentiation on micropo-

rous scaffolds. The annual meeting of the International Association of Dental Research, Iguaçu Falls, Brazil.

Karam SM. (2012). Evidence in support of the stem cell origin of cancer. Stem Cell International Symposium, Cambridge, UK.

Karam SM, Al-Awadhi H, Al-Marzoqi F, Khodr G, Vincze A, Branicki F. (2012). Role of stem cells in gastric carcinogenesis. The Terry Fox Cancer Symposium – Emirates Oncology Conference, Abu Dhabi, UAE.

Lotfy M, Singh J, Adeghate E. (2012). Protective effect of exenatide treatment in STZ-induced diabetic rats in vivo and in vitro. Proc Physiol Soc, 27, PC152

Mensah-Brown EPK, Al Shamsi M, Shahin A, Singh S. (2012). IL-27 is pro-Inflammatory in MLD-STZ Diabetes. 10th Cytokine and Inflammation meeting, San Diego, USA.

Pulikkot S, Greish YE, Karam SM. (2012). Fabrication of nanofibrous scaffold for gastric epithelial tissue engineering. International Workshop on Advanced Material, Ras El-Khaimah, UAE.

Saseedharan P, Greish YE, Karam SM. (2012). Gastric stem cell culture on a biodegradable chitosan nanofibrous scaffold. International Workshop on Advanced Material, Ras El-Khaimah, UAE.

Shehab S, Desouza C, Ljubicavljjevic M. (2012). Deep brain stimulation of the subthalamic nucleus produces local neuronal inhibition. The 8th Forum of European Neuroscience Societies (FENS), July 14th-18th, Barcelona, Spain.

RESEARCH GRANTS

CMHS Research Grants

Dr. A Bahi [PI]
Inhibitory influence of mGluR7 activation on ethanol withdrawal-

induced symptoms in rats

Professor KM Bagnall [PI]
Behaviour of human chondrocytes in relation to cell density during passaging and scaffold environment.

Professor SM Karam [PI], Ali Al-Fazari:
Expression of gastric stem cell genes during Helicobacter pylori infection.

Dr BS Emerald [PI]
Identification of early epigenetic regulatory factors of the metabolic syndrome using a rodent model system. Faculty Grant, FMHS. 2012, 35500Dhs

UAEU Interdisciplinary Grant

Dr A Al-Naqbi [PI], Professor SM Karam, Dr M Al-Rubeai
Monitoring and analysis of 2D and 3D models for gastric epithelial stem cells in the context of the extracellular microenvironment.

Terry Fox Fund for Cancer Research

Professor SM Karam [PI]
Characterization of the early stages of mammary gland carcinogenesis

UAEU-National Research Foundation

Dr YE Greish [PI], Professor SM Karam, Dr A Murad
Nanofibrous Scaffolds for Stem Cell Transplantation.

Professors W Lammers [PI], SM Karam, Dr JD Huizinga
Morphological, electrical & mechanical disturbances in stomach & small intestine of diabetic rats.

Professor S Shehab
How does Deep Brain Stimulation work?

Professors M Ljubicavljjevic [PI], T Adrian, S Shehab
The mechanisms of Repetitive Transcranial Magnetic Stimulation (rTMS) induced modulation of brain plasticity in health and disease

Professor S Shehab
Research Competition 2011: Neuropathic pain due to trauma and inflammation of the viscera

Professors FC Howarth (PI), K Yuill, E Adeghate
Electrical remodelling of the atrio-ventricular node in diabetes

Emirates Foundation Grant

Professor E Adeghate
The effect of embryonic pancreatic tissue grafts on type 1 diabetes in rats.

Professors FC Howarth (PI), TE Adrian, E Adeghate, Drs M Oz, N Al-Minhali.

Progressive changes in expression of genes encoding Ca²⁺ signalling proteins and remodelling of Ca²⁺ proteins underlies cardiac muscle dysfunction in type 2 diabetic heart



2012

Anatomy

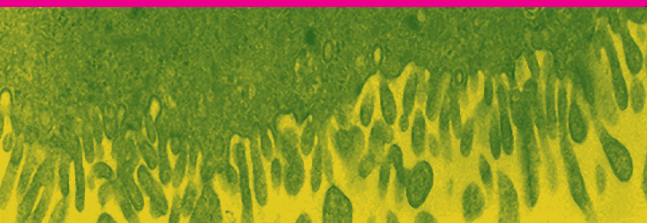


Standing left to right:

TV Basheer, S Shehab, A Wanni, KM Bagnall, Prashanth Saseedharan, EPK Mensah Brown, S Tariq, E Adeghate, S Karam, AS Ponery, RS Hameed, S Emerald, A Bahi

Seated left to right:

A Rifaat, Divya Galani, Mehwish Anwar, S Al Shamsi, W Al Dhaheri, C D'Souza, Sunitha Pulikkot, Sneha Ann Thomas.



Department of Biochemistry

Research Profile

Professor & Chair:

Prof H Raza

Professor:

Prof JM Conlon

Prof OMA El-Agnaf

Prof S Galadari

Associate Professor:

Dr AH Al-Marzouqi

Dr M J Fernandez-Cabezudo

Assistant Professor:

Dr Md Emdadul Haque

Dr F Mustafa

Medical Research Specialist:

Dr C Jisha

Ms A John

Ms M Mechkarska

Dr M Patel

Mr M Qureshi

Medical Research Technician:

Mr A Qader

Medical Secretary

Ms M Hashem

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, and naturally occurring bioactive peptides. 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.

In 2012, Dr Emdadul Haque joined our department from the University of Ottawa, Canada. His main research interest is molecular basis of neurodegenerative diseases. Prof. Sehamuddin Galadari is continuing as Vice-Provost for Research and Graduate Studies in UAEU and Dr Ahmed Al-Marzouqi as Assistant Dean for Research and Graduate Studies at CMHS. Prof. Omar El-Agnaf continued as Chair of the Neuroscience Research Priority Group.

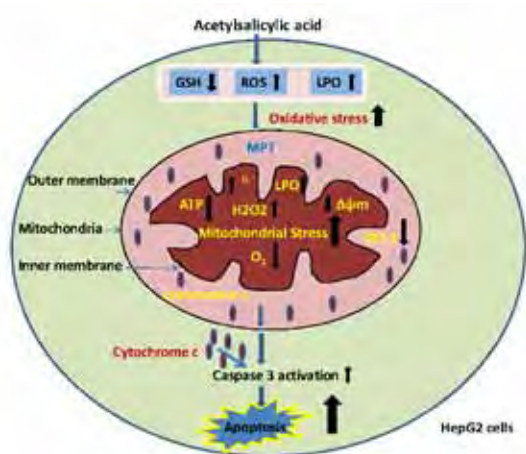
Our graduate program in Biochemistry and Molecular Biology (M.Sc. and Ph.D.) at the College of Medicine and Health Sciences is a multi-disciplinary program which provides students with a foundation in Biochemistry and Molecular and Cellular Biology as well as intensive state-of-the-art laboratory research training.

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

Research Interest: My research is mainly focused on mitochondrial dysfunction in oxidative stress conditions caused by chemicals, drugs, diseases (diabetes and cancer) and toxicity. I am using in vivo and in vitro models in our studies. In addition, I am 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 metabolism. Altered mitochondrial functions and glutathione-dependent redox homeostasis have been implicated in toxicities and diseases including cancer, diabetes, and cardiovascular disorders. Using cancer cells and macrophages, when treated with higher doses of NSAIDs such as aspirin and acetaminophen, we have shown that increased oxidative stress and mitochondrial dysfunction are the main causes of cellular toxicity and cell death (apoptosis/necrosis). We have identified molecular and metabolic targets of cytotoxicity in cancer and non-cancer cell lines. Our recent study has shown that the restoration of antioxidant GSH pool by N-acetylcysteine (NAC) has protective effects on drug-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 left ventricle cardiac myocytes from type 2 diabetic /obese rats have increased oxidative stress and altered mitochondrial function. These studies have resulted in six publications in peer reviewed journals.

Peptides with therapeutic potential from frog skin (Prof. J.M. Conlon)

The skins of certain species of frogs represent an important source of biological active peptides that have the potential for development in therapeutically valuable pharmaceutical agents.

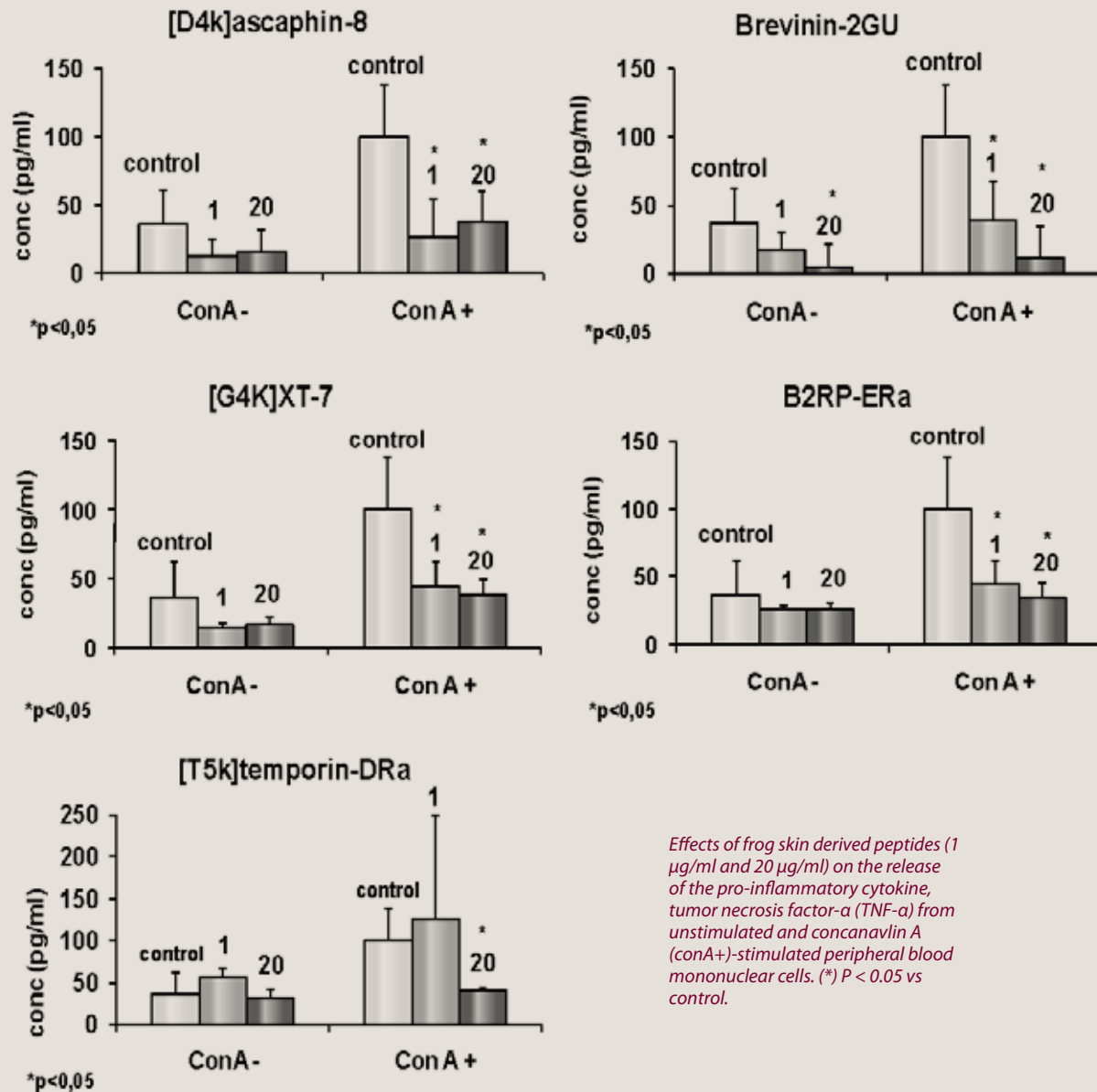
These include bactericidal and fungicidal peptides as anti-infectives, peptides with potent cytotoxic activity against tumor cells as anti-cancer agents, and peptides with in vitro and in vivo insulin-releasing activities as therapy for patients with Type 2 diabetes:

Research highlights:

Although not life-threatening in itself, acne vulgaris can result in serious psychological consequences including severe depression, high levels of anxiety and social inhibition particularly in adolescents, and is regarded as a risk factor for suicide. The pathogenesis of acne vulgaris is multifactorial involving infection of the pilosebaceous unit with the anaerobe *Propionibacterium acnes* and a cytokine-mediated inflammatory response. Five frog skin-derived antimicrobial peptides ([D4k]ascaphin-8, [G4K]XT-7, [T5k]temporin-DRa, brevinin-2GU, and B2RP-ERa), chosen for their low hemolytic activity against human erythrocytes, were assessed for their effects on the growth of clinical isolates of *P. acnes* and on the release of pro-inflammatory and anti-inflammatory cytokines from peripheral blood mononuclear (PBM) cells. All peptides inhibited the growth of *P. acnes* with the highest potency exhibited by [D4k]ascaphin-8 (minimum inhibitory concentration, MIC = 3 - 12.5 μ M). Release of TNF- α from concanavalin A (ConA)-stimulated PBM cells was significantly reduced by [D4k]ascaphin-8, [G4K]XT-7, brevinin-2GU, and B2RP-ERa (1 and 20 μ g/ml) and by [T5k]temporin-DRa (20 μ g/ml). Release of IFN- γ from unstimulated PBM cells was significantly reduced by [D4k]ascaphin-8 and brevinin-2GU (1 and 20 μ g/ml). No peptide showed significant effects on IL-17 release. Release of the anti-inflammatory cytokines TGF- β , IL-4, and IL-10 from both unstimulated and ConA-treated PBM cells was significantly

increased by [T5k]temporin-DRa and B2RP-ERa (1 and 20 µg/ml). The potent activities of [D4k]ascaphin-8 and [T5k]temporin-DRa in inhibiting the growth of *P. acnes* and the release of

pro-inflammatory cytokines, and in stimulating the release of anti-inflammatory cytokines suggest a possible therapeutic role in the treatment of acne vulgaris.



Signal transduction pathways of sphingolipids and their role in cancer and sensitivity to anti-cancer drugs (Prof. S. Galadari)

Sphingolipids, one of the major classes of lipid within the mammalian lipidome are characterized by the presence of sphingoid base in their structure. Sphingolipids were initially known as major components of the eukaryotic plasma membrane which helps to maintain its integrity and fluidity. Advances in lipidomic technology that took place during past few decades have transformed our understanding of this class of lipid molecules. In addition to their established roles in cell structure, sphingolipids are currently

considered as key bioactive molecules that modulate important biological processes such as proliferation, differentiation, angiogenesis, apoptosis, autophagy and senescence. Indeed, sphingolipid research has expanded beyond these basic cellular processes to draw the attention of researchers in several pathophysiological conditions such as diabetes, cardiovascular diseases, and neurodegenerative disorders. During the past few decades, accumulating evidence has shown a clear indication that sphingolipids such as ceramide, sphingosine, sphingosine-1-phosphate (S1P) and glycosphingolipids (GSL) have important role in the pathogenesis and management of different types of cancer.

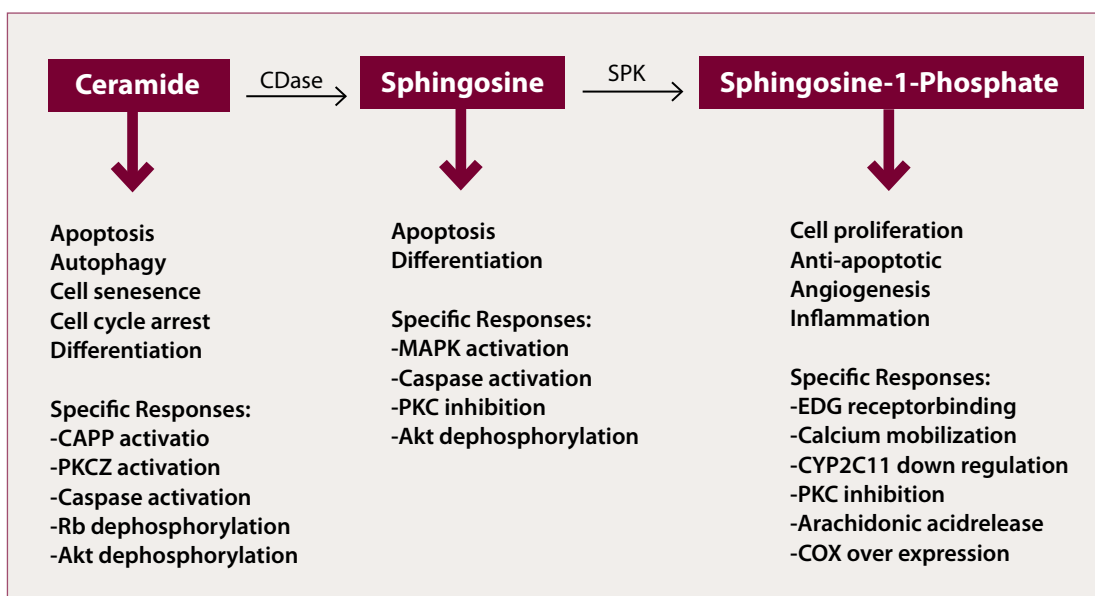


Figure1. Schematic representation of role ceramide, sphingosine and sphingosine-1-phosphate in cellular signaling

The anti-proliferative sphingolipid, ceramide is intimately involved in the regulation of cancer-cell growth, differentiation, senescence, autophagy and apoptosis. Many cytokines, anti-cancer drugs and other stress-causing agonists induce cell death via increasing endogenous ceramide levels through de novo synthesis and/or hydrolysis of sphingomyelin. Reciprocally, decreased levels of endogenous ceramide may be caused by increased expression of glucosylceramide synthase (GCS), which clears ceramide levels by converting it into glucosylceramide, results in the development of a multidrug resistance phenotype in many cancer cells. Ceramide seems to transduce these regulatory pathways predominantly by regulating specific protein

targets such as phosphatases, kinases and caspases. These protein targets, in turn, modulate components of various signaling pathways such as Akt, protein kinase C (PKC), mitogen-activated protein kinases, cathepsin D, c-raf, kinase suppressor of ras, phospholipase D and caspase family proteases.

Resistance to anticancer drugs is a major problem and challenge in cancer chemotherapy. Studies from our lab over the past years have established that sphingolipids are key regulators in determining sensitivity to chemotherapeutic drugs and other cellular stresses. In particular we have studied the roles of ceramide and sphingosine, which are considered to be "tumor

suppressor lipids" in induction of cancer cell death or sensitization of cancer cell to chemotherapy. Our previous work has focused on the role of sphingosine and Akt dephosphorylation in induction of apoptosis in human leukemic cells. Recently, we demonstrated that, in human leukemic cells, curcumin increases ceramide generation via caspase-dependent inhibition of sphingomyelin synthase (SMS), an enzyme that can generate sphingomyelin from ceramide. In addition, pre-treatment with D-609, a putative SMS inhibitor, enhanced curcumin-induced ceramide generation and induction of apoptosis, which suggests that this could be a useful therapeutic tool in increasing sensitivity of leukemic cells to apoptosis.

Our lab focuses the following research areas:

- Role of ceramide in oxidative stress induced autophagic cell death.
- Development of cancer therapy through adjustment of sphingolipid metabolism in order to accumulate "tumor suppressor lipid" and to decrease "tumor promoting lipids" by using spice derived phytochemicals.
- Role of protein phosphatase-1 in sphingosine and ceramide induced apoptosis in human leukemic cells

Molecular Basis of Pathogenesis (Dr. Farah Mustafa)

Overall, my research interest lies in the area of molecular basis of diseases induced by retro-viruses. 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. My recent focus is on studying the viral etiology of human breast and other cancers.

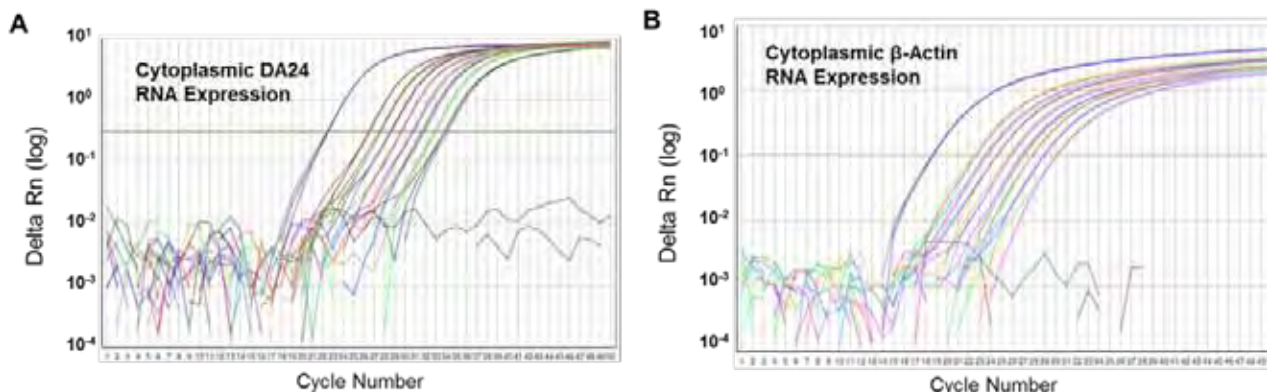
The mouse mammary tumor virus (MMTV) is a retrovirus that causes both breast cancer and leukemia in mice. However, it is increasingly being detected in human breast and other cancers. Controversy surrounds whether this virus has any role to play in human cancer(s). My goal is to systematically study how this virus, if at all, may be involved in human breast and perhaps other cancers such as leukemia/lymphomas and eventually what role could it be playing in their induction. Additionally, I am interested in the mechanism of MMTV-induced tumors in the host, regulation of basic steps in MMTV replication and gene expression, and role of miRNAs in MMTV-host interactions.

Research Highlights:

We have focused on two research goals primarily:

• **Preliminary Characterization of MMTV in Human Breast Carcinoma.** Our results have revealed that MMTV-like sequences can be found in human breast cancer patients from Pakistan; however in normal individuals as well. This suggests a general exposure of the population to this virus. We are expanding our studies now to include patients from the UAE to determine their rate of MMTV prevalence.

• **Molecular Characterization of HIV Strains Prevalent in Pakistan.** We have characterized the genotypes of HIV-1 strains spreading in random individuals in Pakistan. Our study has shown that general HIV-infected individuals harbor HIV-1 clade B, a particular virus strain that has not been reported in this region. This is an interesting finding since so far primarily clade A has been reported among intravenous drug users, a high risk group for HIV infection, while the general population has not been typed.



Development of a sensitive and quantitative real time PCR assay for quantitation of MMTV-specific RNA.

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 gene 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

PINK1 inactivation sensitizes dopamine producing neurons against MPTP.

In our recent studies, we have examined whether down-regulation of PINK1 affects dopaminergic neuron loss following 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) in the adult mouse. Two model systems were utilized: virally delivered shRNA-mediated knockdown of PINK1 and germ line-deficient mice. In both instances, loss of PINK1 generated significant sensitivity to damage induced by systemic MPTP treatment. This sensitivity was associated with greater loss of dopaminergic neurons in the Substantia Nigra pars compacta and terminal dopamine fiber density in the striatum region. Importantly, we also show that viral mediated expression of two other recessive PD-linked familial genes, DJ-1 and Parkin, can protect dopaminergic neurons even in the absence of PINK1. This evidence not only provides strong evidence for the role of endogenous PINK1 in neuronal survival, but also supports a role of DJ-1 and Parkin acting parallel or downstream of endogenous PINK1 to mediate survival in a mammalian in vivo context.

Function of PINK1 interactor, AFG3L2

To study the function of PINK1, we performed mass spectroscopy based interactomics study which led to identification of ATPase family gene 3-like 2 (AFG3L2). AFG3L2 along with AFG3L1 and Paraplegin are members of m-AAA protease family which are located in the inner mitochondrial membrane, and are associated

with various neurodegenerative disorders. We confirmed that PINK1 and AFG3L2 physically interact by performing co-immunoprecipitation experiment. Interestingly, we also found that AFG3L2 not only cleaves PINK1 but also confers its stability. Currently, we are focusing to identify AFG3L2 mediated cleavage site of PINK1 and study the biological function of PINK1 cleaved products.

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

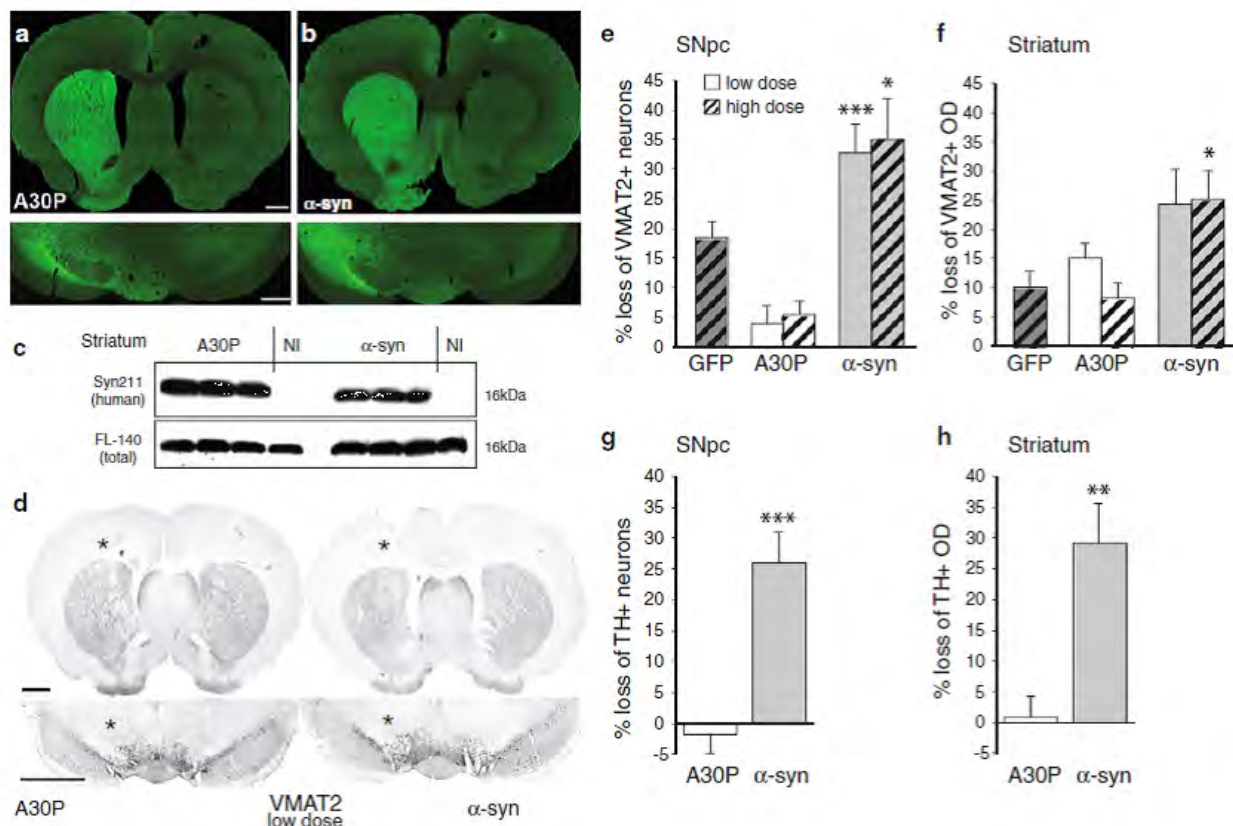
Pathological studies in human neurodegenerative diseases such as Alzheimer's disease (AD), Parkinson's disease (PD), dementia with Lewy bodies (DLB), the prion dementias (e.g. mad cow disease and its equivalent, CJD, in humans), British dementia and Huntington's disease, have revealed abundant protein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

α -Synuclein (α -syn) is a presynaptic protein present at most nerve terminals, but its function remains largely unknown. The familial forms of Parkinson's disease associated with multiplications of the α -syn gene locus indicate that overabundance of this protein might have a detrimental effect on dopaminergic transmission. To investigate this hypothesis, we use adeno-associated viral (AAV) vectors to overexpress human α -syn in the rat substantia nigra. Moderate overexpression of either wild-type (WT) or A30P α -syn differs in the motor phenotypes induced, with only the WT form generating hemiparkinsonian impairments. Wild-type α -syn causes a reduction of dopamine release in the striatum that exceeds the loss of dopaminergic neurons, axonal fibers, and the reduction in total dopamine. At the ultrastructural level, the reduced dopamine release corresponds to a decreased density of dopaminergic vesicles and synaptic contacts in striatal terminals. Interestingly, the membrane-binding-deficient A30P mutant does neither notably reduce dopamine release nor it cause ultrastructural changes in dopaminergic axons, showing that α -syn's membrane-binding properties are critically involved in the presyn-

aptic defects. To further determine if the affinity of the protein for membranes determines the extent of motor defects, we compare three forms of α -syn in conditions leading to pronounced degeneration. While membrane-binding α -syns (wild-type and A53T) induce severe motor impairments, an N-terminal deleted form

with attenuated affinity for membranes is inefficient in inducing motor defects. Overall, these results demonstrate that α -syn overabundance is detrimental to dopamine neurotransmission at early stages of the degeneration of nigrostriatal dopaminergic axons.



WT- α -synuclein induces higher loss of dopaminergic markers than A30P α -synuclein, while both forms of the protein show similar transgene expression in the SN and striatum.

Neuro-modulation of the immune response (Dr. M.J. Fernandez-Cabezudo)

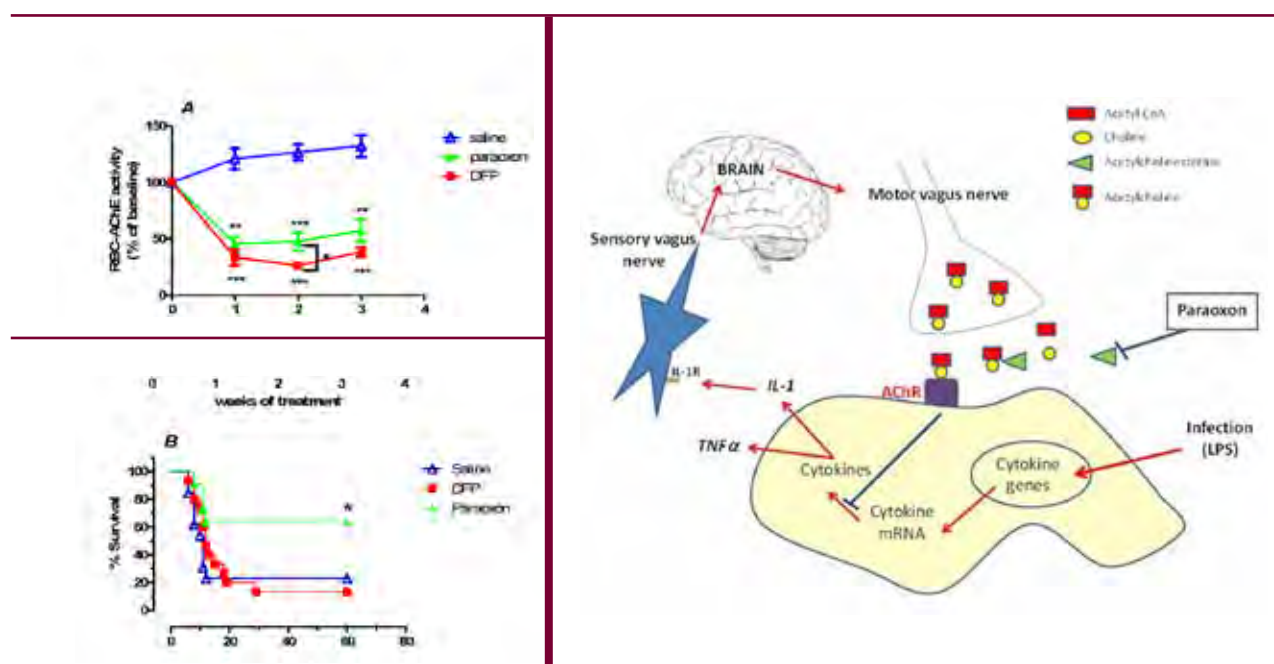
My main research interest is to investigate the potential mechanism by which the cholinergic nervous system modulates the immune response in infectious episodes and autoimmune diseases. We have demonstrated that the inhibition of acetylcholinesterase enzyme (AChE), which results in increased cholinergic 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

Our earlier studies demonstrated that inhibition of AChE by paraoxon led to a significant enhancement in animal survival following a lethal infection, presumably through modulation of macrophage activity. However, we have shown that another AChE inhibitor, diisopropylphosphofluridate (DFP), was completely ineffective in the same system. Given that macrophages orchestrate the immune response to infection, and appear to be the target of cholinergic pathway, we have compared the potential effects of DFP and paraoxon on macrophage activity using the well characterized J774 cell line. Our results indicated that DFP-treatment reduces the phagocytic activity of J774 cells by 25% and impairs the production of reactive oxygen species and upregulation of cellular membrane activation markers, both needed for proper immune response against pathogens. These effects could be explained by the fact that DFP, apart from being an inhibitor of the AChE activity, is also a serine protease inhibitor.



(A) Reduction of RBC AChE activity in paraoxon- and DFP-treated mice. (B) Exposure to paraoxon, but not to DFP, improves resistance to virulent infections.

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 expression 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 impor-

tant cellular processes required for maintenance and growth of the cell. To access the DNA and the genes, the nucleoprotein structure, called chromatin, which consists of DNA, histones, and non-histone proteins needs to be opened up or altered. This is accomplished as a result of DNA and histone modifications or by DNA binding proteins. 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. This is an important question to be addressed since gene regulation can determine the amount of protein production required for important functions of all cells. This is also important since many subunits of these chromatin-modifying proteins in humans have been implicated in the initiation of various diseases. It is likely that errors in the function of these protein complexes can result in alterations in the life cycle of the cell that may lead to the development of cancer. Thus, 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.

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. Undoubtedly, these experiments on the mechanisms of action of the chromatin remodeling complexes will increase our understanding of how these complex affect the regulation of specific genes that may be involved in different diseases.

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RESEARCH GRANTS

CMHS Research Grants

Professor Haidar Raza (PI) Altered mitochondrial functions, GSH metabolism and oxidative stress in the heart muscles of Zucker Diabetic Fatty rats

Professor JM Conlon (PI) Structural and biological characterization of the hymenochirins:

a family of antimicrobial peptides from the African frog *Hymenochirus curtipes*.

Professor S Galadari (PI) Investigating the role of ceramide in oxidative stress induces autophagic cell death in human malignant glioma cells.

Dr Farah Mustafa (PI) Preliminary Characterization of MMTV Integration Sites in the Human Genome.

Dr Emdadul Haque (PI) Role of Glucocerebrosidase (GBA) gene in *Drosophila* model of Parkinson's disease. (Seed grant)

Dr MF Cabezudo (PI) Regulation of macrophage inflammatory responses by organophosphorous compounds; differential role of acetylcholinesterase vs serine-protease inhibitors.

Terry Fox Cancer Research Funds

Professor Haider Raza (PI) Alterations in mitochondrial bioenergetics and glutathione metabolism by NSAIDs (non-steroidal anti-inflammatory drugs): implications in cancer prevention and treatment. Aspirin-induced apoptosis in Human hepatoma HepG2 cells (continuation)

Professor JM Conlon (PI). Transformation of the naturally occurring frog skin peptides ascaphin-8 and XT-7 into potent, non-toxic anti-cancer agents (continuation)

Professor S Galadari (PI) Characterization of curcumin signal transduction and apoptosis as possible target for chemotherapy (continuation).

UAE University Research Grant

Professor JM Conlon (PI). Discovery and development of peptide-based therapeutic agents for the treatment of patients with Type 2 diabetes mellitus (continuation)

Professor O El-Agnaf (PI) Developing a new therapeutic strategy for Parkinson's disease and related disorders. 2011-2014.

Dr Ahmed Al Marzouqi (PI)
Molecular Mechanisms of Gene
Regulation through Epigenetics:
the Role of Chromatin Remodelers
in Cancer"

Emirates Foundation

Professor S Galadari (PI)
Purification and characteriza-
tion of novel more hydrophobic
isoform of N-acylsphingosine
hydrolase (continuation).

Dr. Ahmed 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"

National Research Foundation

Dr MF Cabezudo (PI)
Fernandez-Cabezudo MJ. Neuro-
immune modulation of inflamma-
tory diseases:
potential role in the amelioration
of diabetes

Alzheimer's Drug Discovery Foundation

Professor O El-Agnaf (PI)
Alzheimer's Drug Discovery
Foundation (NY, USA). Testing a
combination of CSF biomarkers
for discriminating dementia with
Lewy bodies from other neurode-
generative disorders and controls.
2013 – 2014. NEW

Lundbeck Foundation (Denmark)

Professor O El-Agnaf (PI) (Co-PI
with Prof. Jia-Yi Li and Dr Christian
Hansen).
Can we block aggregation and
intercellular propagation of
 α -synuclein to prevent pathologi-
cal progression of Parkinson's dis-
ease? 2011-2013. (Continuation)

European Union Collaborative Project

Professor O El-Agnaf
Collaborative project MEFOPA
FP7-HEALTH-2009 (EU FP7). Euro-
pean Project on Mendelian Forms
of Parkinson's Disease. 2010-2013.
(Continuation)



2012

Biochemistry



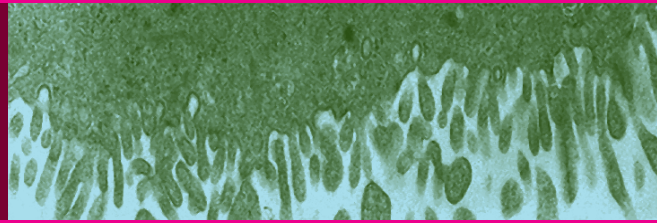
Standing left to right:

*M Qureishi, TV Basheer, JM Conlon,
H Raza, S Galadari, OMA El-Agnaf,
A Qader, AH Al-Marzouqi*

Seated left to right:

*M Patel, C Jisha, M Mechkarska, F
Mustafa, M Hashem, M Fernandez-
Cabezudo, A John*

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. In 2011, new studies on cultural sensitivities in breaking bad news to patients and on online health education were initiated opening additional related areas of enquiry and subsequent grant proposals. 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.

Chair & Associate Professor:

Dr EAM Prinsloo

Associate Professor:

Dr SC Major

Assistant Professor:

Dr MJ Hashim

Dr U Lashari

Medical Research Specialist:

Ms H Mustafa

Medical Research Technician:

Mr J Cherian

Faculty Profile

Adri Prinsloo is an Associate Professor who is an International member of the Editorial Board of the South African Family Practice Journal and a frequent reviewer of articles for the African Journal of Primary Healthcare & Family Medicine and Southern African Journal of Epidemiology and Infection. She acts as external assessor for a postgraduate student from the University of the Free State South Africa and also as supervisor of Family Medicine residents for research projects as part of their post graduate study.

Stella Major is an Associate Professor in FM at UAEU as well as an Honorary Senior Lecturer at Imperial College London. She has been an external assessor for postgraduate students at Impe-

rial College, London. Much of her time at UAEU has been invested in developing and leading an integrated Clinical Skills Course for pre-clinical students. Her research interests include teaching communication skills across different cultures (with special emphasis on breaking bad news in the Arab Culture), and is co-worker on a global project which looks at what it is to be an international medical educator.

Jawad Hashim is an Assistant Professor with research interests in health systems improvement, health promotion, and medical informatics. His recently completed projects focused on chronic disease care practices in the region, the interpretation of healthcare navigation symbols and learning of communications skills in a second language by medical students. He has also contributed a book chapter in a family medicine handbook. Dr Hashim peer reviews research studies from regional and international journals including Sultan Qaboos University Medical Journal and the Annals of Family Medicine.

Usman Lashari is an Assistant Professor and coordinator 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.

Faculty Research Profile

Engela Prinsloo is exploring the use of reflective portfolios, tutor support and feedback to students in a family medicine clerkship as well as the use of portfolios and mentorship in residency training. She is also involved in a study exploring attitudes and perceptions towards tuberculosis in Al Ain in United Arab Emirates. A study on the prevalence of vitamin D deficiency and factors influencing vitamin D and calcium levels is in progress.

Stella Major together with other members from other departments is investigating Emirati medical students' perceptions on how bad news is broken to patients. She has recently contributed to three chapters in a new textbook of General Practice "*General Practice at a Glance*" with her colleagues from Imperial College, London. Together with Professor Tar-Ching Aw, Stella has written an article which discusses

occupational medicine tests and their impact on GPs. This article served as an on-line CME module for GPs, and has most recently been published as an article in the handbook of the Faculty of Occupational Medicine of the Royal College of Physicians.

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. He recently conducted a needs assessment of clinical decision support for medical education settings such as at teaching hospitals. While most commercial electronic health record systems cater to improving physician productivity, little research has been done to support teaching and learning in the context of increasing availability of electronic resources in healthcare. 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 University as well as at Tawam and Al Ain hospitals.

Usman Lashari has recently joined UAEU in March 2012. His main areas of interest are Postgraduate Medical Education and Dermatology in Primary Care. He is currently writing two books and is involved in various research projects.

Research Profile

The current research focus of members in the department address pertinent health concerns of the UAEU population including vitamin D deficiency and risk of ignorance regarding communicable diseases like tuberculosis. Impact of the changes in the health care industry with use of electronic medical record system is explored and alternatives in decision making tools for health care providers aiming to improve quality of care are addressed. Professionalism and

sensitizing medical students about the need of continued medical education are objectives of the ongoing portfolio research project. Studies initiated in 2011 on cultural sensitivities in breaking bad news to patients and 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:

Patient-Physician Communication

Drs. Stella Major, Leena Amiri and Jawad Hashim have been looking at Emirati medical students' perceptions on how they think bad news should be delivered to patients in this cultural setting. The research team is responsible for the development and teaching of the components in the Clinical Skills course which address "Delivering bad news" into the undergraduate curriculum. They intend to use themes emerging from these discussions into the new more culturally adjusted breaking bad news' curriculum.

On being an International Medical Educator-Profile from the Middle East

In an article on the internationalization of medical education Ron Harden (2006), described the different teaching contexts (local vs. international) with respect to students and teachers. That author contends that the trend in medical education is towards the international teacher and international student scenario. While much has been written about the international student (e.g. Asian students in the UK or Australia), little has been documented about the international teacher.

Dr Stella Major in collaboration with Prof. Michelle McLean and Prof. Judy McKimm are conducting an international study which is a qualitative survey that explores the perceptions and experiences of international medical educators in different settings. This project has commenced in the Middle East; United Arab Emirates, at the FMHS where a number of faculty members are expatriates recruited from around the world, while students are locals (Emiratis). This study aims to collect data from a sample of male and female expatriate FMHS teachers to gain insight into the challenges, expectations and rewards afforded by choosing to become international teachers.

The following research questions frame the study:

1. Why medical teachers do chose to teach outside their home country?
2. What difficulties do international teachers experience?
3. Are there differences between male and female teachers in this regard?
4. How do they cope with these difficulties?
5. Are there particular attributes and qualities required to be an international teacher?
6. Are the experiences as an international teacher different in the Middle East compared with, for example, an international teacher in the US or UK?

Results

Varied reasons for choosing an international career (e.g. by invitation, career break/opportunity, spouse career, political and employment considerations in home country).

There is a need to be sensitive to and accommodating of local cultural, and to some extent, ethical issues, (e.g. broader limits of confidentiality, gender and family members' roles in the society, issues of who has consent for treatment). Some educators questioned the suitability of transposing Western professional and ethical values in a different cultural and social context.

For Western, non-Arabic-speaking expatriates, language barriers (e.g. patient consultation) and religion and/or cultural constraints (e.g. cross-gender consultations) required special consideration.

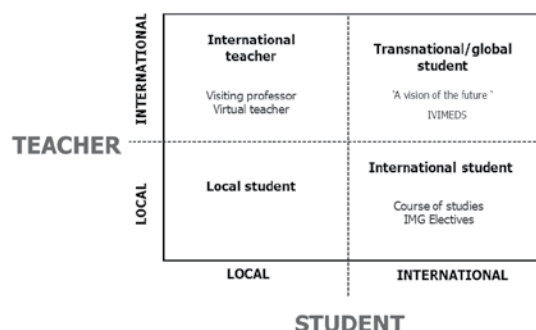
Gender-segregated and cross-gender teaching required adaptation (e.g. shaking hands, physical contact, restrictions on female student travel, teaching administration).

Personal challenges revolved around family issues (e.g. social isolation, raising children in a different cultural context) while professional challenges related to their careers (e.g. remaining licensed in home country, integrating back into home context).

Being an international educator had enhanced one's ability to be more tolerant, less judgmental and more flexible. The experience allowed individuals to identify limits and boundaries in terms of what they were prepared to compromise.

Interacting with international colleagues from diverse backgrounds was stimulating, provided opportunities for collaboration, networking and broadened their perspectives of different educational systems and cultural backgrounds.

Respondents described the benefits (personal, for students, institutional) of being an international medical educator



Recommendations

Those surveyed would advise educators planning to work outside their home country to familiarize themselves with the host country's local language, culture and religion prior to arrival. They also recommended that hosting institutions provide orientation for all new international teachers.

Next step

The survey will now be implemented in one Middle East medical college and then across different cultural contexts.

Interactive electronic portfolios to enhance students' reflective practice

A four cycle reflective 'plan, act, revise,' action research study involving faculty and students on reflective portfolios were due for completion in August 2012. Interviews with faculty and final data analysis are outstanding for completion of the study.

Due to identified frustration with functionality and duplication with the format of the online portfolio, and the need to increase interactivity in the portfolio, the format changed from black-board to a web based portfolio and finally back to the black board using the blog feature as part of the online portfolio.

Research and Academic Collaboration

Dr Adri 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, Acta Academica South Africa and Southern African Journal of Epidemiology and Infection. During the past year she has reviewed 7 articles for publication in these journals in 2012.

Dr Stella Major is an Honorary Senior Lecturer at Imperial College London. She has recently currently contributed to three chapters in a new textbook of General Practice "General Practice at a Glance" with her colleagues from Imperial College, London.

Together with Professor Tar-Ching Aw, Stella has written an article which discusses occupational medicine tests and their impact on GPs. This article served as an on-line CME module for GPs, and has most recently been published as an article in the handbook of the Faculty of Occupational Medicine of the Royal College of Physicians.



Articles in Peer-reviewed Journals

George S, Hashim MJ, Al Be-looshi MHS, Al Hebsi RS, Bloushi AA, Balfaqeeh SA, et al. (2012). Mismatch between Arab women's preferences and options offered for treatment of stress urinary incontinence in the United Arab Emirates. *East. Mediterr. Health J*, 18(10):1060–1064.



Books, Chapters, Reviews and Editorials

Aw TC, Major S (2012). Pulse article which was submitted as a CME activity for GP's in the UK. Pulse Publication.
<http://www.pulse-learning.co.uk/clinical-modules/respiratory-medicine/occupational-health-investigations-cpd-module>

Major S. General Practice at a Glance. (3 chapters written)
<http://www.amazon.co.uk/General-Practice-at-Glance-Booton/dp/0470655518>

Major S. (in press 2013). On being an International Medical Educator. Medical Education: Global Perspectives, Challenges and Future Directions
Nova Publications.



Published Abstracts, Letters and Correspondence

Mirza D. (2011). Adapting clinical skills training to an Arabian Gulf setting. *International Journal of Clinical Skills*. Volume 5, Issue 2



Proceedings, Conferences, Invited Lectures, Web Sites and Others

Hashim J. (2012). Clinical Decision Support for Medical Teaching: A Needs Assessment of Academic Faculty Physicians. The 4th Annual SEHA Research Conference, Abu Dhabi.

Lashari U. (2012). Critical Review of RCGP's E-Portfolio. RCGP Annual Conference.

Major S, Amiri L, Hashim J, Nasir L, Abdul-Haq A. (2011). Emirati medical student's perspectives on delivering bad news to patients in the local setting: the hidden curriculum. SEHA Conference.

McLean M, Major S, Mckimm J. (2012). On being an international educator: A pilot study of the Middle East experience. APMEC: Asia Pacific Medical Education conference.

Prinsloo E, Major S, Hashim J, McLean M. (2012). Assessing portfolios to enhance a learner centered ethos. SAAFP: 15th National Family Practitioners Conference, Cape Town.

Prinsloo E, Joubert G, Struwig M. (2012). Prevalence and perceptions of obesity in Women consulting in a primary health care clinic serving a disadvantaged community. SAAFP: 15th National Family Practitioners Conference, Cape Town.

Prinsloo E, Al khatir F, Al Neami M, Al Mesmari S, Blair I, Shafiga O. (2012). Knowledge, attitude and practices of the General population in a UAE city of Mycobacterium Tuberculosis. SAAFP: 15th National Family Practitioners Conference, Cape Town.

Prinsloo E, Major S, Hashim J, McLean M. (2012). On-line reflective portfolio in a changing health care environment - from face to face teaching to assisted and self

directed student centered ethos. Association of Medical Education (AMEE) - Lyon France .

Prinsloo E, Major S, Hashim J, McLean M. (2012). Assessing portfolios in a hybrid Family medicine clerkship to enhance a learner centered ethos. Rendez-vous Conference in Thunder Bay, Ontario, Canada

Sudhir M, Major M, Al Dhanhani A, Karam S. (2012). Mapping and mentoring: a longitudinal approach for developing professionalism among medical students attending Clinical Skills Course - experiences from the United Arab Emirates University. (AMEE), Lyon – France.



RESEARCH GRANTS

CMHS Research Grants

Dr MJ Hashim (PI)
Optimal interface for electronic health record systems for regional needs – a novel bilingual design.

Dr U Lashari (PI)
Time to ask the shisha question in UAE: comparison of shisha and cigarette tobacco.



2012

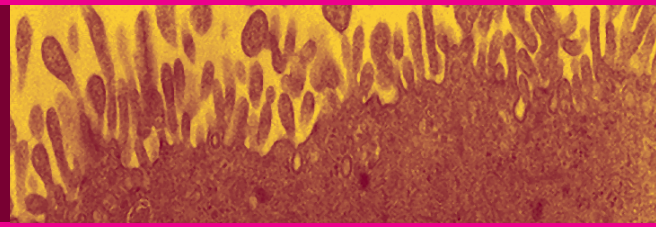
Family Medicine



*Standing left to right:
J Cherian, U Lashari, MJ Hashim,
Seated left to right:
S Major, EA Prinsloo, H Mustafa*

www.cmhs.uaeu.ac.ae/FamilyMedicine Tel: +971 3 7672000 Fax: +971 3 71372022

Institute of Public Health



Research Profile

*Associate Professor, Acting
Department Chair:*

Dr I Blair*

Professor:

Prof T-C Aw**

Prof N Nagelkerke

Associate Professor:

Dr F Al-Maskari

Dr M Grivna

Dr S Shah

Dr M Sheek-Hussein

Assistant Professor:

Dr R Ali

Dr D Handysides

Dr T Loney

Dr J Schneider

Medical Research Specialist:

Ms R Kurdi

Ms I Elbarazi***

Academic Assistant:

Dr M El Sadig

Medical Secretary:

Ms A Kaljee

Administrative Assistant:

Mr Hisham Hassan

Office Assistant:

Mr M Jamal****

In 2012, the Department of Community Medicine (renamed Institute of Public Health in June 2012) continued to build on our good track record in research, and on developing global links with international academic colleagues. Research successes of the Institute 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 our staff.

Dr Blair expanded the activities of Zayed Center for Health Sciences to include a regular series of seminars by distinguished visitors. One of the main highlights was a seminar by Professor Sir Richard Feachem, Director of the Global Health Group at UCSF Global Health Sciences and Professor of Global Health at the University of California, San Francisco and Berkeley, who spoke on "Shrinking the Malaria Map: 1900 to 2025". Other highlights included a seminar by Prof Joan Ozanne-Smith from Monash University on "Injury Prevention and Consumer Products Safety: An Australian Experience" and a Seminar by Prof. Lawrence Beeson from Loma Linda University in the USA on "Living Longer and Better".

Professor Nico Nagelkerke continues to receive requests from colleagues within the College of Medicine and external organisations and other agencies for statistical support and advice. There was an increase in the number of in-house and external courses on statistics and epidemiology delivered in 2012. This follows the launch of masters and doctoral level degrees by other College departments requiring modules on research methods, critical appraisal, and biostatistics.

The Occupational Medicine Research Group (OMRG) continued to develop their research and educational activities both in the UAE and internationally. Research successes include the publica-

* Acting Chair of the Institute of Public Health since 5 June 2012

** Chair of the former Department of Community Medicine until 4 June 2012 and Interim Dean of CMHS since 5 June 2012

*** Joined on 27 February 2012

**** Departed on 16 October 2012

Zayed Center for Health Sciences Seminar on Shrinking the Malaria Map

(December 2012) with left to right: Dr Ahmed Abdalla, Dr Mohamed El Sadig, Prof Sir Richard Feachem, Dr Mohamud Sheek-Hussein, Dr Iain Blair, Prof Nagi Wakim and Dr Amer Sharif.



tion of several articles in peer-reviewed scientific and medical journals and the delivery of presentations at local, regional and international conferences including the 30th International Commission on Occupational Health Congress (Mexico), the American Industrial Hygiene Association Annual Conference and Exhibition (United States) and the Australasian Faculty of Occupational and Environmental Medicine Annual Scientific Meeting (Australia).

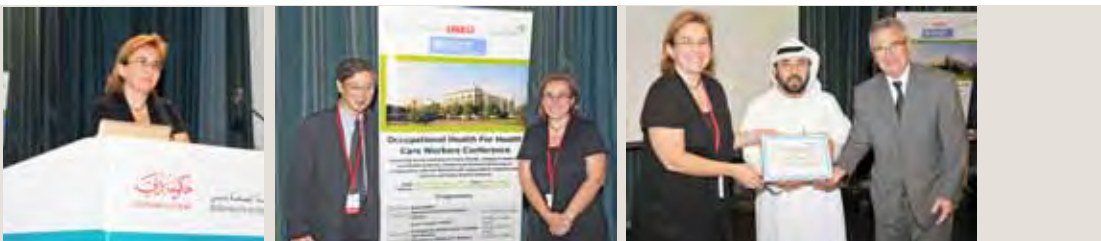
The primary goal of the OMRG over the next two years is to become designated as a World Health Organization Collaborating Centre for Occupational Health with the remit of building occupational health capacity within the UAE and Middle East region. To this end OMRG organized two one-day occupational health conferences during 2012: (1) "Occupational Health for Health Care Workers" in collaboration with the Dubai Health Authority, and (2) "Occupational Diseases" in collaboration with the Health Authority of Abu Dhabi. International distinguished speakers included Dr Muge Akpinar-Elci, Director of the World Health Organization Collaborating Centre for Occupational Health at Saint George's University in Grenada, Dr Ivan Ivanov, an occupational health scientist from the World Health organization in Switzerland, and Dr Anil Adisesh, Deputy Chief Medical Officer in the Centre for Workplace Health at

the Health and Safety Laboratory in the United Kingdom.

Demand for training in occupational medicine has continued to grow in the UAE following the designation of the CMHS as an overseas exam centre for the Faculty of Occupational Medicine (FOM), Royal College of Physicians of Ireland. The OMRG organised two videoconferences with the FOM and conducted several training courses on aspects of occupational health during the year. These activities attracted participants from all over the region (UAE, Bahrain, Oman, Qatar, Saudi Arabia) and beyond (Australia, India, Nigeria, Pakistan). The 3rd conferment ceremony of the FOM in the UAE was held in Al Ain in May, 2012 for new licentiates, members, and fellows.

International links were strengthened following the signing of a Memorandum of Understanding (MoU) with the National University of Malaysia. This adds to previous MoUs signed with the University of Malaya, the FOM (Ireland), and locally with health authorities (Abu Dhabi and Dubai) and health care providers (SEHA). The international MoUs have led to an exchange of staff and students, participation as external examiners, and delivery of training. Following the MoUs, medical students have had elective postings in Dublin and in Kuala Lumpur.

The research efforts of our department are supported by our research officers and administrative staff. They are an integral part of the research teams, and provide help with logistical and procedural aspects of research projects including ethical clearance, translation, recruitment and training of investigators, and links with government departments. The Institute of Public Health acknowledges their support.



The Occupational Health for Health Care Workers Conference in Dubai (November 2012) with keynote speaker Dr Muge Akpinar-Elci.



The Occupational Diseases Conference in Abu Dhabi (November 2012) with keynote speakers H.E. Dr Mahmoud Fikri (left; UAE Ministry of Health), Dr Anil Adisesh (middle left), Dr Ivan Ivanov (middle right) and Dr Ali Alili (right; UAE Ministry of Labour).

RESEARCH INTERESTS OF FACULTY AND STAFF

Prof Tar-Ching Aw: US-Board certified in occupational medicine. He has a special interest in occupational toxicology, occupational risks to health-care workers, and training and education. Professor Aw is a member of the International Advisory board for several journals, including 'Occupational Medicine (Oxford Journals)', and 'Safety and Health at Work'. He is also a member of the UK Health and Safety Executive's working group on action to control chemicals (WATCH).

Prof Nico Nagelkerke: Senior biostatistician with a special interest in statistical methodology and infectious disease modeling. Prof Nagelkerke has provided input in biostatistics to several projects which resulted in peer reviewed publications during 2011.

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. Dr Al-Maskari is one of the investigators collaborating with the Gillings School of Public Health at the University of North Carolina, Chapel Hill (UNC) and the Environment Agency of UAE in developing a National Strategy for Environment & Health in the UAE.

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 Raghieb Ali: Clinical epidemiologist with research interests in the epidemiology of non-communicable diseases (particularly cancer), clinical trials, and global health.

Dr Daniel Handysides: Health educator trained at Loma Linda University, specializing in behavior change and risk perceptions. He has a strong background in program development and evaluation. His research interests surround high risk behaviors and the perceptions individuals hold towards health. Currently he is working in partnership with UAEU and the International Commission for the Prevention of Alcoholism and Drug Dependency (ICPA) on smoking issues within UAE.



The 3rd Conferment ceremony for new members of the Faculty of Occupational Medicine, Royal College of Physicians (Ireland), Al-Ain, May 2012.

Dr Tom Loney: Occupational and environmental health scientist with a special interest in human performance optimization of personnel employed in challenging environments, exercise prescription for public health, and measurement issues related to human physiological monitoring.

Dr John Schneider: Occupational health physician. His main research interests are occupational rehabilitation, organization and planning of occupational health services in rural and remote work sites, work in hot environments, and impairment assessment at the workplace.

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.

Ms Rana Kurdi: Research specialist in basic science and public health research with a Masters degree in Public Health, Epidemiology and Biostatistics.

Articles in Peer-reviewed Journals

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- Abouchacra S, Chaaban A, Gebran N, Hussein Q, Ahmed M, Bernieh B, Torab F, Kayyal Y, Al Omary H, Nagelkerke N. (2012). GFR estimation in the morbidly obese pre- and postbariatric surgery: one size does not fit all. *Int Urol Nephrol*, Mar 3.
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Books, Chapters, Reviews and Editorials

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Nagelkerke NJD. (2012). *Courtesans and Consumption: How sexually transmitted infections drive tuberculosis epidemics*. Eburon, Delft. ISBN 978-9059726031

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Published Abstracts, Letters and Correspondence

Al Dhaheri F, Al Jaber N, Al Eisaei S, Al Shehhi N, Al Shamisi S, Al Hamez M, Walid F, Yousef S, Shah

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Finlayson A, Ali R. (2012). Research Capacity Building in India: Lessons learned in network coordination, research capacity building and research with the INDOX research network. *American Society of Tropical Medicine and Hygiene*, 2012.

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Shah SM, Al Maskari F, Hashim J, Aw TC, AlKaabi J. (2012). Hypertension control status in adult diabetics in Al Ain, UAE. *Diabetes Care*, 9(4 Supplement):12-OR.

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Proceedings, Conferences, Invited Lectures,

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Al Maskari F, Shah SM, Hashim J, Aw TC, Al Kaabi J. (2012). Prevalence and Risk Factors for Type 2 Diabetes in Native Emirati and Immigrant Arab Population in UAE. *First American Diabetes Association Middle East Congress*, Dec 4-6, Dubai, UAE.

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Ali, R. (2012). Building the required capacity for clinical trials in the MENA region. *1st Clinical Trials MENA Conference*, Dubai, October 2012.

Ali, R. (2012). Smoking Midwakh in the United Arab Emirates. *Richard Doll Centenary Meeting*, University of Oxford. UK, October 2012.

Aw TC, Loney T, Handysides D, Ali R et al. (2012). Report to The National Research Foundation (NRF), An analysis of the health status of the UAE. *Al-Ain: FMHS, UAEU*, 2012.

Aw TC. (2012). A multidisciplinary approach to occupational health. Invited presentation at *IOSH Middle East Annual Conference* Muscat, Oman, Apr 25, 2012.

Aw TC. (2012). Occupational asthma. Invited presentation at *HAAD Asthma management standards and updates* Al-Ain, UAE, Oct 6, 2012.

Aw TC. (2012). Occupational health challenges, priorities and suggested standards for accrediting hospitals and other healthcare facilities. Invited presentation at *WHO sub-regional workshop on Occupational and environmental health standards*. Doha, Qatar. Dec 9-11, 2012.

Aw TC. (2012). Occupational health issues in healthcare. Invited presentation at *UAEU-WHO Col-*

laborating Centre: Conference on healthcare workers, Dubai, UAE, Nov 6, 2012.

Blair I, Grivna M. (2012). Introduction of a new modular Master of Public Health (MPH) programme in the United Arab Emirates. 1st Qatar Medical Education Conference 2012: Improving Quality of Care through Medical Education, Doha, Qatar, January 20-22, 2012.

El-Sadig M. (2012). Public Health and Safety Priorities in Libya Post the War. International conference on Challenges in Managing Serious Emergencies in Remote and Hostile Environments organized by the Institute of Remote Health Care (IRHC) in association with the Royal College of Physicians and Surgeons of Glasgow, in Aberdeen on May 17, 2012.

El-Sadig M. (2012). The Economic Costs of Road Traffic Accidents in the UAE. Middle East Navigator Conference organized by the International Academies of Emergency Dispatch systems in Doha, Qatar, 31st January-2nd February 2012.

Finlayson A, Barnes I, Ali R. (2012). Incidence of thyroid cancer incidence by ethnic group in England, 2001 – 2007. UKACR/NCIN conference, U.K, 2012.

Grivna M, Kershaw G, Barss P. (2012). A Health Promotion project using self-directed learning as an introduction to health and prevention. 1st Qatar Medical Education Conference. Improving quality of care through Medical Education, 21-22.1.2012.

Grivna M, Shah S, El-Sadig M, Sharif A, Abu-Zidan F. (2012). Child safety efforts in the United Arab Emirates. 6th Asian Regional Conference on Safe Communities in Toshima, Japan, 28.11.-30.11.2012.

Grivna M. (2012). Principles of injury prevention. 8th Middle-East Trauma Conference, Abu Dhabi, 14-16.10.2012.

Loney T, Aw TC, Handysides D, Ali R, Blair I, Grivna M, Shah S, Sheek-

Hussein M, El-Sadig M, Sharif A, El-Obeid Y. (2012). An Analysis of the Health Status of the UAE: The 'Big 4' Public Health Issues. The International Conference on Global Public Health 2012, Colombo, Sri Lanka, 3-4 December 2012.

Loney T, Carter JM, Linnane DM. (2012). The Active Workplace Programme: An initiative to increase physical activity in office-based employees. The Society of Petroleum Engineers Middle East Health, Safety, Security, and Environment Conference and Exhibition, Abu Dhabi, United Arab Emirates, April 02-04, 2012.

Loney T, Carter JM, Scullion LJ, Nicholson GF, Al Shehhi M. (2012). Urine color is an effective biomarker for self-monitoring hydration status in Army Cadets from the United Arab Emirates. The American Industrial Hygiene Conference and Expo, Indianapolis, United States, June 16-21, 2012.

Loney T, Micallef-Stafrace K, Carter JM, Al Shehhi M. (2012). Application of the paediatric gait, arms, legs, spine musculoskeletal screening examination in adolescent army cadets from the United Arab Emirates. XXXII World Congress of Sports Medicine, Rome, Italy, September 27-30, 2012.

Loney T. (2012). Creating a NEAT Workplace: Initiatives to Increase Occupational Physical Activity and Enhance Employee Health. 4th ENOC International Occupational Health Conference, Dubai United Arab Emirates, November 18-19, 2012.

Loney T. (2012). Exercise & Health in the Female Athlete: Female Athlete Triad. The 1st Sports Medicine Conference at the Abu Dhabi Medical Congress, Abu Dhabi, UAE, October 14, 2012.

Loney T. (2012). Exercise Prescription for the Prevention of Cardiovascular Disease. The 2nd Family Medicine Conference at the Abu Dhabi Medical Congress, Abu Dhabi, UAE, October 14, 2012.

Loney T. (2012). Suffering in Silence? Health Implications of Noise Exposure in the Workplace. The Institution of Occupational Safety and Health UAE Conference, Dubai, United Arab Emirates, December 13, 2012.

Micallef-Stafrace K, Loney T, Al Shehhi M. (2012). Use of the Orchard Sports Injury Classification System (OSICS) Version 10.1 within a military sports medicine clinic. XXXII World Congress of Sports Medicine, Rome, Italy, September 27-30, 2012.

Schneider JD, Aw TC, Joubert D. (2012). Research findings to action: prevention of heat stress in hot climates. 30th International Congress on Occupational Health, Cancun, Mexico, March 2012.

Schneider JD, Blair I, Sheek-Hussein M, Nagelkerke N, Shaban S. (2012). A Survey of Expatriate Working Conditions in the United Arab Emirates. 30th International Congress on Occupational Health, Cancun, Mexico, March 2012.

Schneider JD, Blair I, Sheek-Hussein M, Nagelkerke N, Shaban S. (2012). Indian Workers in the United Arab Emirates. 62nd Annual National Conference of Indian Association of Occupational Health, New Delhi, India, February 2012.

Schneider JD. (2012). A Survey of Male Expatriate Workers in the United Arab Emirates. RACP Future Directions in Health Congress, Brisbane, Australia, 7 May 2012.

Schneider JD. (2012). Office Ergonomics Update. 4th International Occupational Health Conference, ENOC, Dubai, UAE, 19 November 2012.

Shah SM, Al Maskari F, Hashim J, Aw TC, Al Kaabi J. (2012). Hypertension Control Status in Adult Diabetics in Al Ain, United Arab Emirates. First American Diabetes Association Middle East Congress, Dec 4-6, Dubai, UAE.

Shah SM, Hashim J, Al Maskari F, Aw TC, Ahmed A. (2012). Diabetes

Prevalence, Awareness and Control in a Population-Based Sample in Al Ain, United Arab Emirates. First American Diabetes Association Middle East Congress, Dec 4-6, Dubai, UAE.



RESEARCH GRANTS

CMHS Research Grant

Drs Ragib Ali [PI], C Platat. Risk factors for colorectal cancer in the UAE and GCC: A case-control study.

Dr M Sheek-Hussein [PI]. Assessment of Immunization Status of Vaccine-Preventable Diseases for Cohort Medical Students at College of Medicine and Health Sciences.

Sheikh Hamdan Award for Medical Sciences

Drs Ragib Ali R [PI], C Platat. Risk factors for breast cancer in the UAE: a case control study.

National Research Foundation Grant

Prof TC Aw [PI], Drs I Blair, S Shah, M Grivna, T Loney, D Handysides, Raghieb Ali, M Sheek-Hussein, M El-Sadig. An analysis of the health status of the UAE.

Drs SM Shah (PI), A Farooqi, F Al Maskari, J Kaabi, A Sharif, L Marzouqi. Prevention of type 2 diabetes through population-based strategies: a randomized controlled trial.

National Rehabilitation Centre

Prof TC Aw [PI], Drs OT Ossama, I Blair, T Zoubeidi. Drug and alcohol addiction awareness in the UAE.

Prof TC Aw [PI]. Health promotion and tobacco control in the UAE. International Commission for the Prevention of Alcoholism and Drug Dependency (ICPA).

International Diabetes Federation

Drs SM Shah (PI), A Ahmed, A Sidiga, Prof N Nagelkerke, Drs M Shah, N Jahan. (2012). Bringing knowledge-to-practice gap to control diabetes in rural population. BRIDGES.

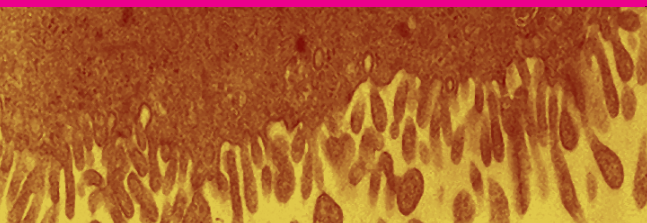


2012

Institute of Public Health



Standing from left to right:
S Shah, A Kaljee, M Grivna,
D Handysides, M Sheek-Hussein,
R Ali, M El-Sadig, N Nagelkerke,
T Loney, M Hassan, J Schneider,
Seated left to right:
R A Thomas, I El Barazi, R Kurdi,
I Blair, T-C Aw, S Handysides,
F Al-Maskari, S Yousif
Absent:
A Sharif



Department of Internal Medicine

Research Profile

Professor and Chair:

Prof S Gariballa

Professor:

Prof J Braun

Prof E E Kazzam

Associate Professor:

Dr J Alkaabi

Dr S Al-Suwaidi

Dr O Bakoush

Dr S Denic

Dr I Hassan

Dr A Shehab

Assistant Professor:

Dr A Al Dhanhani

Dr A Al-Fazari

Dr M Al Houqani

Dr S Alkaram

Dr S Al-Shamsi

Dr H Galadari

Teaching Assistant:

Dr F Al-Shamsi

Medical Research Specialist I:

Dr B Al-Dabbagh

Medical Research Specialist II:

Dr A M Abdulle

Mr J Yasin

Medical Research Assistant:

Ms I Abdur-Rahman

Ms J Oz

Research Nurse:

Mr A Al Essa

Administrative Assistant:

Mr H Hassan

Medical Secretary:

Ms S Ogilvie

Secretary:

Ms R John

This Department has been highly active in the three fields of Teaching, Research and Clinical Services through 2012.

Below are some of the activities of the Department in 2012:

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.

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. He is the lead clinical investigator and member of the technical committee in the study of "Nutrition and Water and their Possible Role in Chronic Diseases" funded by the Abu Dhabi Emirate Executive Council.

Professor Johann Sebastian Braun, MD.

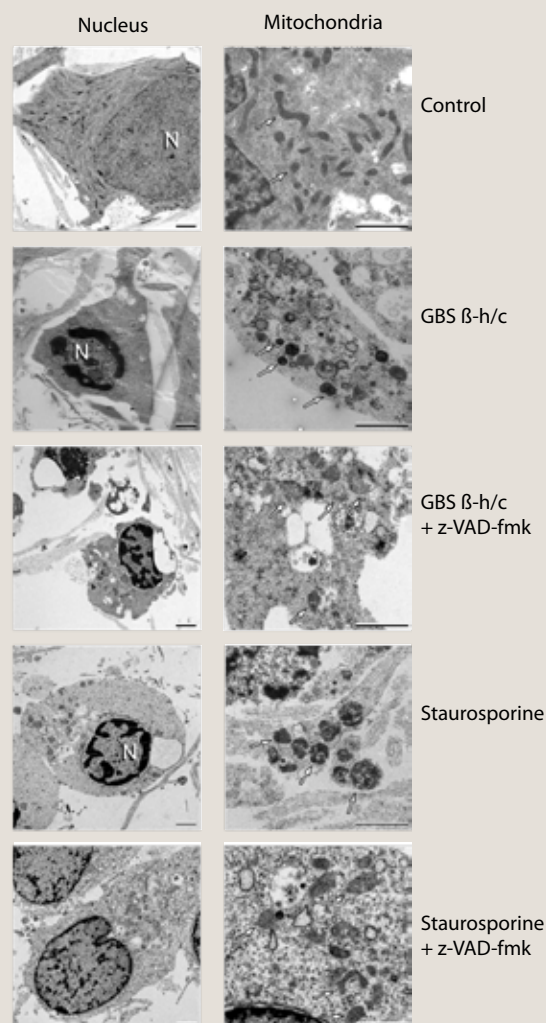
Consultant Neurologist. His research focuses on neuronal damage and neuroprotection. His main interest is the pathophysiology of neuronal injury in stroke and bacterial meningitis. His recent results: bacterial cytolysins induce neuronal damage in neonatal meningitis, cerebral vasospasm and hyperperfusion in eclampsia, ecto-5'-nucleotidase-positive cells in the eye, and how to change stroke therapy strategy 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.

Dr Srdjan Denic, MD. Consultant Physician and Hematologist-Oncologist. His research focuses on common inherited blood disorders and human inbreeding. His recent finding is that tribalism contributes to the burden of β -thalassemia disease more than consanguinity per se. He has produced new reference standards for red cells and neutrophils for Emirati populations. In his



Electron micrographs showing nuclei (N) and mitochondria (arrows) of neurons treated with either Group B *Streptococcus* β -h/c (0.1 hemolytic units/ μ L) or staurosporine (STS) (0.5 μ M/ μ L) as a positive control. The broad spectrum caspase-inhibitor z-VAD-fmk failed to prevent neurons from hemolysin-induced apoptosis but protected - in part - from STS-induced apoptosis. Apoptotic neurons show shrunken nuclei with marginalized and condensed chromatin and in part blebbing of the nuclear membrane as well as swollen and destroyed mitochondria (arrows). Bars = 1 μ m. Published and provided by Prof. Braun.

studies of kin marriages he has found that such unions 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, Haematologist and Haematopathologist. Her research interest is in benign haematology and acute and chronic leukaemia.

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

Dr B Al-Dabbagh (Medical Research Specialist

I), **Dr A M Abdulle** (Medical Research Specialist II) 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 J Oz, Ms I Abdur-Rahman and Ms R Safeldin recently joined the Department to support cardiovascular, epidemiology and nutrition research respectively.

Ms Sheena Ogilvie and Ms Reena John 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 below are some examples:

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

Articles in Peer-reviewed Journals

Adrian TE, Gariballa S, Parekh KA, Thomas SA, Saadi H, Al Kaabi J, Nagelkerke N, Gedulin B, Young AA. (2012). Rectal taurocholate increases L cell and insulin secretion, and decreases blood glucose and food intake in obese type 2 diabetic volunteers. *Diabetologia* 55(9); 2343-2347.

Alanbaei M, Zubaid M, Al-Mallah MH, Rashed WA, Shehab A, Al-Lawati J, Chb M, Amin H, Al Suwaidi J, Al-Hamdan R, Zubair S. (2012). Impact of diabetes and smoking epidemic in the Middle East on the presentation with acute coronary syndrome in very young patients. *Angiology* 63(1); 48-54.

Al-Houqani M, Ali R, Hajat C. (2012). Tobacco smoking using midwakh is an emerging health problem - evidence from a large cross-sectional survey in the United Arab Emirates. *PLoS ONE* 7(6):e39189.[cited Jul 29].

Ali MA, Adem A, Chandranath IS, Benedict S, Pathan JY, Nagelkerke N, Nyberg F, Lewis LK, Yandle TG, Nicholls GM, Frampton CM, Kazzam E. (2012). Responses to dehydration in the one-humped camel and effects of blocking the renin-angiotensin system. *PLoS One* 7(5):e37299..

Braun JS, Krause M, Bohner G, Roehl JE, Schreiber SJ. (2012). Serial multimodal monitoring of cerebral manifestations in eclampsia and comparison with normal pregnancy - a clinical study. *Journal of Neurology*. DOI 10.1007/s00415-012-6794.

Carlsson MC, Balog CIA, Kilsgård O, Hellmark T, Bakoush O, Segelmark M, Fernö M, Olsson H, Malmström J, Wuhler M, Leffler H. (2012). Different fractions of human serum glycoproteins bind galectin-1 or galectin-8, and their ratio may provide a refined biomarker for pathophysiological conditions in cancer and inflammatory disease. *Biochemistry and Biophysics Acta* 1820(9); 1366-1372.

Denic S, Agarwal MM. (2012). A family that climbed out of inbreeding depression. *International Journal of Collaborative Research on Internal Medicine and Public Health* 4; 1063-1068.

Denic S, Agarwal MM, Nagelkerke N. (2012). Growth of consanguineous populations: effect of family and groups size. *Asia and Pacific Journal of Tropical Diseases* 2; S227-S232.

Fahim MA, Nemmar A, Dhanasekaran S, Singh S, Shafullah M, Yasin J, Zia S, Hasan MY. (2012). Acute cadmium exposure causes systemic and thromboembolic events in mice. *Physiol Res* 61(1); 73-80.

Gariballa SE, Forster SJ, Powers HJ. (2012). Effects of Mixed Dietary Supplements on Total Plasma Homocysteine Concentrations (tHcy): A Randomized, Double-Blind, Placebo-Controlled Trial. *International Journal for Vitamin and Nutrition Research* 82(4); 260-266.

Gariballa S. (2012). Fruits & vegetables in prevention & treatment of diabetes. The 17th Annual Conference on Diabetes Mellitus & Endocrine Disorders.

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RESEARCH GRANTS:

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Dr M Al-Houqani [PI]. The prevalence of obstructive sleep apnea among UAE national with type 2 diabetes. Seed research grant, UAEU. (2011-2012).

Dr A Al Fazari [PI] [co-investigators: Dr B Al-Dabbagh]. Study on hepatocyte and myocyte toxicities of the lipid lowering agents

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Dr O Bakoush [PI]. The glomerular functional changes in diabetic diseases: An experimental approach. CMHS Research Grants. (2012).

Professor S Gariballa [PI]. [co-investigators: Mr J Yasin, Dr A Habiba]. Antioxidants intake, capacity and oxidative damage in obese diabetic UAE citizens: a cross-sectional study. CMHS Research Grants. (2012).

UAEU National Research Foundation Grants

Professor S Gariballa & Dr J Alkaabi. Oxidative damage and antioxidant capacity in obese diabetic and non-diabetic UAE citizens: a randomised controlled study. National Research Foundation, UAEU. (2012-2015).



2012

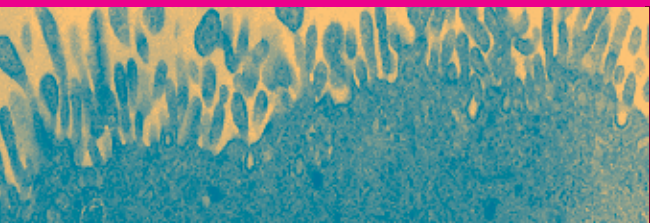
Internal Medicine



Back row, left to right:
Mr J Yasin, Dr A Al Dhanhani, Dr J Alkaabi, Dr S Al-Shamsi, Dr S Denic, Dr M Al Houqani, Dr A Al Fazari, Dr A Shehab, Dr O Bakoush, Mr Abubaker, Mr M Joynal, Dr S Alkaram.

Front row, left to right:
Ms I Abdur-Rahman, Dr B Al-Dabbagh, Dr I Hassan, Dr S Al-Suwaidi, Professor S Gariballa, Ms S Ogilvie, Ms J Oz, Ms R John, Professor J Braun, Dr A M Abdulle.

Not in the picture:
Professor EE Kazzam, Dr H Galadari, Dr F Al-Shamsi, Mr A Al Essa, Mr H Hassan



Department of Medical Education

Research Profile

Professor & Chair: **Prof Mutairu Ezimokhai**

Professor:

Professor Margaret Elzubeir

Professor Sambandam Elango

Assistant Professor: **Dr S Shaban**

Senior Lecturers: **Ms Geraldine Kershaw**

Medical Skills and Communication:

Dr Raney Benner

Mr Mark Campbell

Administrative Assistants:

Ms H Mansour

Ms N Seif Al Nasr

Mr CP Nair

Ms Lakshmi Ravindranathan

Mr T Usman

IT GROUP

IT Supervisor: **Mr Alsajir M Basheer**

Microcomputer Specialist

Mr Nadeem Ur Rahman

Mr Ehsan Ullah

Ms Latifa Mohammed

MEDIA CENTER

Multimedia Designer: **Ms Ivanna Lizarriturri**

Medical Photographer: **Mr Ashok Prasad**

Reprographic Technician: **Mr M Aboobacker**

Audio-visual Specialist: **Mr Musa Hammad**

SKILLS AND TEACHING LABORATORY

Clinical Skills Coordinator:

Ms Meghana Sudhir

Clinical Laboratory Supervisor:

Mr Kunnath Unnikrishnan

Clinical Laboratory Assistant:

Mr Shanmugam Pandian

Teaching Laboratory Supervisor:

Mr Athiq Wahab

Teaching Laboratory Assistant:

Mr Babuhan Abubakkar

Mutairu Ezimokhai's research interests include Simulation, Assessment and Evaluation, Preterm labor and PCOS.

Margaret Elzubeir's main research activities are in the areas of medical student selection, academic performance, small group learning, curriculum development and faculty development. Together with colleagues in Saudi Arabia she has evaluated a new Master's in Medical Education program and found that on the whole, WFME standards were being met. In 2012 she was co-editor of an International Student Handbook and contributed to two chapters in the handbook.

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.

Summary of current research projects:

1. Student and Faculty Perceptions of Faculty Evaluation: Aburawi (Paediatrics), Mclean, Shaban.
2. Effective Use of a Medical School Curriculum Management System Integrated Medical Education: Shaban.
3. Effective Use of an Electronic Assessment System including question management and data banks as well as assessment delivery and analysis: Shaban.
4. Profile of Medical Students' Learning Styles: Ezimokhai, Mirghani (ObGyn), Shaban.
5. Factors that determine Medical Students' Residency Choice: Ezimokhai, Halah Ibrahim (Tawam), Shaban, Elzubeir.
6. Student Self Assessment: Aburawi (Paediatrics), Elzubeir, Shaban, Elango.

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Proceedings, Conferences, Invited Lectures, Websites etc

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Aburawi EH, Shaban S, McLean M. (2012). Are medical students and faculty on the same page in terms of evaluation? The 9th Asia Pacific Medical Education Conference (APMEC), Singapore, Jan 2012.

Elango. S. (2012). Facilitator, Pre Conference workshop on "Leader as a Coach". Conference of South East Asian Regional Association for Medical Education (SEARAME), India Sept 5-8, 2012.

Elango. S. (2012). Course Director & Facilitator, Course on Leadership in Health Professions Education, 16-20th April, 2012, Kuala Lumpur, Malaysia.

Elango. S. (2012). Facilitator, Pre-conference workshop on "Assessment of reflective learning of ethics"- 15th Ottawa conference, Kuala Lumpur, March 2012.

Schneider JD, Blair I, Sheek-Hussein M, Nagelkerke N, Shaban S. (2012). Indian Workers in the United Arab Emirates. 62nd Annual National Conference of Indian Association of Occupational Health (OCCUCON), Delhi, India, 2012.

Shaban S, Souid AK. (2012). Oxygen Measurement via Phosphorescence. The 6th International Symposium on Bio- and Medical Informatics and Cybernetics: BMIC 2012, Orlando FL, USA, Jul 2012.

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Shaban S. (2012). Electronic Medical Record (EMR) From Data to Useful Information. Alain Hospital managed by Vienna Medical University and VAMED, Alain, May 2012.



Awards

Prof S. Elango. IMU Achievement Award, International Medical University, Malaysia, March 2012.



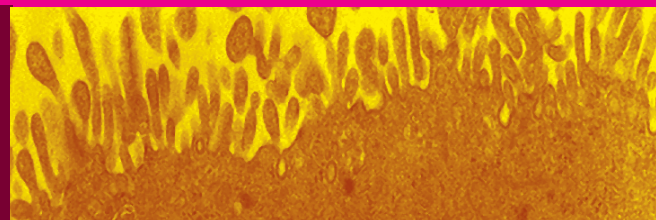
2012

Medical Education



Back row, from left to right: Mr Ashok Prasad, Mr T Usman, Mr A Basheer, Mr CP Nair, Mr N Ur Rahman, Mr E Ullah, Mr M Campbell, Mr M Aboobacker, Mr K Pandian, Mr A Wahab, Mr K Unnikrishnan, Mr B Abubakkar
Front row, from left to right: Ms Lakshmi R, Ms H Mansour, Dr S Shaban, Prof M Elzubeir, Prof M Ezimokhai, Prof S Elango, Ms N El Nasr, Ms M Sudhir
Absent: Ms G Kershaw, Dr R Benner, Ms L Mohammed, Ms I Lizarriturri, Mr M Yassin, Ms Meera Khalifa

Department of 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. During 2012, the department welcomed Dr Eyad Elkord as a new faculty member. Dr Elkord's research expertise is in human immunology, in particular as pertains to cancer patients, and he will be sure to further strengthen the Department's research portfolio and education mission.

Professor Basel al-Ramadi: The innate immune response is part of an evolutionarily conserved system by which the body recognizes, and responds to, infectious as well as noninfectious insults. Given the multitude of the types of insults to which we are likely to be exposed, the innate immune system had developed multiple pathways to coordinate the host response. One of the primary research interests in our laboratory has been the role of Toll-like receptors (TLRs), critical components of the recognition and signaling machinery of innate immunity, in host response to bacterial infection. Previous findings have demonstrated that MyD88 protein, a central regulator of TLR pathways, plays a role in the maintenance of self-tolerance. This is the default pathway that prevents individuals from reacting against their own tissue, thereby averting the development of autoimmune diseases. Nod-like receptors (NLRs) constitute a unique class of innate immune system receptors that make up a part of the inflammasomes, which are intracellular multi-protein assemblies which function to induce the cellular inflammatory cascade. One of these receptors, known as NALP3, appears to regulate the cellular response following exposure to inorganic nanoparticles, exceedingly tiny substances used in vaccine preparations, drug delivery, and cosmetic applications. In collaboration with colleagues in the College of Engineering, we have demonstrated that systemic exposure to composite nanoparticles lead to increased levels of liver function tests (AST and

Professor & Chair:

Prof B al- Ramadi

Professor:

Prof T Pal

Prof T Rizvi

Associate Professor:

Dr G Khan

Assistant Professor:

Dr A Al Qahtani

Dr M Al Shamsi

Dr E Elkord

Dr A Sonnevend

Medical Research Specialist:

Ms A Al-Ghazawi

Mr M Al-Haj

Ms L M Ali

Mr Y Mohamed

Ms P Philip

Mr A Shahin

Medical Research Technician:

Ms G Bashir

Secretary:

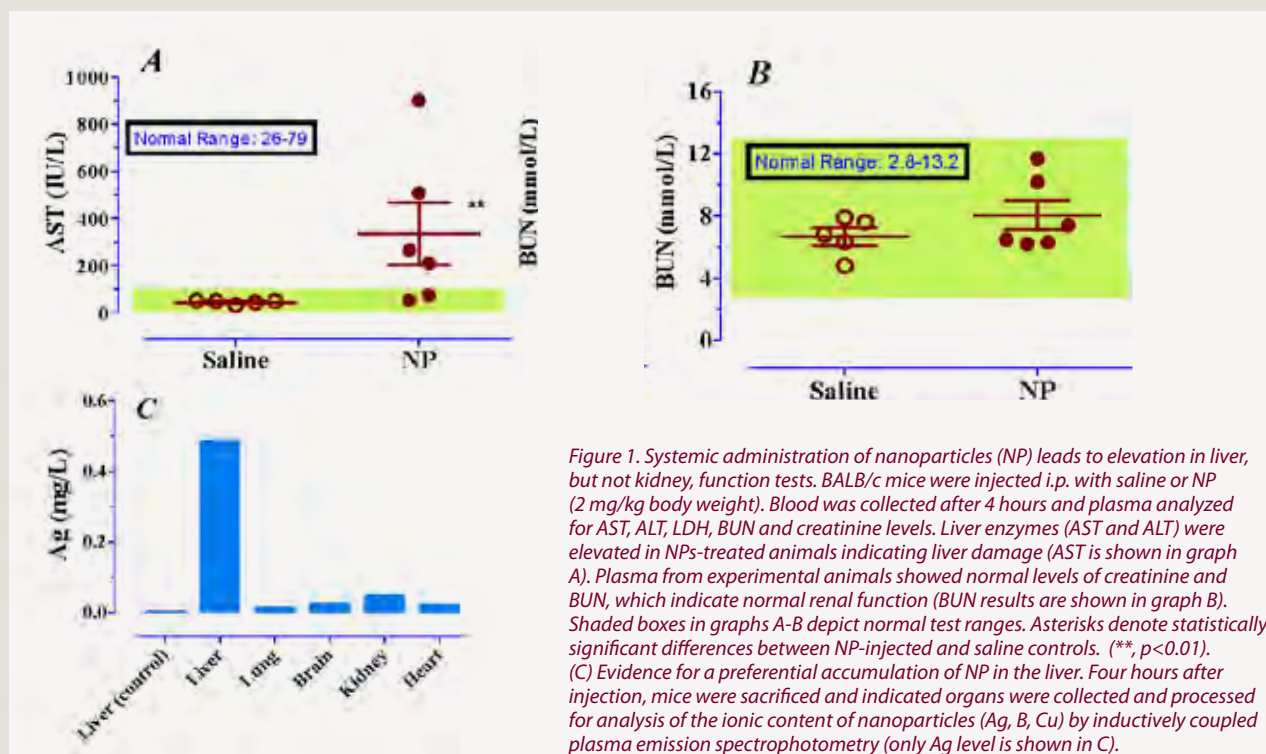
Ms R Qayed

Office Assistant:

Mr M H Majeed

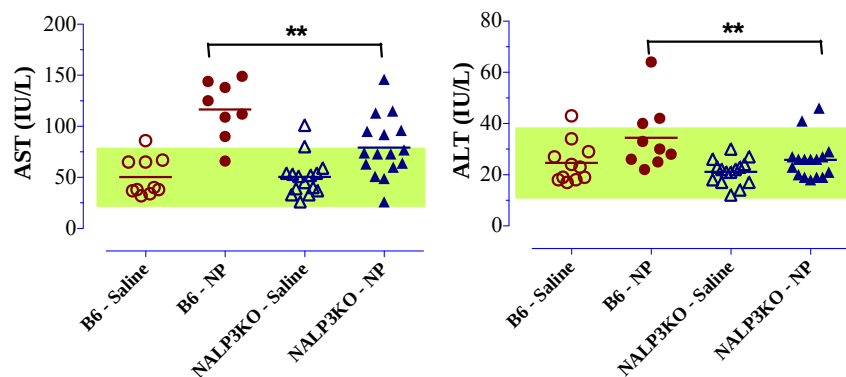
ALT) but not in kidney function indicators (BUN and creatinine) (see Figure 1 A-B). The rise in liver

enzymes correlates with a preferential accumulation of nanoparticles in the liver (Figure 1C).



Interestingly, this response was ameliorated in animals deficient in NALP3 inflammasome (Figure 2), suggesting that NALP3 plays a crucial role in detecting and responding to nanoparticles. These findings suggest that inorganic nanopar-

ticles are not inert but subject to recognition by the innate immune system. This has implication for the in vivo use of nanoparticles, for example in drug delivery and in vaccines.



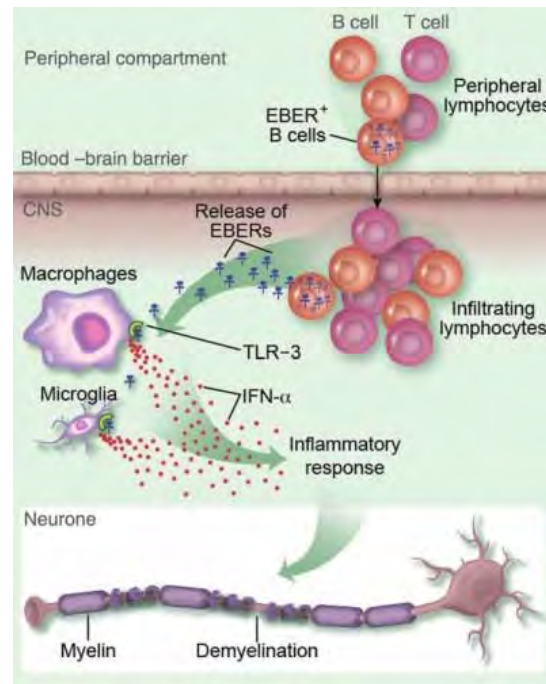
Prof T Rizvi: Using retroviruses such as human, simian, and feline immunodeficiency viruses (HIV, SIV, & FIV), Mason-Pfizer monkey virus (MPMV), and mouse mammary tumor virus (MMTV), the research program in Prof. Rizvi's laboratory is directed towards understanding molecular steps involved in retroviral replication, specifically RNA packaging and transport. Current ongoing studies are focused on how retroviral genomic RNA is preferentially packaged and/or cross/co-packaged over cellular and other retroviral RNAs into the nascent virus particles using different viral systems. Briefly, over the years, Prof. Rizvi's laboratory has identified the packaging and dimerization determinants at the 5' end of the genomic RNA for number of retroviruses and has predicted as well as validated their RNA secondary structures employing biologically relevant assays. Over the years, Prof. Rizvi 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 T Pal's main research interest is the investigation 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.

Dr Gulfaraz Khan: Our laboratory continues to study the biology of Epstein-Barr virus (EBV) and its role in the pathogenesis of human diseases, in particular, malignancies and autoimmune disorders. EBV is arguably one of the best studied human oncogenic viruses implicated in the pathogenesis of a number of malignancies of both epithelial and lymphoid origin. We are trying to understand the role of some of the viral latent products in regulating latency, inhibition of apoptosis and cell proliferation. We are using both in vitro and in vivo approaches in order to understand the molecular pathways involved.

In collaboration with colleagues in UK, we have also been looking at the role of EBV in the

pathogenesis of multiple sclerosis. This collaboration has led to two publications in high impact journals (see Fig. 3).



*Figure 3: EBV-ISH Recruitment of B cells into active lesion in multiple sclerosis (MS). The B cell infiltrate may contain the occasional EBV+ B cells. These cells contain EBV non-coding small RNAs (EBERs), which can be secreted in a complex with the cellular EBER binding lupus antigen (La). EBERs can bind to Toll-like receptor (TLR)-3 on neighbouring cells and elicit interferon (IFN)- α production, thereby contributing to an inflammatory milieu. These processes may help to sustain an inflammatory response in the central nervous system (CNS) and contribute to demyelination and axonal injury typically seen in MS (From UC Meier, G Giovannoni, JS Tzartos, G Khan. *Clinical and Experimental Immunology* 2012, 167: 15–25).*

Mariam Al Shamsi's main research activity is in the area of inflammation and autoimmunity. Currently I'm investigating the changes in cellular bioenergetics in cells and tissues during clinical course of experimental autoimmune encephalomyelitis (EAE), rodents model of multiple sclerosis. EAE was induced in susceptible (Dark Agouti) DA rats using (Myelin basic protein) MBP and the same treatment was also given to a resistant strain (Albino Oxford) AO rats. Spinal cord specimens were excised at different stages of disease and analyzed for cellular respiration, caspase activity and histology. Preliminary results showed that the rate of spinal tissue respiration ($\mu\text{M O}_2 \text{ min}^{-1}$

mg-1; measured at all stages of disease) in rats injected with the encephalitogen was 0.20 ± 0.05 (mean $\pm$ SD, $n=11$). The corresponding rates for un-injected rats were 0.17 ± 0.03 ($n=5$, $p=0.320$) and for Albino Oxford (AO, a resistant strain) rats 0.26 ± 0.09 ($n=6$, $p=0.180$). A transient caspase activity and profuse cellular infiltration were seen in DA rats at height of disease and disappeared by recovery. Thus, CNS bioenergetics is preserved throughout the course of EAE, permitting clinical recovery.

In addition, in collaboration with Prof. Mensah-Brown, we investigate the mechanism by which TLR-2 agonist, Pam3 CYS-CK4 (Pam3CSK4), enhances and promotes diabetes in susceptible male C57BL/6 mice. This was shown to be due to the combination of factors including enhanced antigen presenting cell activity, suppression of regulatory T cell activity and an overwhelming proinflammatory cytokine milieu in which the IL-12/IFN- γ axis is predominant within the draining pancreatic lymph nodes.

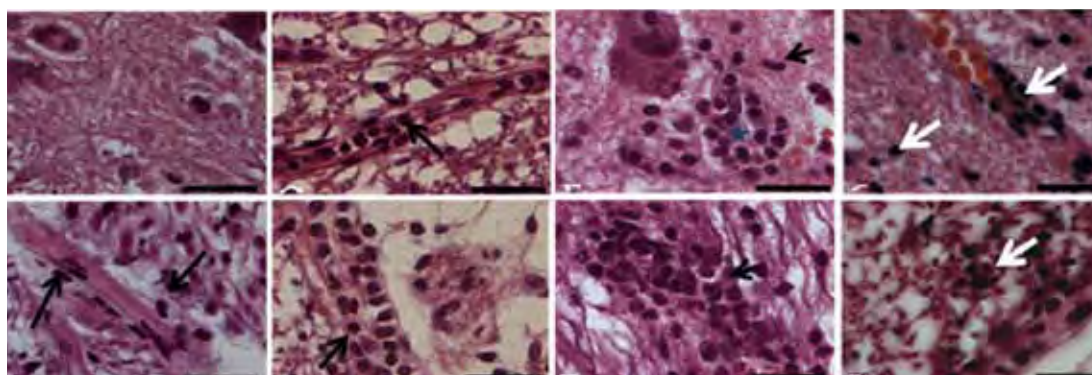


Figure 4. Micrographs of hematoxylin and eosin stained sections of the spinal cord of non-immunized (A) and immunized (B-H) DA rats. Note the presence of a few subpial infiltrating cells (Panel B, arrows) on Day 8 or grade 2 clinical disease, which increased significantly by Day 9 (Panels C-D, arrows) even though they still remain in subpial vessels. Note that by Day 10 or grade 3.5 (Panels E-F), the infiltrating cells (arrows) could be observed within the spinal cord where perivascular cuffs can also be seen (Panel E, star). Note the reduction in infiltrating cells (arrows) by Day 17 (Panels G-H) with recovery from clinical disease. Bar = 20 μ m.

Table 1. Quantitative analysis of mononuclear cells, insulin-positive cells and apoptotic cells in pancreatic islets

	Treatment STZ only (controls)	STZ + Pam3CSK4
Number of infiltrating mononuclear cells	35 ± 2.0	$107 \pm 9^{**}$
Percent Insulin positivity	62.7 ± 1.4	$27.9 \pm 3.1^{**}$
Number of apoptotic cells	23 ± 6	$68 \pm 12^{**}$

Animals received subdiabetogenic MLD-STZ treatment, and 5 daily i.p injection (4×40 mg/kg b.w) of Pam3CSK4 or carrier solution only (controls) starting on the first day after the last dose of STZ treatment (see Materials and methods). Data are shown as mean $\pm$ SEM per islet. * $p < 0.005$, ** $p < 0.05$

Agnes Sonnevend-Pal's main research activities are in the area of molecular epidemiology and antibiotic sensitivity of human pathogenic bacteria. She studies polyresistant pathogenic bacteria like extended spectrum beta lactamase (ESBL) and carbapenemase producer *Escherichia* and other Enterobacteriaceae, methicillin

resistant *Staphylococcus aureus* (MRSA), which are the major threat in the hospitals in the UAE and becoming more and more prevalent in the community, as well. Also, in cooperation with Prof. T Pal, she investigates the molecular epidemiology of *Acinetobacter baumannii* in the UAE. Beyond that she cooperates extensively with Prof. JM Conlon studying the effect of various peptides on different antibiotic resistant micro-organisms.

Dr Eyad Elkord's research is focused on 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. 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 survival (Figure 5). Our recent work has further established that Treg infiltration of tumors is correlated with a lack of some patients' responsiveness to therapy. Additionally, we found that adoptive transfer of Treg-depleted autologous T cells in renal cell carcinoma (RCC) patients following conditioning chemotherapy provided a transient reduction of circulating Treg levels which was associated with improved antitumor immune response to the tumor-associated antigen

5T4. There are two main populations of CD4+ Tregs with different origins: thymus-derived natural Tregs (nTregs) and peripherally induced Tregs (iTregs). Conversion of conventional T cells into iTregs is proposed as a potential mechanism for Treg expansion in cancer. Discovery of markers that distinguish iTregs from the natural ones is of great importance and currently under intensive investigations; this might allow targeting iTregs in specific protocols. We found that the majority of peripheral and tumor-infiltrating FoxP3+ Tregs expresses Helios, an Ikaros family transcription factor (see Figure 6). Additionally, FoxP3+Helios+ Tregs possess more suppressive phenotype and characteristic, as compared to FoxP3+Helios- Tregs. Taken together, these observations suggest that Tregs are implicated in the immunopathology of cancer and their specific targeting may improve the efficacy of immunotherapeutic modalities.

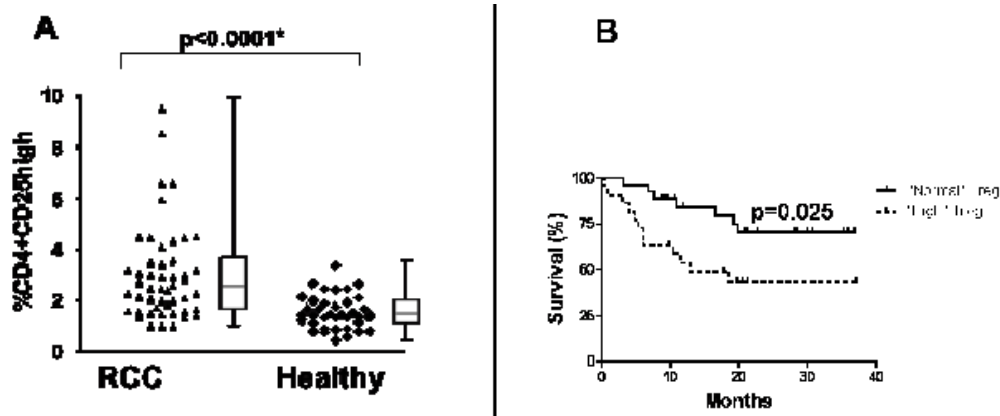


Figure 5: The level of CD4+CD25high Tregs in RCC patients is significantly higher than healthy controls (A). Box and whisker diagrams represent median, interquartile range and sample range. RCC patients with a high frequency of Tregs at presentation have significantly shorter survival than patients with normal Treg levels ($p=0.025$).

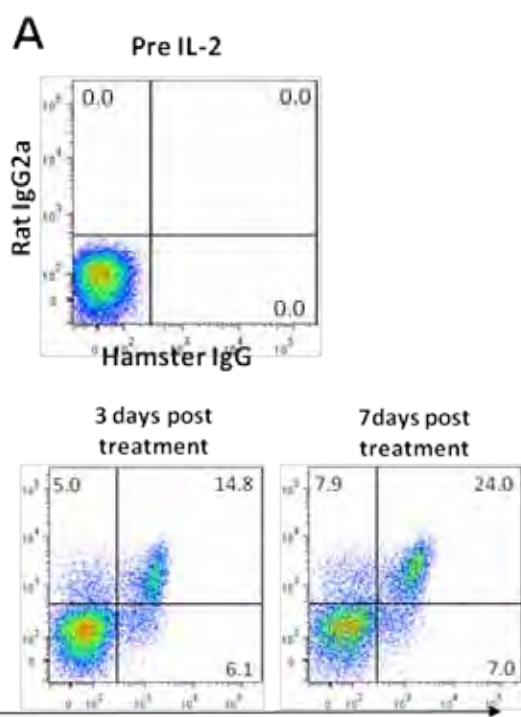
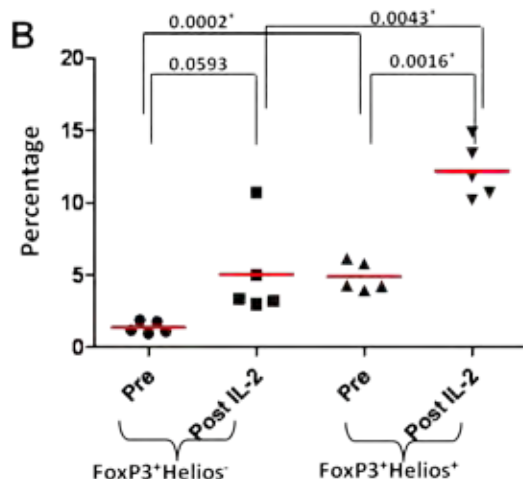


Figure 6. Peripheral blood mononuclear cells were isolated from renal cell carcinoma (RCC) patients before and after IL-2 treatment and stained for CD3, CD4, FoxP3 and Helios before flow cytometric analysis. Cells were gated on CD3+CD4+ T cells and FoxP3 and Helios expressions were analyzed. A representative flow cytometric plot of FoxP3 and Helios expression and isotypes is shown in A. B shows the percentages of Helios expression (Helios- and Helios+) in CD3+CD4+FoxP3+ Tregs in 5 RCC patients pre and post IL-2 treatment.



Articles in Peer-reviewed Journals

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In: Pál Tibor (ed.) Textbook of Medical Microbiology Budapest: Medicina Könyvkiadó, 2012. pp. 481-484. (Hungarian)

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Fernandez-Cabezudo MJ, Sarawathiamma D, Nemmar A, Haik Y, al-Ramadi B. (2012). Systemic administration of metallic nanoparticles initiates an acute, inflammasome-mediated, inflammatory response. *J Immunol*, May 2012, 188.

Proceedings, Conferences, Invited Lectures, Web Sites and Others

al-Ramadi B. (2012). MyD88: A key regulator of the immune response to self vs. nonself antigens. Department of Microbiology & Immunol-

ogy, Temple University School of Medicine, Philadelphia, PA, USA, January 2012.

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Khan G, Philip PS, Adem A. (2012). Rabbit lymphocytes are susceptible to EBV infection: Rabbits as an animal model for EBV infection? 15th Annual Meeting of the European Society of Clinical Virology, Madrid, Spain, 4-7th Sept 2012.
Pál T. (2012). Emerging transfer-

able Multi-drug resistance in Gram negative bacteria Dubai 2012 – Arab Health MedLab

Pál T. (2012). Carbapenem resistance among enteric bacteria in the Gulf region - Middle East Health Care Associated infections Conference, Abu Dhabi.

Pál T. (2012). Multidrug-resistant bacteria: search and destroy or lose (loose?) surveillance. ESCMID Summer School, July 2012, Innsbruck, Austria

Pál T. (2012). Interpretive reading of antibiograms. ESCMID Summer School, Innsbruck, Austria

Pál T, Darwish D, Sonnevend A, Kristóf K, Szabó J, Urbán E. (2012). Emergence of *Escherichia coli* O25b-ST131 clone among Hungarian bloodstream isolates – 22nd European Congress of Clinical Microbiology and Infectious Diseases, London, UK

Pal T, Sonnevend A, Yahfoufi N, Ghazawi A, Hashmey R, Matthew M, Tariq WZ. (2012). VIM-4 carbapenemase-producing *Enterobacter cloacae* in the United Arab Emirates – 13th Asia-Pacific Congress of Clinical Microbiology and Infection, Beijing, China

Sonnevend A. (2012). Community Acquired vs. Hospital Acquired MRSA in the Hospitals - ESCMID Postgraduate Education Course Update on Antibiotic Resistance – from Laboratory to Clinical Practice, Al Ain, UAE

Sonnevend A. (2012). Tricks in identifying the newly emerging resistance mechanisms in the laboratory - Laboratory Management and Medicine Congress, Dubai, UAE

Sonnevend A, Al Baloushi A, Pal T, Hashmey R, Atriq WZ, Girgis S, Sheikh F, Pitout M, Hamadeh MB, Ghazawi A, Al Haj M. (2012). Emergence of NDM-1 carbapenemase producing *Enterobacteriaceae* in Abu Dhabi Emirate, United Arab Emirates – 22nd European Congress of Clinical Microbiology and Infectious Diseases, London, UK

Sonnevend A, Farag S, al Haj M, Nagelkerke N, Jouhar F, Pal T. (2012). Association of biofilm production and Pantone-Valentine leukocidin (PVL) positivity of *Staphylococcus aureus* isolated from clinical samples in Al Ain, United Arab Emirates – 13th Asia-Pacific Congress of Clinical Microbiology and Infection, 2012 Beijing, China



RESEARCH GRANTS

CMHS Research Grants

Dr. Maria J. Fernandez-Cabezudo [PI] and Prof. Basel al-Ramadi Regulation of macrophage inflammatory responses by organophosphorous compounds; differential role of acetylcholinesterase vs serine-protease inhibitors

Prof. T. A. Rizvi [PI]
Role of MPMV Gag stem loop structural motifs in RNA packaging and propagation: Implications for the design of MPMV-based vectors for human gene therapy.

Prof. T. Pal [PI]
Characterization of carbapenem degrading metallo-beta lactamase genes different from World-wide distributed ones but prevalent among pathogens in Abu Dhabi hospitals.

Dr. G. Khan [PI]. Xenotropic murine leukaemia virus-related virus (XMRV) and the pathogenesis of breast cancer. UAE University, FMHS, UAE (Project Grant)-11-13

Dr. A. Sonnevend [PI]. Virulence, clonality and antibiotic resistance gene profile of *Escherichia coli* isolated from bloodstream infection in Tawam Hospital, Al Ain NP-12-25

Sheikh Hamdan Award for Medical Sciences

Dr. S. Abdullah [PI] and Prof. Tahir A. Rizvi.
Prevalence of HPV in cervical cancer among UAE nationals.

Terry Fox Fund for Cancer Research

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

Dr. M. Fernandez-Cabezudo [PI], Prof. B. al-Ramadi, Dr. H. El-Taji, Dr. M. Jaloudi and Dr. H. El-Salhat
Novel resistance biomarkers in human breast cancer

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

Prof. T. A. Rizvi [PI]
Characterization of the sequences necessary for mouse mammary tumor virus (MMTV) RNA packaging: Implications for the development of MMTV-based vectors for cancer gene therapy.

National Research Foundation

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

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

Prof. T. A. Rizvi [PI]
Role of structural elements in retroviral genomic RNA packaging and dimerization: Implications for developing new generation vectors for gene therapy.

Dr. G. Khan [PI], Prof. A. Adem, P.S. Philip.
Establishing and evaluating a rabbit model for EBV infection.

Dr. A. Sonnevend [PI].
The genetic environment of NDM gene in Enterobacteriaceae: its

effect on the gene expression and on the spread of resistance.

Dubai Harvard Foundation for Medical Research

Drs. Raif Geha [PI], Luigi Notarangelo, Suleiman Al-Hammadi and Prof. Basel al-Ramadi
Collaborative Research Network on Primary Immunodeficiency Diseases

Others

Prof. T. Pal [PI]
Molecular basis of ertapenem resistance among Enterobacteriaceae isolated in the Arabian Peninsula.

Dr E Elkord, Dr A Elmanama.
The Academy of Medical Sciences, Daniel Turnberg UK/Middle East Travel Fellowship. Effect of bacteria on induction of Th17 inflammatory cells.

Dr E Elkord, Mr Belal Chaudhary.
Wellcome Trust Biomedical Vacation Scholarship. T regulatory cells in colorectal cancer.

Dr E Elkord. North Manchester Health Care Trust.
Role of immunosuppressive cells in pancreatic and colorectal cancers.

Dr E Elkord. Salford Royal NHS Foundation Trust.
Role of immunosuppressive cells in pancreatic and colorectal cancers.

Dr E Elkord, Prof Phil Craig.
Naval Medical Research Unit and Universidad Cayetano Heredia, Lima, Peru. Immune responses to Echinococcosis.



2012

Medical Microbiology



Standing left to right:
Mr. Mohammad Hashiq, Mr. Yasir Mohamed, Mr. Mohamed Al-Haj, Dr. Ahmed Al Qahtani, Dr. Gulfaraz Khan, Professor Tibor Pal, Dr. Eyad Elkord, Professor Tahir Rizvi, Mr. Allen Shahin

Seated left to right:
Ms. Lizna Ali, Ms. Rozeena Qayed, Dr. Mariam Al Shamsi, Ms. Ghada Bashir, Professor Basel al-Ramadi, Dr. Agnes Sonnevend-Pal, Ms. Akela Al-Ghazawi, Ms. Pretty Philip

Department of Obstetrics & Gynaecology



Research Profile

The Research interests in the Department of Obstetrics and Gynecology are in Obstetrics, Fetal Medicine, Gynecology, Oncology and Urogynecology.

Dr. Hassan Elbiss's major area of interests is urogynecology, minimal access surgery, in-vitro human placenta perfusion. Dr. Hisham Mirghani's major area of interest is fetal growth and physiology in diabetic pregnancy, fetal anomalies, in-vitro human placental perfusion, and Medical Education. Professor Mutairu Ezimokhai is interested in Pathophysiology of Pregnancy and medical disorders in pregnancy. Expertise is in working with vascular and uterine smooth muscles. Dr. Osman Ortashi's main interest is in gynecological cancers, cervical cancer prevention and the relation between Human Papilloma Virus and cancers.

Departmental Research focus for 2012 HPV and cervical cancer prevention

The department of gynecology in UAE has strong interest in cervical cancer prevention and HPV infection and vaccine. The department has worked closely with the Health Authority Abu Dhabi (HAAD) in establishing the first organized cervical screening program in the UAE and the Gulf region. We have also participated actively in the cervical cancer awareness campaign that was organized by HAAD.

Moreover the department has organized a number of educational events on the HPV infection and vaccines. The Obstetrics and gynecology department in the UAE has also conducted the first practical cervical screening workshop in UAE.

The department in the last year conducted three research projects on the knowledge and uptake of HPV infection and vaccine among women, nurses and university male students. This formed the largest data base on HPV infection and vaccine in UAE. Currently the department is looking to conduct national HPV prevalence study to establish the prevalence of different HPV subtypes in UAE.

Data on the knowledge and uptake of HPV vaccine was presented by the department in a number of national and international conferences.

Associate Professor & Chair:

Dr. Hisham Mirghani

Professor:

Prof Mutairu Ezimokhai

Assistant Professor:

Dr. Hassan Elbiss

Assistant Professor:

Dr. Osman Ortashi

Medical Research Specialist II:

Dr. Nawal Osman

Medical Research Assistant:

Hina Raheel

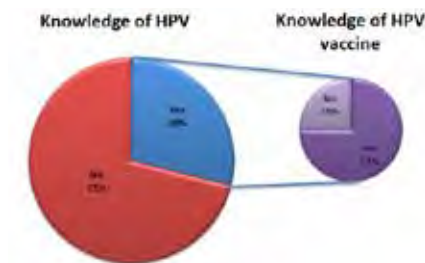
Research Nurse:

Flora D. Lone

Medical Secretary:

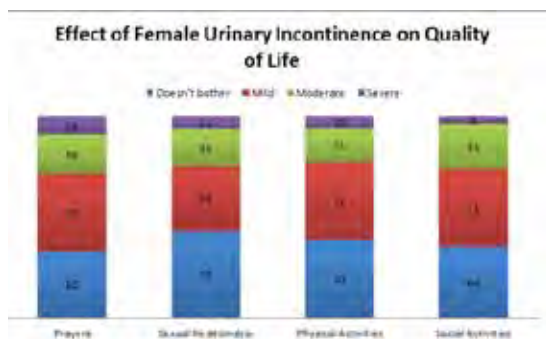
Clarina G. Garcia

Knowledge of women about HPV infection and vaccine in UAE



Female pelvic floor dysfunction and gynecological laparoscopy surgery

The department has developed strong interest in female pelvic floor dysfunction (female urinary incontinence and genital prolapse) in the community and urinary incontinence during pregnancy. The department conducted community base research projects on prevalence and impact of pelvic floor dysfunction of Emirati women quality of life. The results of these studies have been presented to several national and international meetings. In addition, the department conducting research project to evaluate the prevalence and risk factors for urinary incontinence in pregnant women. Data on the effect of female urinary incontinence on Emirati women quality of life is shown in the chart below:



Moreover the department has organized workshops and presented at national meetings in order to train gynecologists and urologists from UAE and outside in understanding how to screen, investigate and treat patient with pelvic floor dysfunction. The department has been actively involved in running several hands-on laparoscopic workshops to train national doctors from UAE and outside. Our workshops recognized as one of very few workshop in the region to train doctors on live animals. Moreover, to evaluate and improve our workshops, we conducted two research projects in 2012 and 2013 to evaluate our workshops and to assess the clinical effect of our workshops on practice. One study already has been accepted for publication January 2013, and 2 abstracts have been accepted for oral presentation at MESGE in Antalya, Turkey April 2013.

Articles in Peer-reviewed Journals

Abbas AK, Mirghani H, Eid HO, Abu-Zidan FM. (2012). Trauma in women of child-bearing age in a high-income developing country. *Ulus Travma Acil Cerrahi Derg*, 18(3):239-42.

Elbiss H, Thomson A. (2012). Management of severe endometriosis. *Arch Gynecol Obstet*, Feb;285(2):387-96.

Mirghani H, Begam M, Bekdache G, Khan F. (2012). Specialised fetal and maternal service: outcome of pre-gestational diabetes. *J Obstet Gynaecol*, 32(5):426-9.

Omari W, Elbiss H, Hamad F. (2012). Placenta previa invading bladder and parametrium, Multidisciplinary approach. *J Obstet Gynaecol*, 32(4):396-7.

Published Abstracts, Letter and Correspondence

Elbiss H, Osman N, Hammad F. (2012). Prevalence and social impact of urinary incontinence among women from the gulf; a cross sectional study. *Journal of Urology Supplement*, 187: I4, e758-e759

Proceedings, Conferences, Invited Lectures, Web Sites and Others

Elbiss H. (2012). Regional IUGA symposium, Jeddah, KSA, Sep 2012 IUGA annual meeting. Brisbane, Australia.

Elbiss H. (2012). Obstetrics Anal Sphincter Injury (OASIS). Regional IUGA symposium. Jeddah, KSA.

Elbiss H. (2012). Minimal Invasive Obstetrics and Gynecology Conference. Intercontinental Hotel, Abu Dhabi, UAE.

Elbiss H. (2012). Recent Update in Management of Female Stress Urinary Incontinence, Urology Journal Club Meeting. Abu Dhabi, UAE

Elbiss H. (2012). Recent Advanced Management of Over Active Bladder (OAB). Regional IUGA Symposium. Jeddah, KSA

Elbiss H. (2012). Review of

Management of Obstetrics Anal Sphincter Injury (OASIS). Regional IUGA Symposium. Jeddah, KSA

Elbiss H. (2012). Female Pelvic Organ Prolapse. Plenary Session, Al Ain Hospital. Al Ain, UAE

Mirghani H. (2012). First International Conference on Controversies in Maternal Fetal Medicine, Crown Plaza Hotel, Jeddah, KSA.

Mirghani H. (2012). 5th European Human Placental Perfusion Workshop 2012. University of Manchester, UK.

RESEARCH GRANTS:

CMHS Research Grants

Dr Hassan Elbiss [PI]
Placental transport of Erythromycin and the effect of Erythromycin on production of placental inflammatory factors which have role in neonatal chronic lung disease.

Others

Dr Hisham Mirghani [PI]
Master of Health Professions Education, Maastricht University, The Netherlands, June 2012

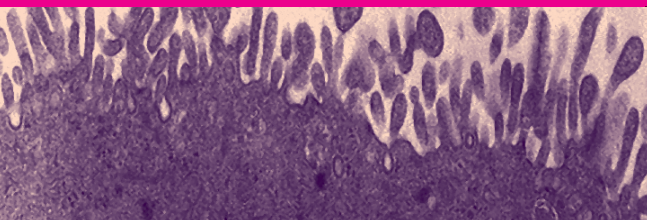
2012

Obs & Gyn



Standing left to right: Dr. H Elbiss, Dr. H Mirghani, Prof M Ezimokhai, Dr. Osman Ortashi

Seated left to right: Clarina Gonzales Garcia, Flora D. Lone, Hina Raheel



Department of Paediatrics

Research Profile

Professor & Chair

A.-K. Soud

Professors

Y. M. Abdulrazzaq (Emeritus)

L. Al-Gazali

H. Narchi

Associate Professor

E. Aburawi

S. Bharwani

Assistant Professor

S. Al-Hammadi

F. Al-Jasmi

R. Al-Mahmoud

A. Al-Suwaidi

M. Al-Samri

Teaching Assistant

Dr. N. Al Dhaheri

Dr. F. Ismail

Research Medical Specialists

Dr. Sheela Benedict (I)

Mr. J. Kochiyil (II)

Mr. T. Pramathan (II)

Research Nurse

Mrs. Sania Al Hamad

Research Assistant/Secretary

Mr. Aws Rashad Diab

Medical Secretary

Ms. R. Clemente

The department has strong research interests in various areas, including genetic disorders, inborn error of metabolism, pathogenesis of viral infections, nanotechnology, toxicology, vitamin D deficiency, immunization gaps, and animal models of human diseases, such as multiple sclerosis, immune hepatitis, RSV infection, and influenza infection.

Several disorders have been studied at clinical and molecular levels. For example, familial and sporadic forms of cerebral dysgenesis are investigated. A new type of agyria-pachygyria associated with agenesis of corpus callosum is characterized. Severe form of a syndrome of myotonia and bone dysplasia [Stüve- Wiedemann Syndrome (SWS)] is identified to be common in the UAE. Founder mutation in the leukemia inhibitory factor receptor (LIFR) is discovered in all families affected with SWS in this population. A birth defect registry for Al Ain Medical District is established, which gained membership in the International Clearing House for Birth Defects. Several studies from this registry are published, identifying the incidence and pattern of various birth defects together with establishing risk factors involved in their etiology.

The group investigated the reasons 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 was 5 times lower in the embryo 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. Growth curves for the whole UAE population have been established. This was done by recruiting 25000 children aged from birth to 18 years from all the Emirates. Growth curves for height, weight, BMI, and skin-fold thicknesses were established for the UAE population.

Aflatoxins, commonly found in nuts and grains, are found to be increased in pregnant women and their offspring. Study is ongoing to determine the teratogenic and other toxic effects of aflatoxins in mice and human lymphocytes.

The department is interested in investigating recessive genetic disorders, using homozygosity mapping, particularly disorders that are common or unique to this population. For example, a gene for Joubert syndrome is mapped to chromosome 9q34.3, and genetic heterogeneity is established. Subsequently, other genes for Joubert Syndrome were mapped and mutations were identified in families from UAE.

A new type of epiphyseal dysplasia is described in a family from UAE and the gene is mapped to chromosome 15q26. Several other disorders are currently being investigated using the same concept.

Metabolic disorders are common in the UAE. The department is active in establishing the prevalence of different metabolic disorders in the population. A study aiming to determine the prevalence of alcaptonuria in UAE has been completed and found an allele prevalence estimated at 0.0107.

Recently, the group discovered that lymphocyte respiration (cellular mitochondrial oxygen consumption) is low in children with trisomy 21.

Perinatal nutrition and nutritional disorders

The department is involved in studies of micronutrients in pregnancy and their effects on the fetus and newborn. Preliminary results suggest micronutrient deficiency is common in pregnancy and outcome studies are in progress.

The department is active in investigating the amino acids in different age groups in the UAE population. Some amino acids are abnormally high in newborn infants using available parenteral amino acid solution. This finding led to a change in the solutions used in the Medical District.

The group working on reproductive toxicology has established that aflatoxin (a fungus toxin) contamination of foods is common, and that aflatoxins have been detected in the blood of pregnant women and their offspring in larger

amounts than is acceptable. The results give a much clearer picture of exposure of infants to aflatoxins.

Aflatoxin B1 is also found to be toxic to human lymphocytes. Thus, this compound suppresses human immunity.

Vitamin D status among pediatric population in UAE

A population based study revealed the status of vitamin D levels among adolescents and female pediatric patients in UAE. Since vitamin D has a pluripotent role in the body and has been found to be deficient among women and newborns in UAE (from previous studies from our department), this important project will provide information which leads to interventional studies.

Helicobacter pylori infection in UAE

The prevalence of H pylori varies from 30% to 90%. It is established that H pylori causes duodenal and gastric ulcers in 10% of infected individuals and gastric cancer in 1% of infected individuals. Our preliminary data shows that H pylori prevalence is close to 60% in UAE. The extent of H pylori involvement in gastric cancer in UAE is under investigation. Gastric cancer registry from the data in Al Ain and Tawam hospitals is being created.

There has been a surge in H pylori resistance to the common antimicrobial agents, such as clarithromycin and metronidazole. In the UAE, at least one of the three drug-resistant mutations is present in 65% of infected individuals. This trend invoked a series of phenotypic and genotypic resistance studies to develop new guidelines for H pylori management in the UAE.

The virulence factors in H pylori (CagA and Vac A) are common in the Middle East. These virulent factors likely cause ulcers, and newer biochemical markers will help identifying susceptible individuals. This personalized medicine is necessary to address the antimicrobial resistance and rising healthcare costs.

Our collaborators at CMHS have shown in knock out animal models that the stem cells may have a prominent role in the evolutionary transition of gastritis to gastric cancer in certain H pylori infected individuals. We are investigating our Pediatric patients with H pylori infections using

immunohistochemistry and electron microscopy studied on gastric biopsy samples.

The bioenergetics and apoptosis of gastric epithelium are also being investigated in stomach biopsies from adult patients. The rate of gastric epithelium oxygen consumption is found to be $0.18 \pm 0.04 \mu\text{M O}_2 \text{ min}^{-1} \text{ mg}^{-1}$ and cellular ATP $173 \pm 101 \text{ pmol mg}^{-1}$.

Toxicology and Pharmacology

The effects of various cytotoxic agents on human and animal tissues are being investigated. Our primary interest is exploring toxin-induced apoptosis, particularly the "mitochondrial cell death pathway". Human lymphocytes, fibroblasts, gastric epithelium, and liver fragments 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, aflatoxins B1, dactinomycin, doxorubicin, atorvastatin, sorafenib, regorafenib, and PI3K and MEK inhibitors.

The phosphorescence oxygen analyzer is used to measure cellular respiration (cellular mitochondrial oxygen consumption). Intracellular caspase activity is monitored on HPLC, using caspase substrates, such as Ac-DEVD-AMC and Ac-DEVD-AFC.

The use of oxygen analyzer to screen for disorders with impaired cellular bioenergetics is recently reported by us. The rate of lymphocyte respiration is determined in healthy adults, children and newborns (umbilical cord blood). Lymphocytes from patients with inborn error of metabolism are investigated. The results show the feasibility of using our phosphorescence oxygen analyzer to screen for defective oxidative phosphorylation.

The above approach is also used to screen for defective oxidative phosphorylation in foreskin samples and their fibroblast-rich cultures. Umbilical cord blood cell toxicology is developed. These cells are shown to internalize various nanoparticles for potential therapeutic uses. The toxic effects of various compounds, such as aflatoxins B1 are also investigated in these cells. The same studies are also underway for human sperm (nanoparticle biocompatibility and toxicology).

Concanavalin A-induced hepatitis is investigated in wild-type and various knockout mice. The results are recently published. Inflammation-induced apoptosis and enhancement of cellular respiration are documented. Similar studies are conducted using the multiple sclerosis animal model ("experimental allergic encephalitis") in rats. The results demonstrate preservation of the CNS bioenergetics during the course of disease, despite induction of apoptosis at height of disease.

Erythrocyte phenotype in Emirati people with alpha-thalassemia trait.

Reference ranges for the erythroid lineage are established in Emirati citizens with and without hemoglobinopathies. The study is completed and published.

Pediatric Tracheostomy:

The study described the natural history of pediatric tracheostomy and its outcomes.

Sputum inflammatory phenotype in patients with asthma

The study described the inflammatory phenotypes in induced sputum in children with asthma. Airway inflammation is shown to be biomarker of asthma severity and response to treatment. The study is completed and published.

Other areas of active research

Other areas of active research include clinical and immunological aspects of hepatitis C, pertussis, post-immunization serology, trafficking of malaria, and prevalence of TB.

We are conducting National Survey for patients with Down and its associated problems. The aims of this study are to assess the prevalence of overweight/obesity and to establish the references for body mass index (BMI) percentile curves for Emirates children with uncomplicated Down syndrome. The study includes the epidemiology of congenital heart disease in these children.

The department is also involved in studying neurological and cardiovascular complication of diabetes mellitus in adult patients. These studies are completed and submitted for publication. Follow-up pediatric studies include assessment of the cardiovascular risks in adoles-

cents and young adults with type 1 and type 2 diabetes mellitus.

Virology studies

A novel in vitro system is developed to investigate the effects of respiratory pathogens and other toxins on lung tissue bioenergetics (cellular respiration and ATP content) and caspase activation. This animal model involved Wistar rats and C57BL/6 mice. The applications are extended to investigate the respiratory syncytial and influenza A viruses.

In the first study, lung fragments from RSV-infected BALB/c mice were evaluated for cellular O₂ consumption, ATP content and caspase activity. The disease was induced by intranasal inoculation with the RSV strain A2 and lung specimens were analyzed on days 2-15 after inoculation. A phosphorescence O₂ analyzer that measured dissolved O₂ concentration as a function of time was used to monitor respiration. The caspase-3 substrate analogue N-acetylasp-glu-val-asp-7-amino-4-methylcoumarin (Ac-DEVD-AMC) was used to monitor intracellular caspases. The results show O₂ concentration declined linearly with time when measured in a sealed vial containing lung fragment and glucose as a respiratory substrate, revealing its zero-order kinetics. O₂ consumption was inhibited by cyanide, confirming the oxidation occurred in the respiratory chain. Cellular respiration increased by 1.6-fold ($p < 0.010$) and ATP content increased by 3-fold in the first week of RSV infection. Both parameters returned to levels found in uninfected lungs in the second week of RSV infection. Intracellular caspase activity in infected lungs was similar to uninfected lungs throughout the course of disease. Thus, lung tissue bioenergetics is transiently enhanced in RSV infection. This energy burst, triggered by the virus or virus-induced inflammation, is an early biomarker of the disease and may be targeted for therapy. The manuscript is submitted for publication.

Similar study is conducted for influenza A. The goal of these virology studies is to investigate viral strains from patients. Other aims include studying the fates of these viral infections in various immune deficient mice.

Overall view

The research in the department comprises basic

science, genetics, epidemiological studies of important problems in the UAE (e.g., nutrition, growth, and vitamin D) as well as the full spectrum of pediatric specialties (e.g., hematology, oncology, neonatology, imaging, gastroenterology, infectious diseases, cardiology, neurology and gastroenterology). These domains have been made possible by the clinical expertise of our faculty members in the pediatric medical conditions and their perceived needs of the children they are managing on daily basis in the UAE hospitals and clinics.

Our pediatric laboratory team supports basic science research, as well as collaborative clinical and epidemiological studies with affiliated hospitals and the community at large. The expertise and dedication of our medical laboratory research specialists have been instrumental to the research productivity of the department. Pediatric faculty members are also actively engaged in collaborative research with other CMHS clinical and basic science departments, as well as other UAE University colleges (e.g., nutrition and physics). Networking with other universities and medical institutions in many countries is also ongoing and helps enhance our research output.

Many of the pediatric residents, fellows (e.g., neonatology) and colleagues are involved with our research projects. The department efforts in this endeavor have included research workshops, including research methodology, biostatistics, and bibliography management.

Fetal growth

Our collaborative studies with several UK hospitals evaluated fetal growth by customized birth weight centiles. The results have shown better identification of outcomes associated with small and large for gestational age when defined by the customized centiles. Similar results have also been shown for macrosomic infants and infants born to diabetic mothers. These results have important implications for screening and monitoring infants at risk.

Perinatology

A collaborative study with UK hospitals evaluated the impact of maternal overweight and obesity on neonatal outcomes. Although macrosomia was more prevalent and growth retardation was less common with increasing levels of obesity, the results showed lower prevalence of poor neonatal outcomes. This is

due to the multivariable analysis model used, which addressed limitations of prior studies. The results are important for the management of obese pregnant women and their newborns.

Neonatal periventricular leukomalacia

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.

Vitamin D status

Hypovitaminosis is found in 70% of pregnant women in Al Ain, with progressive worsening up to 6 months postpartum. The mechanisms have been unraveled and recommendations have been made for prevention. Hypovitaminosis is also found in healthy neonates and has been shown to progressively improve over the first 6 months of life, without any vitamin D supplementation.

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 prevalence of above 90%. This information leads to interventional studies, aiming to achieve normal vitamin D status in women prior to pregnancy.

Nephrology

A study of biomarkers of renal tubular damage in young children with urinary tract infections is underway. These variables are potential predictors for permanent renal cortical scarring. The study will identify children at higher risk of scarring who need long-term antibiotic prophylaxis. An experimental study of proteinuria and urinary cytokines in mice with experimental fever versus experimental nephrotic syndrome has shown a marked difference in the pattern of cytokines excretion. The data will allow differentiation between benign proteinuria associated with febrile illnesses in nephrotic children and the onset of a relapse of nephritic syndrome.

A study of fetal hydronephrosis has shown

that, when diagnosed in the third trimester of pregnancy, it has a higher predictive power for underlying uropathies. These results will result in modifications of current guidelines.

Several studies of uropathogens resistance to antibiotics in children with urinary tract infections have looked at the role of first versus recurrent infection, presence of vesicoureteric reflux and prior antibiotic prophylaxis. The results have implications for clinical practice.

Medical education

Study of the predictive value of the pediatric in-house examination at the end of clerkship with regard to the NBME examination has identified the key components of our examination which can predict the NBME marks. These results, when used as a formative assessment, will help identify students predicted not to perform well at the NBME and offer remedial action.

Comparison of the educational objectives of the pediatric in-house examination at the end of clerkship and of the NBME examination, using Bloom's taxonomy of educational objectives, has identified which objectives are duplicated and which are unique to each examination. This will allow proper alignment of our assessment methods with our educational objectives set out in our pediatric curriculum.

Education

Undergraduate Medical Education

The major component of education is directed towards our medical students and pediatric residents enrolled in the programs. For undergraduate medical education, the pediatric faculties participate in medical science courses, organ system courses, and clinical sciences courses.

The junior pediatric rotation is 8 weeks of full time pediatric assignments. The clerkship is designed to have significant clinical experience with didactic sessions at Tawam and Al Ain Hospitals. The students take on call duty in the hospitals, assigned to them and their activities are recorded during the clerkship period. At the end of the rotation, written examinations (including NBME examination), clinical case presentations and viva are conducted.

For the senior pediatric rotations, the students spend four weeks in categorical pediatrics and four selective weeks in any of the pediatric subspecialties or two of the pediatric subspecialties

(two weeks each). They work as sub-interns and perform procedures. They actively participate in patient management, bedside discussions and case conferences. On call responsibilities are also required during this period. At the end of the rotation, the students take NBME examination, which offers them opportunity to compare their performance with the United States. They also undergo clinical assessment with structured oral examination.

Graduate Medical Education

The Residency Training in Pediatrics is highly individualized. Hospital, ambulatory and community settings are utilized during the residency training period. To comply with the requirements of Arab Board, the residency program consists of four years of training at the end of which the graduates are eligible for the Arab Board Examination. The residents also take USMLE. The residents have extensive exposure to general pediatrics and subspecialties. They also receive ambulatory pediatric experience. The importance of continuity of care is emphasized.

The faculty members provide clinical services in outpatient and inpatient settings. Diagnostic and therapeutic consultations are also provided for children with various problems, including immunology, respiratory, infectious disease, immunization, vaccination and metabolic diseases. The department also provides assistance in neonatology. Academic lectures are also given to the residents by the pediatric faculties.

Mission Statement

The mission of the department of Pediatrics is to provide comprehensive, multidisciplinary education to our medical students and pediatric residents. Our mission also includes promoting exemplary physicians who provide compassionate care, child advocacy and continuous education. The department provides the scientific and clinical knowledge of pediatrics and its subspecialties. It prepares the students to practice evidence based medicine and employ critical thinking in the field academic medicine. Our training emphasizes the principles laid out by the United Nations General Assembly on the Children's Bill of Rights.

The children's bill of rights

- Every child has the right to affection, love and understanding
 - Every child has the right to adequate nutrition and medical care.
 - Every child has the right to protection against all forms of neglect, cruelty and exploitation.
 - Every child has the right to free education and full opportunity to play and recreation.
 - Every child has the right to name and nationality.
 - Every child has the right to special care if handicapped.
 - Every child has the right to be among the first to receive relief in times of disaster.
 - Every child has the right to preserve his or her own identity and freedom of expression and thought.
 - Every child has the right to enjoy his or her own culture, profess and practice his or her own religion, and use his or her own language.
 - Every child has the right to live without the dangers and risks of environmental pollution.
 - Every child has the right to live free of discrimination based on sex, race, color, language, religion, political opinion, nationality, ethnic or social origin, disability, property or birth status.
 - Every child has the right to live in a free society in the spirit of understanding, peace, tolerance, equality and friendship among all people.
- Based on Convention on the Rights of the Child adopted by the United Nations General Assembly, November 20, 1989.

About Us

The discipline of pediatrics provides health care needs from newborn to 18 years of age. It is one of the major clinical departments of the CMHS and plays critical role in training undergraduate and postgraduate medical students. The pediatric residency program is the largest in UAE.

The department consists of nationally and internationally recognized faculty members who participate in teaching, research and clinical care in the two major hospitals at Al Ain (Al Ain Hospital and Tawam Hospital) and provide consultations to various physicians within and outside UAE.

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RESEARCH GRANTS

CMHS Research Grants

Dr H Narchi (PI)
Serum serum cytokines, metalloproteinases (MMPs) and heat shock proteins in children with Kawasaki Disease and with pyrexia of infectious causes. A case-control study.

Equipment grant [CMHS]

Dr. Elhadi Aburawi [PI]
Measurement of the Resting Metabolic Rate (RMR) in those included in the study of Cardiovascular Diseases Risk Factors in UAE adolescents and young adults with type 1 and type 2 Diabetes Mellitus.

UAEU Individual Grant

Dr. Elhadi Aburawi [PI]
Cardiovascular Diseases Risk Factors in UAE adolescents and young adults with type 1 and type 2 Diabetes Mellitus. Intima Media Thickness and myocardia function assessment.

Sheikh Hamdan Bin Rashid Al Maktoum Awards for Medical Sciences Grant

Professor Yousef M. Abdulrazzaq (PI) Lamotrigine effect on fetus (2010-2012)

Dr. Fatma Al Jasmi (PI)
Psychiatric Manifestations in Children with Inborn Error of Metabolism

Nestle Educational Institute Grant

Professor Yousef M. Abdulrazzaq (PI) FITS study-nutrition in infants and toddlers (2011-2012)

Deans fund, UAEU (2012)

Dr. Fatma Al Jasmi (PI)
Inborn Error of Metabolism registry (eIEM) and screening of Mitochondrial disease

2012

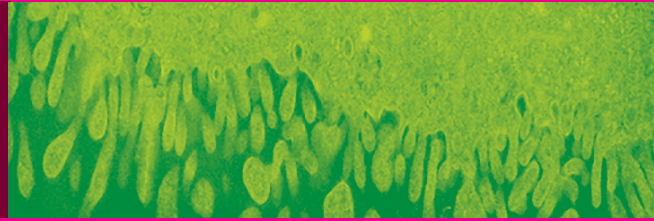
Paediatrics



Standing from left: Dr. Noura Al Dhaheeri, Dr. Fatima Al Jasmi, Mrs. Sania Al Hamad, Ms. Rose Clemente, Mr. Mohamed Jamal, Dr. Mohamed Al Samri, Dr. Ahmed Al Suwaidi, Mr. Aws Rashad

Sitting from left: Mr. Jose Kochiyil, Dr. Sheela Benedict, Dr. Suleiman Al Hammadi, Prof. Lihadh Al Gazali, Prof. Yousef Abdulrazzaq, Prof. Abdulk-kader Souid, Dr. Elhadi Aburawi, Professor Hassib Narchi, Dr. Sulaiman Bharwani

Department of Pathology



Research Profile:

Pathology is a wide-ranging discipline of laboratory medicine. It covers several fields, including histopathology, cytology, laboratory haematology, clinical chemistry, genetics and molecular biology.

Clinical chemistry: (Dr. Mukesh M. Agarwal)

In the UAE, the prevalence of diabetes mellitus (DM) is the second 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. How to screen a large population in a cost-effective manner? We are continually studying the value of various simple screening tests for GDM, 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 help our ultimate objective: to decrease the epidemic of Type 2 DM in the UAE.

Hematopathology: (Dr. Antonio Castella)

Lymphomas are malignant monoclonal disorders of the lymphatic system, which show diverse clinical features, pathology and outcome. The pathological classifications are controversial, especially with regard to non-Hodgkin's lymphomas (NHL). In recent years new classifications have been proposed which are based on modern concepts of lymphocyte function. The latest classifications of lymphomas (REAL) and (WHO) are an attempt to resolve the lack of uniformity in the reporting of malignant lymphomas by defining the different types according to morphology and immunology as well as cytogenetics.

Although lymphomas show a worldwide distribution, geographical variations in their histopathologic pattern, especially NHL, are well recognized. However, in the Middle East, and specifically in the Gulf countries, there was a paucity of data concerning the

Professor and Chair:

Prof. M Agarwal

Associate Professors:

Dr. A Castella

Dr. B Ali

Dr. S Al Salam

Assistant Professors:

Dr. A Albawardi

Dr. S Almarzooqi

Medical Research

Technologists:

Ms. A J Mathew

Ms. M Sudhadevi

Ms. M Ibrahim

Secretary:

Mr D P Ranganathan

patterns of histopathologic subtypes of lymphomas.

The Pathology department undertook a project, in collaboration with Tawam and Al Ain Hospitals, to study the pattern of lymphomas in the UAE.

The aim of this study was to analyze the distribution of the various pathologic types of lymphoma in a native Arab population of the UAE. More than 200 native patients with lymphoma were studied. The cases were examined morphologically and immunohistochemically with an extensive panel of monoclonal antibodies, and are classified according to the revised European-American classification of lymphoid neoplasms (REAL). The results were compared with the distribution of lymphomas in other Asian and Western countries.

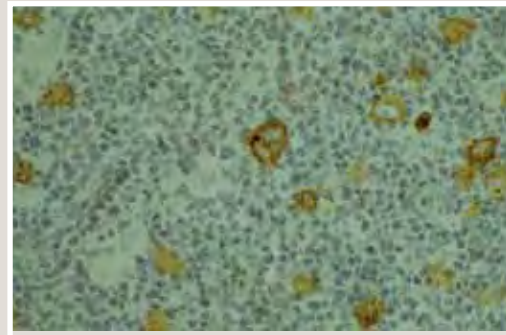
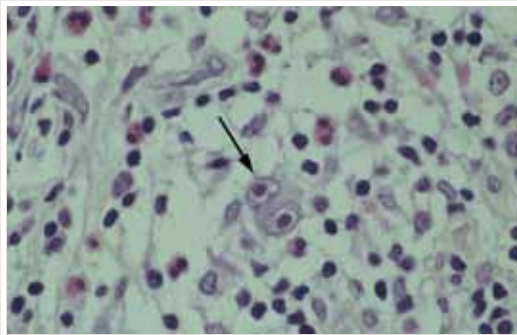
In addition, a second project studied the dif-

ferences of the distribution pattern of NHL between native UAE cases and a similar number of cases diagnosed in expatriates living in the UAE. No differences are found between the two population groups suggesting that environmental factors may play a role in the developing of NHL in the UAE.

The results of some of this work have already been published in peer-reviewed journals and presented in International Pathology and Oncology conferences.

The expression of EBV in Hodgkin lymphoma among UAE nationals was studied in collaboration with Dr. Suhail Al-Salam (PI), by immunohistochemistry for the latent membrane protein-1 and in situ hybridization for EBV encoded RNA (EBER). EBV was seen in 17 of 45 (38%) cases of HL and was predominately seen in the MC subtype followed by NS, LD and LR subtypes, respectively.

Figure:
Left side, classic binucleated Reed-Sternberg cell in a case of Hodgkin's disease (arrow) (H & E x 40), right side, immunohistochemistry with CD30 antibodies highlights the Reed-Sternberg cells (dark brown color).



Human Genetics (Dr. Bassam Ali)

Research Interests

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 UAE population with emphasis on mental retardation phenotypes, metabolic and dysmorphic disorders. We are collaborating with major re-

search 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 Dys-

plasia 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-associate 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.

Histopathology/ lymphoma/ Breast pathology / CNS pathology/Renal Pathology/ Molecular Pathology (Dr. Suhail Al-Salam)

1. Expression of EBV in Hodgkin Lymphoma among UAE nationals

The epidemiology of Hodgkin's lymphoma (HL) shows wide geographic variation in histological

subtypes and in its association with the Epstein-Barr virus (EBV). The proportion of EBV positive HL is low in industrialized countries, high in non-industrialized countries and intermediate in early-industrialized countries. Reports from the Arabian Gulf and Middle East are few. The aim of our study was to determine the epidemiology of HL in The population of United Arab Emirates (UAE) nationals, an early industrialized country in the Arabian Gulf, and to delineate the extent of its association with EBV. We review the cases of HL for the period 1988 through 2004 for histological classification and demographic data. All Cases diagnosed as Hodgkin's lymphoma were examined for the presence of EBV using immunohistochemistry (IHC) for the latent membrane protein I (LMPI) and in-situ hybridization (ISH) for EBV encoded RNA (EBER) to determine the prevalence of EBV in Hodgkin cells and its possible role in the pathogenesis of Hodgkin's lymphoma. EBV was seen in 17 of 45 (38%) cases of HL and was predominately seen in the MC subtype followed by NS, LD and LR subtypes, respectively.

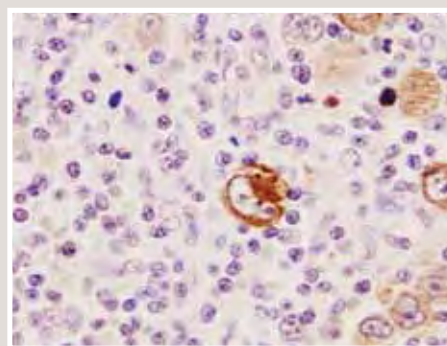
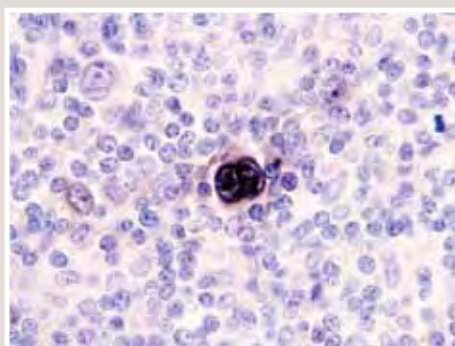


Figure:
Figure: (A) Hodgkin lymphoma with classical Reed-Sternberg cell showing dark-purple nuclear staining for EBER, in situ hybridization, X400. (B) Classical Reed-Sternberg cell showing membranous, cytoplasmic and Golgi immunoreactivity to LMP-1, streptavidin-biotin, X400

2.Types of mutations in BRCA 1 and BRCA 2 genes in breast carcinoma among United Arab Emirates nationals and their correlation with P53, Ki 67, bcl2, nm2, c-erb-B2, estrogen receptors and progesterone receptors expression.

Breast carcinoma is the most common malignant tumor and the leading cause of cancer death in women all over the world. It is the commonest cancer among UAE population and the most common cancer among females .The age specific incidence ratio for females in UAE was 19.4 per 100,000 population. It is currently estimated that 5–10% of all breast cancers are

hereditary and attributable to mutations in several high penetrance susceptibility genes, of which only two have been identified BRCA1 and BRCA.2. Earlier estimates suggested that BRCA1 and BRCA2 mutations were responsible for 75% of site-specific breast cancer families and the majority of breast and ovarian cancer families. The aim of this study is to identify the types of mutations in BRCA 1 and BRCA 2 genes in breast carcinoma among United Arab Emirates nationals and their correlation with the expression P53,Ki 67,bcl2,nm2, c-erb-B2, estrogen receptors and progesterone receptors.

3. 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 was no previous reports concerning the role of trefoil factors in the pathogenesis or progression of glioma. Our preliminary study on few cases of gliomas using immunohistochemical stains have shown expression of TFF 3 in gliomas with difference in the expression between low grade and high grade gliomas.

4. Role of Galectin 1, 3, 4, 7 and 10 in the development and progression of uterine cervical carcinoma

Uterine cervical cancer is the second most common cancer in women worldwide, and the fifth most common cancer among females in UAE. Although high-risk human papillomaviruses (HPVs) are associated with cervical carcinoma, HPV infection alone is insufficient for the malignant transformation. Hence other molecular alterations are required for the development of cervical carcinoma and galectins may play an important role in these processes. The main purpose of this proposal is to study the expression of galectin-1, 3, 4, 7 and 10 in the neoplastic cells of different types, grades and stages of human uterine cervical carcinomas. We expect that our suggested studies will clarify and elucidate the role of galectin 1, 3, 4, 7 and 10 in the pathogenesis and progression of human uterine cervical carcinoma. In this project, we will verify this hypothesis by extending our experiments on peritumoral stromal mononuclear cells as well as non-neoplastic and dysplastic uterine cervical tissues.

5. Expression of estrogen receptors alpha and beta and progesterone receptors in thyroid carcinoma among UAE Nationals

Thyroid carcinoma (TC) is the sixth most common cancer among the United Arab Emirates (UAE) nationals and the second among UAE national females. The striking gender differences in the incidence of differentiated thyroid cancer, particularly for papillary thyroid carcinoma (PTC), suggests a possible influence of hormone related factors because the higher overall incidence of female PTC is established through a sharp increase during the fertile years of life. We found a high preponderance of differentiated thyroid carcinoma among UAE female nationals during the child-bearing, which was much higher than expatriates and other studies else where. We think that this finding suggests a possible hormonal influence and needs to be thoroughly investigated. We will review the cases of thyroid carcinoma which were diagnosed in the pathology department at Tawam Hospital for the period 1988 through 2007 for histological classification and demographic data. All cases diagnosed as thyroid carcinoma will be examined for the expression of estrogen receptors alpha and beta, progesterone receptors, EGFR, c-erb-B2, c-kit, cyclin D1, bcl- xL and p53 using immunohistochemistry (IHC) as well as fluorescent in situ hybridization (FISH) for EGFR, c-erb-B2 and cyclin D1 to determine the frequency of expression of estrogen and progesterone receptors in relation to the expression of EGFR, c-erb-B2, c-kit, cyclin D1, bcl- xL and p53 in different types of thyroid carcinoma among UAE national and in comparison with their expression among expatriates. This study will enable us to understand the role of sex steroid hormones and various growth factors in the development of thyroid carcinoma among UAE nationals.

6. 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 signalling 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 is-

chemia. We hypothesized that in hypoxic myocardium, the robust expression of HIF-1 alpha 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.

Histopathology/ Breast pathology/ Renal Pathology (Dr. Alia Al Bawardi)

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

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. H. pylori in Sleeve gastrectomies: Prevalence and Rate of Complications

Prevalence of *Helicobacter pylori* has not been established in sleeve gastrectomy specimens and will be correlate with rate of post-operative complications.

3. IgG Subclass staining in Renal Biopsies with Membranous Glomerulonephritis (MGN) Indicates Subclass Switch during Disease Progression.

Most patients with idiopathic (primary) membranous glomerulonephritis (MGN) have IgG4 antibodies to the phospholipase A2 receptor (PLA2R). There are no studies addressing the IgG subclass distribution across different stages of MGN. In primary MGN most (76% of cases) were IgG4 dominant. In contrast, in secondary MGN IgG1 was dominant in 60% of biopsies ($p=0.0018$).

4. 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.

5. 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.

6. Bioenergetic Study of Murine Hepatic Tissue Treated In Vitro with Atorvastatin

Atorvastatin (a 3-hydroxy-3-methylglutaryl coenzyme-A reductase inhibitor) is a cholesterol-lowering drug, which is recognized for its potential hepatotoxicity. This study investigated in vitro effects of this agent on hepatic tissue respiration, ATP content, caspase activity, urea synthesis and histology.

7. Bioenergetics and Caspase Activation in Murine Lung Tissue Infected with RSV

Lung tissue respiration, ATP content and caspase activation were investigated in RSV-infected Balb/c and C57Bl/6 mice.

Histopathology/gynaecological and paediatric Pathology (Dr. Saeeda Almarzooqi)

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

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.

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Original Peer-reviewed Scientific articles

Akawi NA, Al-Gazali L, Ali BR. (2012). Clinical and molecular analysis of UAE Fibrochondrogenesis patients expands the phenotype and reveals two COL11A1 homozygous null mutations. *Clinical Genetics*, 82: 147-156.

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Al-Salam S. (2012). Role of Galectin- 3 in Breast Cancer Chemoresistance. *Emirates Oncology Conference*.

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RESEARCH GRANTS

CMHS Research Grant

Dr. Bassam Ali (PI), Prof L Al-Gazali (2011-2012). Elucidation of the cellular mechanisms underlying MuSK-mediated congenital myasthenic syndrome.

Dr. Bassam Ali (PI), Prof L Al-Gazali (2011-2012). Identification of the Causative Gene(s) Underlying Neonatal Progeroid Syndrome in two Emirati Families.

Dr. Suhail Al-Salam, PI. (2012): Role of TGR5 in the development and progression of colonic cancer.

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

Dr. Bassam Ali (PI), Prof L Al-Gazali (2012-2013).

The Pharmacogenomics of Warfarin Metabolism in UAE Population.

Dr. Bassam Ali (PI), Prof L Al-Gazali (2012-2013). Exome sequencing and homozygosity mapping to identify causative genes and mutations in Emirati families with recessive conditions.

National Research Foundation Grant

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

Prof. A. Nemmar (PI), Dr. S. Al-Salam, Prof. B.H. Ali (Co-investigators). Water-pipe (Shisha) smoking and hypertension: Pathophysiologic mechanisms and possible influence of antioxidant and anti-inflammatory drugs.

Terry Fox Fund for Cancer Research grant

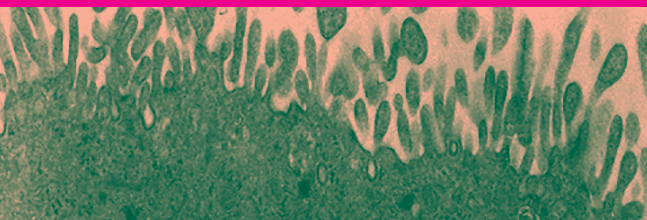
Drs. Suhail Al-Sala (PI) Mohammed Bashir, Mohammed Jaloudi. (2011-2014). Role of Galectin 1&3 in the breast cancer chemoresistance.

2012

Pathology



*Standing left to right: Dr. Bassam Ali, Prof. Mukesh Agarwal, Dr. Antonio Castella, Dr. Suhail Al-Salam
Seated left to right: Dr. Alia Al Bawardi, Dr. Saeeda Al Marzooqi, Ms. Anne Mathew, Mr. D. P. Ranganathan*



Department of Pharmacology & Therapeutics

Research Profile

Professor & Chair

Prof. A Adem

Professor

Prof. S Bastaki

Prof. MY Hasan

Associate Professors

Dr. S Attoub

Dr. M Oz

Assistant Professors

Dr. R Mohanraj

Dr. S Ojha

Dr. B Sadek

Dr. F Yousuf

Teaching Assistant

Mr. R A Beiram

Medical Research Specialist

Mr. S Dhanasekaran

Ms. K Arafat

Dr. SM Nurulain

Ms. N Amir

Mr. A Shamsulisam

Medical Secretary:

Ms S Duncan

Office Assistant

Mr. S Alikutty

*Central Facilities
(Animal House)*

Dr. M H Ali

Mr. M Shafiullah

Mr. M El Wasila

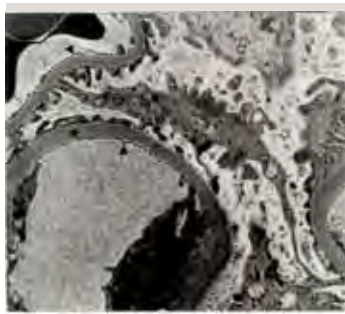
The Pharmacology Department has special interests in Diabetes and Degenerative Diseases, Neuroscience, Clinical Toxicology, Gastroenterology and Oncology. The research is done with state of the art equipment in purpose-built laboratories with good technical and other support.

Prof. 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 we 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. We have 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. Our results show significant decrease of M4, but not of M1 receptors in the hippocampus of Alzheimer's patients compared to controls. Moreover, changes in these receptors 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 is also in progress. Behavioral, biochemical and electrophysiological techniques are also used in understanding the role of other neurotransmitters in diabetes, epilepsy, aggressive behavior, aging, and degenerative diseases.

Prof. MY Hasan Neuroscience

The main line of research has been focusing on neurotransmission. We have been applying behavioral, biochemical and electrophysiological and morphological techniques in understanding the role of neurotransmitters in various disorders (diabetes, epilepsy, aging, neurodegenerative diseases). Findings indicated significant modification of specific neurotransmitters in many of the disorders. It appears that alteration in calcium mobilization and free radical system may be a common factor accounting for some of the changes observed in aging, diabetes and Parkinson's disease. Another line of research has been toxicological studies and impact of toxins on muscle the nervous system. We have investigated the effects of heavy metal Intoxication in relation to degenerative diseases. We studied impact of heavy metal toxicity on nervous system and muscle and observed that free radicals may be involved in metal toxicity and antioxidants like ascorbic acid & alpha-tocopherol may have a protective role against metals effects Also we have been looking and neurotoxicity and general toxicity

from organophosphates and nerve gases. We have been screening antidotes for organophosphate poisoning and implication for treating exposure to nerve gas agents. Furthermore my interest covered broad areas in medical education and community health. Some of the projects performed included; drug utilization and rational use of antibiotics and analgesics in health care centers and community, developing Sickness Impact Profile for studying quality of life in infertile patients, studying views of medical students and physicians of clinical skills teaching at the medical colleges and surveying patient's attitudes towards students involvement in medical practice.

Prof. Salim Bastaki

Gastroenterology: Gastrointestinal diseases have increased in recent years. Work stress, alcohol, non-steroidal anti-inflammatory drugs (NSAIDS) strong tea or coffees have contributed to the pathology. 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. Recently we published the work on new proton pump inhibitor, esomeprazole, Astra-Zeneca (accepted for publication (2008)). At present we are studying the interactions of Aspirin in combination with ibuprofen on Gastric acid and Ulcer formation in the rat in vivo and in vitro (manuscript in preparation). In the near future we are planning to study the effect of stress on the mucosa of FSL and FRL 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 offsprings than those of normal or rats.

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. There are only very few and conflicting data concerning the distribution of CYP2D6 phenotypes in Arab populations and no genotyping studies have ever been carried out. We aim to determine the frequency of the most common CYP2D6 alleles in the local population using allele specific PCR methodology and to assess the relevance of the CYP2D6 polymorphism to psychiatric practice in the UAE (published). At present, I am working on NAT2 phenotyping and genotyping in UAE nationals.

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, invasion, 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:

- a. 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.
- b. 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

complications as well as metabolic syndrome. Currently, various agents are being tested to identify novel compounds which might find their use as preventive agent or as adjuvant in treatment or as a template for future drug discovery and development in better management of ischemic heart diseases and metabolic syndrome.

Dr. Bassem Shabab Sadek

Dr Bassem Shaban Sadek focuses on pharmaco-

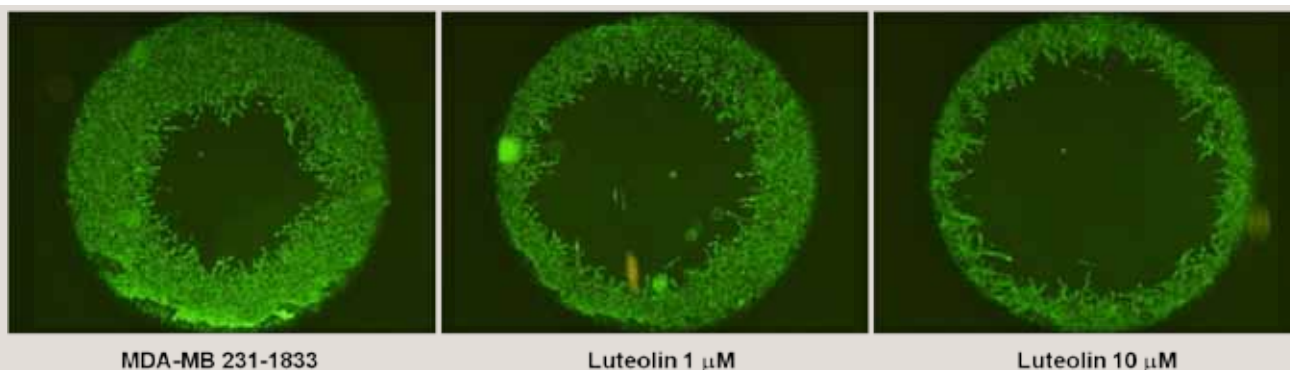


Figure 2: Dose-response effect of luteolin on Breast cancer cell invasion.

mice using various cancer cell lines will also be investigated.

Dr. Murat Ahmet Oz

Research interest of Dr. 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. Rajesh Mohanraj

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

Dr. Shreesh Ojha

Dr. Ojha focus on targeting the interplay of oxidative/nitrosative stress and inflammatory signaling and their manipulation using natural, synthetic or semisynthetic bioactive pharmacological agents in the pathogenesis in ischemic heart disease, diabetes and diabetic vascular

logical evaluation of ligands targeting cognitive disorders through interaction with centrally located Histamine H3 Receptors.

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 arteriosclerosis 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.

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RESEARCH GRANTS

CMHS Research grants-UAE

Professor A Adem.
Experimental autoimmune neuritis: Effect of TNF α . NP/12/48. 2012

Dr. S Attoub
Characterization of the ability of SMARCA1 to transactivate different subsets of target genes to orchestrate cell proliferation, migration or invasion. Project Period: 2012.

Dr. M Oz
The Effects of Monomeric, Oligomeric and Fibrillar Forms of α -Synuclein on the function of Human Dopamine Transporter. 2012

Dr. Fakhreya Yousuf (PI):
Hypoxia induction of matrix metalloproteinase-9 in a novel rat model of vascular cognitive impairment. 2012-2013.

Dr S Ojha.
To study the role of irbesartan and isorhamnetin possessing dual ARB/PPAR- γ agonist activity against myocardial ischemic-reperfusion injury in rat model of type 2 diabetes. 2011-2012.

Dr B Sadek
Faculty Grant 2011/2012: Histamine H3 Receptors as Novel Drug Targets for Therapeutic Management of Cognitive Disorders.

Dean's Discretionary Grant

Prof. S Bastaki.
Dean's discretionary Grant – 2012

UAEU Grant

Dr. Rabah. Iratni [PI], Dr. Samir Attoub [Co-PI]
Use Of Naturally Occurring Histone Deacetylase Inhibitors As Novel Anticancer Therapeutics. 2011-2013.

Emirates Foundation Grant

Prof. S Bastaki.
NAT2 acetylation phenotyping/genotyping of Emiratis. 2011-2013.

National Research Foundation Grant (NRF)

Dr. S Attoub.
Notch isoforms in cancer cell survival and invasion: who is the culprit? 2012-2014.

Dr. Rajesh Mohanraj [PI] Prof. Abdu Adem [Co-PI]

Role of neutral sphingomyelinase activation in the pathogenesis of diabetic retinopathy. 2011-2014

Terry Fox Fund for Cancer Research

Dr. S Attoub.
Effect of Frondoside A on tumour cell survival and invasion in vitro and the growth of breast tumor xenografts in athymic mice. 2012-2014.

Seed Grant Faculty of Medicine and Health Sciences

Dr. Fakhreya Yousuf (PI):
Involvement of MMP-9 in White matter damage in a novel model of vascular cognitive impairment.



2012
Pharmacology

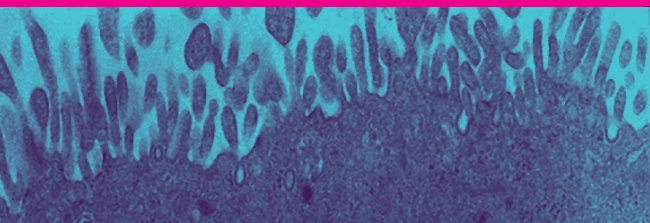


Standing left to right:

Dr. B Sadek, Dr. S Ojha, Dr. R Mohanraj, Prof. A Adem Dr. S Attoub, Dr. M Oz, Dr. M H Ali, Mr. S Dhanasekaran, Mr. A Shamsulisam, Mr. M Shafiullah, Dr. SM Nurulain, Mr. S Alikutty

Seated left to right:

Ms S Duncan, Ms. S Sulaiman, Prof. S Bastaki, Dr. F Yousuf, Mr. R A Beiram, Ms. K Arafat, Ms. H F Arafat, Ms. N Amir



Department of Physiology

Research Profile

Professor & Chair:
Prof C Howarth
Professor:
Prof TE Adrian
Prof M Fahim
Prof W Lammers
Prof M Ljubisavljevic
Prof A Nemmar
Medical Research
Specialist:
Mr J Oommen
Ms K Parekh
Mr A Qureshi
Ms B Stephen
Ms S Beegam
Secretary:
Mr P Rajagopalan
Office Assistant:
Mr Saeed C

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 a Rotenone rat model of Parkinson's 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 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.

muscle junction in various peripheral 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



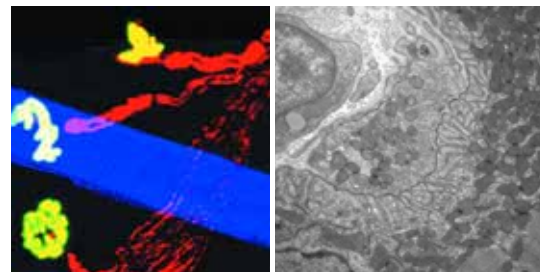
The rat with stroke induced by middle cerebral artery temporary occlusion being stimulated by TMS and the schematic depiction of TMS stimulation in a human subject.

The Experimental Clinical Neurophysiology laboratory uses various Transcranial Magnetic Stimulation (TMS) techniques, transcranial direct-current stimulation (TDCS) 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 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 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-

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 Centre', 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 techniques are used to study membrane currents. Work in the centre is supported by technical staff, undergraduate medical and science students and graduates in our M.Sc. and Ph.D. programs. Professor Howarth has ongoing collaborations with researchers in Physiology and other departments in CMHS and various international research laboratories in the UK, USA, Ukraine and other countries. Recent projects have included the progressive changes in expression of genes encoding Ca^{2+} signalling proteins and remodelling of Ca^{2+} proteins in type 2 diabetic heart, the effects of exercise training on heart function in the Goto-Kakizaki type 2 diabetic rat and a project to investigate the electrophysiology of atrioventricular node cells in type 1 and type 2 diabetic heart. 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 and LABCO a partner of Sigma-Aldrich.



Research collaborator Dr Kathryn Yuill – University of Plymouth, UK

Mapping laboratory

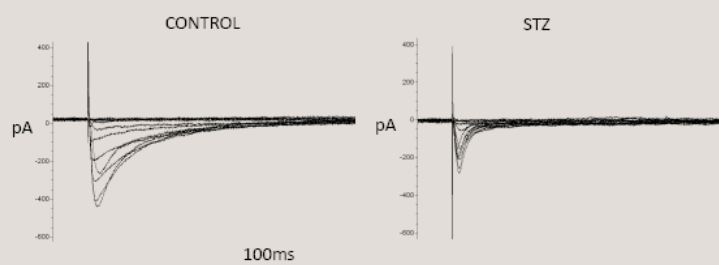
Work has proceeded very well in 2012 with major research developments obtained both in the mapping lab in Al Ain and through our collaborations with other laboratories around the world.

We have now published our work in the emerging field of gastric arrhythmias with our analysis and publication of spontaneous arrhythmias and propagation disturbances that occur in gastroparetic patients in Gastroenterology. This work is again part of a successful collaboration with the Pullan/Cheng group at the Bioengineering department at Auckland University, New Zealand together with Drs Farrugia and colleagues in Rochester (Mayo Clinic, Rochester, USA) and with the Gastroparesis group at Jackson, Mississippi (Abell, Lahr) USA. This work also attracted the attention of Nature, which subsequently published a description of our work. In Al Ain, we have continued our collaborative work with Dr Hamad Fayed (Dept. of Surgery) on the origin and propagation of impulses in the isolated bladder in guinea pigs and discovered that propagation occurs in limited areas which we termed 'patch' and that these patches are mainly oriented in the longitudinal direction of the organ which may be important for its function. And, this year, we published a paper in the American Journal of Physiology (GI-section) in which, for the first time, a reentrant arrhythmia was demonstrated in the small intestine, in diabetic rats, part of a very successful project that had already lead to several papers in previous years, in collaboration with Professor S Karam (Dept. of Anatomy).

Aside from our work in the GI and in the urological system, our continuous work on the preg-



Photographs of atrioventricular node cells from control (left) and diabetic (right) heart



Typical records of L-type calcium current in atrioventricular node cells from control (left) and diabetic (right) heart

nant uterus has attracted interest in the form of an invitation to present a one-hour talk on the electrical activities in the pregnant myometrium (San Diego, US). This presentation was then invited to be submitted as a review on this topic and will be published in the upcoming February issue of Reproductive Sciences.

Other collaborative achievements, in Al Ain or elsewhere have been:

- a) Several visits by Dr Sandeep (Ras Al Khaima College of Medical Sciences, RAK) to develop a new project (effects of ethanol on slow wave propagation in the small intestine).
- b) Following on our successful presentation

on the origins of myometrial contractions and electrical activities (San Diego), a collaboration ensued with Andrew Blanks, Warwick Medical School, UK. In this collaboration, a pregnant myometrium of the rat is first mapped electrically in Al Ain and then fixated and send by courier to Blanks' laboratory in the UK for immunohistochemistry. The purpose of this collaboration is to identify the cells responsible for pacemaking in the pregnant uterus.

- c) In June, I was kindly invited by the Vice-Chancellor of RAK Medical & Health Sciences University, Dr SG Rao, to give a talk on "Development of Biomedical Research in the UAE".

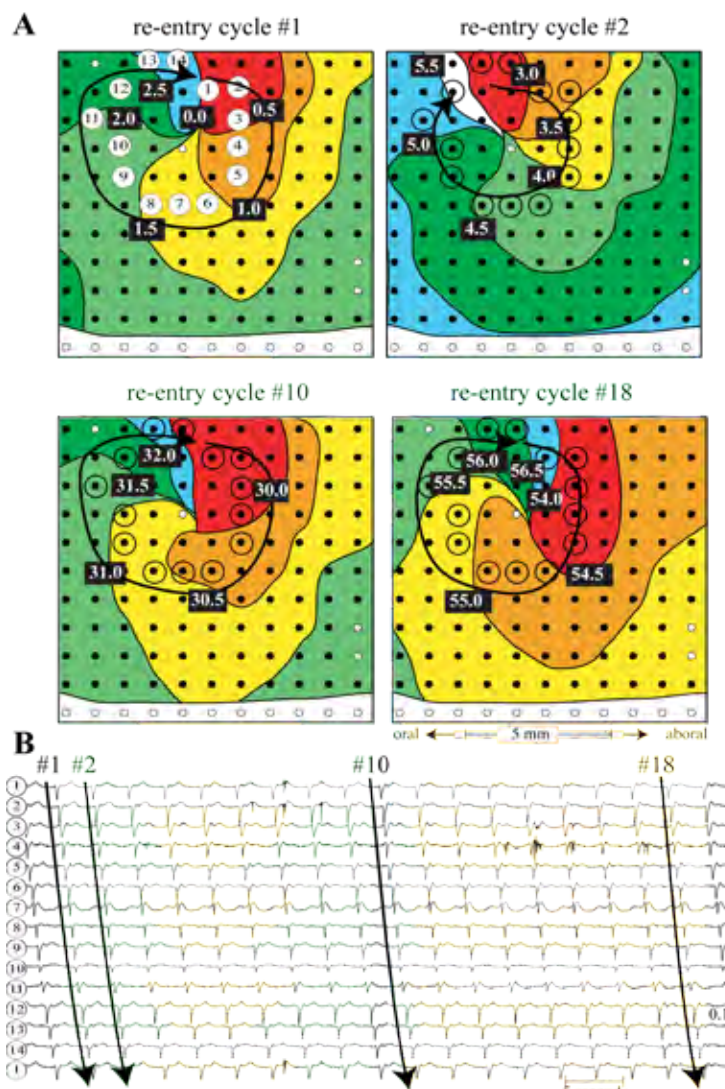


Figure:

Example of a stable reentry located in the isolated jejunum from a 7-mo diabetic rat. Top: 4 maps in which a wave front was seen rotating clockwise in the upper middle part of the mapped area. Isochrones are drawn in steps of 0.5 s. Bottom: 14 electrograms recorded along the pathway of this circus movement. The locations of these electrodes are indicated in the upper maps. Electrogram 1 was repeated below electrogram 14 to illustrate the continuity in propagation. As indicated by the maps and the electrograms, this circus movement was present throughout the period of recording (60 s), revolving at least 19x in a clockwise direction. A few spikes occurred during the arrhythmia, especially at electrodes 1–4. An animation of this reentry is available online at www.smoothmap.org.

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 medical complications life-threatening but the cost of treatment is imposing enormous and increasing strains on national health budgets. In my laboratory we are studying mechanisms underlying the effects of air pollution on diabetes, hypertension and renal failure. We are searching for 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.

The cancer laboratory

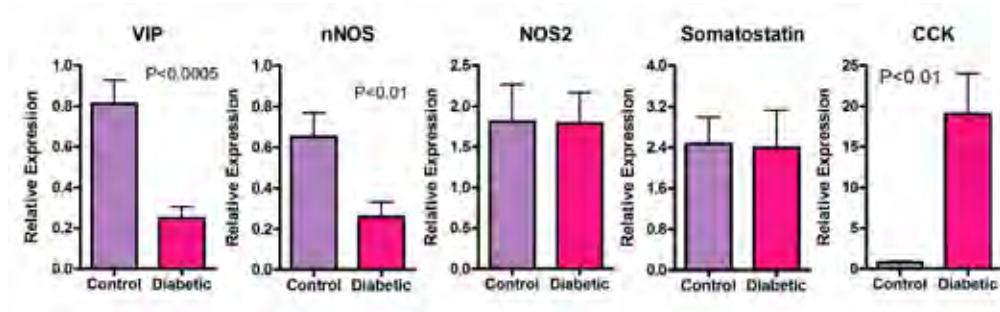
The overall thrust of the pancreatic cancer program is elucidating the molecular mechanisms underlying its rapid growth and invasion and in developing novel strategies to treat it. Prof. Adrian investigates various aspects of this pancreatic cancer, including growth and differentiation signaling pathways, the role of the

lipoygenase 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.

Diabetic neuropathy and retinopathy

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



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.

control of bladder function, these changes are likely to explain the erectile dysfunction and 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.

Clinical studies on lower gastrointestinal 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 with chronic administration of bile salts.

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Yang KHS, Mahgoup M, Ashoor A, Howarth CF, Galadari S, Oz M. (2012). Effects of cannabidiol on human $\alpha 7$ -nicotinic acetylcholine receptors, *Neuroscience*



Proceedings, Conferences, Invited Lectures, Web Sites and Others

Howarth FC, Qureshi MA, Hassan Z, Isaev D, Parekh K, John A, Oz M, Adeghate E, Adrian TE. (2012). Contractility of ventricular myocytes is well preserved despite altered mechanisms of Ca^{2+} transport and a changing pattern of mRNA in aged type 2 Zucker diabetic fatty rat heart, *World Congress of Cardiology*, World Heart Federation, Dubai International Convention & Exhibition Centre, Dubai, UAE, Circulation, 125:e659-e740, 0090.

Lammers WJEP. (2012). Development of Biomedical Research in the UAE. *RAK-MSHU* June 5th.

Lammers WJEP. (2012). In search of the pacemaker site in the pregnant uterus. *59th meeting of the Society for Gynecologic Investigation*. San Diego, March 21-24.

Lammers WJEP. (2012). The propagation of electrical signals in Interstitial Cells of Cajal networks. *VIIth International Symposium on Interstitial Cells of Cajal*. Florence, September 2-5.

Ljubicavljjevic M, Oommen J, Asma J, Parekh K, Adrian TE, Jovanovic K. (2012). Changes in gene expression after repetitive transcranial magnetic stimulation and sub-acute ischemic brain injury in the rat. *Poster No 249.15 (I9)*, Session listing 111-301, *Society for Neuroscience Annual Meeting*, New Orleans, USA, October 13-17.

Raza H, Howarth FC, John A. (2012). Increased oxidative stress and mitochondrial dysfunction in Zucker diabetic fatty rat tissue, *American Association for Cancer Research Annual Meeting*, Chicago, USA.



RESEARCH GRANTS

CMHS New Research Grants

Profs FC Howarth (PI), E Adeghate, H Raza, Mr RS Hameed, Ms A John, Mr A Qureshi
Alterations in calcium signalling and cardiac muscle proteins underlie contractile dysfunction in Zucker diabetic fatty rat heart.

Prof WJEP Lammers WJEP (PI), B Stephen, D Subramanyan
External pacing of the stomach and the small intestine

Profs E Adeghate (PI), FC Howarth
Localization of apolipoprotein A-1 and its effect in the pancreas of a rodent model of type 2 diabetes.

Prof A Nemmar (PI), Dr S Al-Salam
Pathophysiologic mechanism of the cardiovascular and pulmonary effects of particulate air pollution in a mouse model of hypertension: Possible protective effect of curcumin. (2011-2012).

Profs. TE Adrian (PI), Eric Mensah-Brown, F. Christopher Howarth.
VIP and PACAP in the Diabetic Heart.

Dr O. Bakouch (PI), Prof. A. Nemmar, Mr D. Subramanian, Dr A. Abdulle.
The glomerular functional changes in diabetic diseases: An experimental approach

Prof WJEP Lammers (PI), Ms B Stephen, Dr M Al Sultan
Mismatch between electrical and contractile activity in the pregnant rat uterus.

Dr F Hammad (PI), Prof WJEP Lammers
Regional distribution of spontaneous electrical activities in the isolated guinea-pig urinary bladder.

Prof M Ljubisavljevic (PI)
The influence of two electrical afferent stimulation paradigms on muscle fatigue related brain excitability and performance of a complex motor task.

Prof M Ljubisavljevic (PI)

The effects of Repetitive Transcranial Magnetic Stimulation (rTMS) on brain gene expression in the neuropathic pain rat model.

UAEU Individual Grants

Profs FC Howarth (PI), K Yuill, E Adeghate
Electrical remodelling of the atrioventricular node in diabetes. [21M064] – 2011-2014

UAEU Interdisciplinary Grants

Prof MA Fahim (PI)
Ghrelin and recovery after anti-neoplastic and cytotoxic therapy.

Profs FC Howarth (PI), TE Adrian, Dr M Jacobson, Profs M Ljubisavljevic, E Adeghate
Effects of exercise training on heart function in the Goto-Kakizaki type 2 diabetic rat [1426-08-02-10] – 2010-2012.

Sheikh Hamdan Award for Medical Sciences

Profs FC Howarth (PI), TE Adrian, Dr M Oz, Prof H Raza, Mr Qureshi A, Ms Parekh K, Ms John A, Mr Kury L, Mr Salem K.
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]

Prof A. Nemmar (PI), Dr S. Al-Salam, Prof. E. Kazzam
Mechanisms of adverse pulmonary and cardiovascular effects of particulate air pollution. [2010-2012].

Terry Fox Fund for Cancer Research

Profs TE Adrian (PI), F Safi, Dr. P Collin.
Effects and Mechanism of Frondoside A, a Novel Anti-Cancer Agent. [2010-2012].

Profs TE Adrian (PI), F Safi, Dr P Collin
Marine Mussel Oil for Cancer Treatment [2010-2013].

Emirates Foundation Grant

Profs. TE Adrian (PI), JFB Morrison, A Perrin, 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 [2010 -2012]

Profs FC Howarth (PI), TE Adrian, E Adeghate, Drs M Oz, Al-Minhali
Progressive changes in expression of genes encoding Ca²⁺ signalling proteins and remodelling of Ca²⁺ proteins underlies cardiac muscle dysfunction in type 2 diabetic heart.[2010-2012]

Prof E Kazzam (PI), Dr I Hassan, Prof A Nemmar.
Cardiac remodeling and ventricular interaction in patients with Thalassemia Major: Detailed Echocardiographic and Magnetic Resonance Imaging Evaluation in relation to Neurohormones and Collagen markers. (2011-2013)

Dr C Leduc (PI), Prof M Ljubisavljevic
Determinants of motor coordination development in obese children. Emirates Foundation. (2010-2012)

National Research Foundation Grant

Prof. Thomas E. Adrian (PI).
Improving cancer therapy, 2011-2013.

Profs L Al-Gazali (PI), EA Adeghate, TE Adrian, BK Al-Ramadi, OM El-Agnaf and Dr. BR Ali.
Genes and Diseases Research Center of Excellence. [2010-2015].

Dr S Shehab (PI), Prof M. Ljubisavljevic (2010-2013)
How does Deep Brain Stimulation work?

Profs M. Ljubisavljevic (PI), T Adrian, Dr S. Shehab
The mechanisms of Repetitive Transcranial Magnetic Stimulation (rTMS) induced modulation of brain plasticity in health and disease (2010-2013)

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]

Prof S Shehab (PI), M Ljubisavljevic
Neuropathic pain due to trauma and inflammation of the viscera.

Others

**UAEU-Sultan Qaboos University
joint collaboration Grant**

Prof. A. Nemmar (PI), Prof. B.H. 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.

Profs TE Adrian (PI), S Gariballa, H Saadi, Dr. J Al-Kaabi.
Release of Rectal Hormones for Weight Loss and Improvement of Type 2 Diabetes Mellitus. Satiogen Inc, San Diego, California, USA.

Profs. TE Adrian (PI). Characterization of TTMP a new tumor suppressor gene.
Joachim Leitner Foundation, Dubai.

Awards

Prof A Nemmar received the CMHS
Excellence in Teaching Award
2011-2012



2012

Physiology

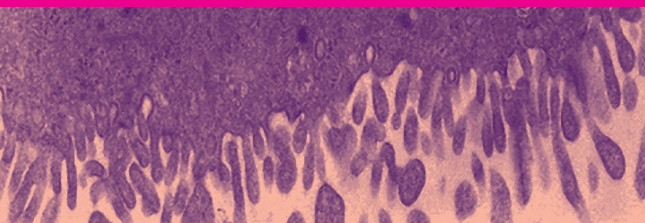


Standing left to right:

Dr Nadia Hussain, Prof Thomas E Adrian, Mr Mohamed A Qureshi, Mr P Rajagopalan, Prof Abderrahim Nemmar, Prof Wim Lammers, Prof Milos Ljubisavljevic, Mr Joji Oommen, Mr Said Ali Kutty, Ms Norin Nabil

Seated left to right:

Ms Amal Al Haddad, Ms Khatija Parekh, Prof Mohamed Fahim, Prof Chris Howarth, Ms Priyadarshini Y, Ms Betty Stephen, Ms Sumaya Beegum, Ms Asma Javid



Department of Psychiatry and Behavioural Sciences

Professor & Chair:

Prof Omer El-Rufaie*

Prof Hamdy F. Moselhy

Professor:

Prof. Rafia Ghubash

Associate Professors:

Dr Kanita Dervic

Dr Ossama T. Osman

Assistant Professor:

Dr Amr Abdel Aty

Dr Leena Amiri

Dr Mahmoud Awara

Research Technician:

Ms Fadwa Almogaddam

Mr Said Yousef

Secretary:

Ms Aisha Al Shamsi

Clerk II:

Mr O. Pocker

*left in June 2012

A. Departmental Profile and Research Themes:

1. Epidemiological aspects of common mental health disorders in primary health care and community settings

(a) A study of the prevalence, socio-demographic correlates and co-morbidity of premenstrual dysphoric disorder in the primary care. (Dr. O. Osman).

(b) A 10-year Retrospective study of the prevalence and correlates of various psychiatric diagnoses among inpatient admissions to Al-Ain Hospital. (Dr. O. Osman).

(c) Suicidal behavior and suicide prevention in childhood and adulthood. (Dr. K. Dervic).

(d) Affective and anxiety disorders in childhood and adolescence. (Dr. L. Amiri).

(e) Life satisfaction among older adults in UAE. (Dr. H. Moselhy).

(f) The association of mental disorders with unhealthy behaviours among adults in UAE (Dr. H. Moselhy).

(g) Excessive TV/Videogames viewing time and behavioural disorders among UAE children (S. Yousef)

2. Personality, psychosocial and trans-cultural aspects of physical illness

(a) Association of Irritable Bowl Syndrome with personality traits and with anxiety and depressive disorders. (Prof. O. El Rufaie).

(b) Psychological and social intervention in patients undergoing bariatric surgery. (Dr. O. Osman, F Almogaddam, E Emam).

(c) Behavioral, social and Functional morbidities among Bariatric Surgery patients in the UAE (Dr. O. T. Osman)

(d) Depressive disorders as a risk factor in susceptibility to coronary heart disease. (Dr. H. Moselhy).

(e) Relation of brain lesion and apathy, depression, cognition and

daily function in stroke patients. (Dr. H. Moselhy).

3. Cultural aspects of psychiatry

(a) Cross-cultural child and adolescent psychiatry. (Dr. K. Dervic).

(b) A survey of Psychodermatology for Middle eastern Dermatologists (Dr. O.T. Osman and F Almogaddam).

4. Collaborative Research

(a) 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).

(b) A study of Radiologic Correlates of Psychiatric Disorders: A 3 years retrospective study of electronic data base in collaboration with Al Ain Hospital (O Ossamma, A Muffaddal and F Almogaddam)

(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)

(d) Epidemiology and qualitative Characteristics of Smoking 'Midwakh; and tobacco in the UAE. A joint Partnership research with New York University Abu Dhabi (O.T. Osman)

(e) Pattern of heroin use among Egyptian population: positive gate way hypothesis (H Moselhy)

(f) Family profile among drug user in Mansoura, Egypt (H Moselhy)

(g) The rate of HIV among Egyptian adults drug users (H Moselhy)

(h) Substance use, depression and suicidality in teenagers in the UAE (Dr. K. Dervic)

(i) Suicidal behavior and attitudes among university students (S. Yousef)

(j) Depression associates with factors influencing the carrier choices among university students (S. Yousef)

(k) Depression and self-esteem among adolescents in UAE (S. Yousef)

5. Women's Mental Health

(a) A study of Symptoms Expression of PMDD in Women in the Primary Care. (Dr. O. Osman).

6. Postgraduate Education and Training

(a) Arab Board Curricular development in psychiatry (Dr. O. Osman).

(b) Accreditation Survey of Arab Board programs for structural and procedural organizations (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).
- The perceived stress (PSS)

8. Biological Psychiatric Research:

• Identification and Determination of Alleles and Genotypes Frequencies at the CYP2D6 Gene in Emiratis with mood disorders. (O.T. Osman)

• Characteristic metabolites of Dokha smoking in Human serum using Gaschromatographic method with mass spectrometry. (O.T. Osman)

• Group IVA phospholipase A2: A potential marker for schizophrenia (Dr. H. Moselhy)

• Molecular genetic study of schizophrenia in Arab population (Dr. H. Moselhy)

• Impact of heavy metals and other environmental risk factors on childhood mental health (Said Yousef).

9. Addiction Research:

Characteristics of smoking dokha in young men in Qatar and United Arab Emirates (Dr. O.Osman)

Original articles in peer reviewed journals

Moselhy H, Gubash R, El Rufaie O, Zubaidi T, Sufian Sabri, Yousef S. (2012) the association of depression and anxiety with unhealthy lifestyle among UAE adults. *Epidemiology and Psychiatric Sciences Journal*, 21:213-219.

Moselhy H, Ehsan Fahmy, Victor Samy, Hussain El Shiekh. (2012). emotional control in patients with opioid dependence syndrome and reported history of negative life events. *Addictive Disorders and their Treatment Journal*, 11 (2):93-100.

Osman OT, Augusterfer EF. (2012). Telepsychiatry. *Acad Psychiatry*. 2012 Jul 1;36 (4):345-6.



Proceedings, Conferences, Workshops, Invited Lectures, Web-sites and others

Dervic K, Amiri L, Niederkrotenthaler T, Yousef S, Voracek M, Sonneck G. (2012). Completed suicides in Dubai, UAE. 8th Pan-Arab Psychiatric Conference, 29.11-1.12.2012, Dubai, UAE

Dervic K, Amiri L, Niederkrotenthaler T, Yousef S, Voracek M, Sonneck G. (2012). Suicide rates in Dubai, United Arab Emirates. 3rd Conference, 14-15 December 2012, Abu Dhabi, UAE

Dervic K. (2012). ADHD – Diagnosis and Management, Pediatric Outreach Program, 13-14.10.2012, Dubai, UAE

Dervic K, Amiri L, Niederkrotenthaler T, Yousef S, Voracek M, Sonneck G. (2012). Suicide rates in Dubai, United Arab Emirates. 6th Biennial Congress of the Interna-

tional Society for Affective Disorders, 18-20 April, 2012, London, UK, p. 334

Emam E, Osman OT, Almugaddam F. (2012). Anxiety and depression among patients with obesity referred for Bariatric Surgery. 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE November 28-December 1, 2012.

Emam E, Osman OT, Almugaddam F. (2012). Impact of Body Image On the Quality of Life Among Patients with Morbid Obesity Referred for Pre-operative Psychiatric Assessment Prior to Bariatric Surgery. Fourth Annual SEHA Research Conference, Yas Viceroy Hotel, Abu Dhabi, December 10-11, 2012.

Higgins K, Denaro C, Berry G, Abdel Aty A, Tibbo P. (2012). Help seeking pathways for first-episode psychosis in urban and rural communities. Dolhousie department of psychiatry research day, Halifax, Canada, 16 November 2012.

Moselhy H. (2012). Cannabis is a gateway and culture specific drug for Egyptians from Ramses the II till modern days. 12th PanArab Psychiatric conference: 29th Nov-1st Dec, Dubai.

Moselhy H. (2012). Death anxiety among drug dependents in an Arabic psychiatric hospital. 12PanArab Psychiatric conference: 29th Nov-1st Dec, Dubai.

Moselhy H. (2012). Psychosocial hazards in health care workers. WHO Occupational health for health care workers, Dubai, 06 November 2012.

Mufaddel A, Osman OT. (2012). Body Dysmorphic Disorder between Psychiatry and Dermatology: A Literature review, The 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE November 28-December 1, 2012.

Osman OT (2012) Combating Secondary Trauma, The 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE

November 28-December 1, 2012.

Osman OT. (2012). Introducing Trauma Informed care: Relevance to Psychiatry in The Arab World, 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE November 28-December 1, 2012.

Osman OT. (2012). Combating Secondary Trauma, 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE November 28-December 1, 2012.

Osman OT. (2012). Interpersonal Violence in the United Arab Emirates: Results from Al-Ain Trauma Registry. 12th Pan Arab Psychiatric Conference. Al Bustan Rotana Hotel, Dubai, UAE November 28-December 1, 2012.

Osman OT. (2012). Caring For Those Who Care: Combating Compassion Fatigue. The Second International Congress of the Jordanian Association of Psychiatrists, Landmark Hotel Amman – Jordan, 6 – 8 June 2012

Osman OT. (2012). Prevalence and sociodemographic correlates of premenstrual dysphoric disorder in the Gulf city of Al-Ain – United Arab Emirates. The Second International Congress of the Jordanian Association of Psychiatrists, Landmark Hotel Amman – Jordan, 6 – 8 June 2012

Osman OT. (2012). Measurement Based Care: The Use of the Arabic Versions of the MINI and the SDS in clinical practice, education and research ?. The Second International Congress of the Jordanian Association of Psychiatrists, Landmark Hotel Amman – Jordan, 6 – 8 June 2012

Osman OT. (2012). Introducing Trauma Informed Care Approach in the Context of the UAE and the Gulf Region. Fairmont Bab Al Bahr Abu Dhabi, September 30th 2012.

Osman OT. (2012). Trauma-Informed Care, Substance Abuse and its impact on Vulnerable Groups in the region. Fairmont

Bab Al Bahr Abu Dhabi, October 1st 2012.

Yousef S, Eapen V, Zoubeidi T, Mabrouk A, Shah S, Souid A, Dervic D. (2012).

Impact of TV/Videogames viewing time on behavior of UAE children. The 2nd GCC conference for children and adolescents Conference, Sharjah, 23-25 April 2012.

Yousef S, Eapen V, Zoubeidi T, Mabrouk A. (2012). Excessive TV/ Videogames viewing time and behavioral disorders among UAE children. 11th Conference of the Canadian Rural Health Research Society Rural and Remote Health Research: Creative Approaches, Québec, October 25 – 27, 2012.

Yousef S, Eapen V, Zoubeidi T, Mabrouk A, Shah S, Souid A, Dervic D. (2012). Impact of Excessive Television and Videogame Viewing Time

on Childhood Behavior: A Study from the UAE. Fourth Annual SEHA Research Conference. Yas Viceroy Hotel, Abu Dhabi, December 10-11, 2012.



Research Grants

Emirates Foundation Research Grant

Dr. K Dervic (PI)
Substance use, depression and suicidality among teenagers in the UAE.

National Rehabilitation Centre

Prof TC Aw [PI], Drs OT Ossama, I Blair, T Zoubeidi. Drug and alcohol addiction awareness in the UAE.

Global Health Institute Grant.

Drs R Mollica [PI], OT Osman [Co-PI], J Lavelle, L Naser et al (2011-2012).

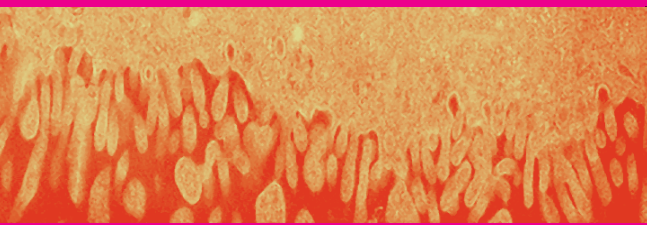
Building Capacity and Partnership For Excellence in Mental Health: A joint UAEU Collaboration Between UAEU and Harvard Medical School- H RTP.

UK, Aberdeen Research Group Grant

Prof. H. Moselhy (PI)
Group IVA phospholipase A2: A potential marker for schizophrenia:



2012
Psychiatry



Department of Radiology

Research Profile

Professor & Chair (till 6-2012):

Prof. P.D. Corr

Professor & Vice Dean:

Prof. R.D. Langer

Associate Professor & Chair

(from 6-2012):

Dr. K.F.W. Neidl van Gorkom

Teaching Assistant

Dr. T. Al Mansour

Administrative Assistant:

Ms. R. Qayed

The department's research concentrates on areas relevant to the health care needs of the UAE: cancer imaging, radiological contrast agents, renal stone imaging, liver fibrosis and complications of thalassemia, imaging of genetic diseases and neuro-imaging.

Prof. Peter Corr's researches imaging of integrin receptors on cancer cells using nanoparticle for Magnetic Resonance Imaging (MRI). Integrin receptors are overexpressed in many common solid cancers. The ability to detect overexpression by MRI promises to improve the sensitivity of early cancer detection. A second area of research is the prediction and detection of complications of the heart and liver in thalassemia patients using MRI. Other areas of interest are improving the quality of radiology reports by using double reading of Computed Tomography (CT) studies and projects in Medical Education.

Prof. Ruth Langer and Dr. Klaus Neidl van Gorkom were researching the use of Dual Energy CT imaging for the differentiation of urinary stones in a prospective clinical study. They have also investigated nephrogenic systemic fibrosis (NSF) in an animal model, a serious complication following the injection of GBCA for MRI in patients with different underlying diseases. A long term project is the local development in sophisticated neuro-imaging like MRI spectroscopy, tensor-imaging and functional MRI.

Articles in Peer-reviewed Journals

Conca W, Ghatasheh G, Al-Salam S, Neidl Van Gorkom K. (2012). The medical odyssey of a boy with arthritis of familial Mediterranean fever. *Int J Rheum Dis.* 2012 Apr; 15(2):e37-9.

Corr P. (2012). Using e-learning movies to teach radiology to students. *Med Educ.* 2012 Nov; 46(11):1119-20.

Corr P. (2012). Sonography of gangrenous cholecystitis. *J Emerg Trauma Shock, Jan;* 5(1):82-3.

Corr P, Szólics M. (2012). Neuroimaging findings in acute ethylene glycol poisoning. *J Med Imaging Radiat Oncol.* Aug 56 (4); 442-4.

Corr PD. (2012). Case report: recognizing pneumatosis intestinalis: a case of bowel ischemia presenting as renal colic. *Case Rep Radiol.* Epub.

Hefny AF, Corr P, Abu-Zidan FM. (2012) The role of ultrasound in the management of intestinal obstruction. *J Emerg Trauma Shock.* Jan; 5(1):84-6.

Langer RD, Neidl van Gorkom KFW, Mahmoud Mohamed N, Fuchsjaeger M, Lehtovirta J, Hamed AA (2012). Dual-Energy Computed Tomography for non-invasive differentiation of renal stones. *Fortschr Roentgenstr* 2012; 184:5 285.

Langer RD, Lorke DE, Neidl van Gorkom KF, Petroianu G, Azimullah, Nurulain SM, Singh S,

Fuchsjaeger M. (2012). In an animal model nephrogenic systemic fibrosis cannot be induced by intraperitoneal injection of high-dose gadolinium based contrast agents. *Europ J Radiol* 81: 2562-2567.

Neidl van Gorkom K, Mahmoud MMN, Usmani A, Fahim M, Labada FGT, Petroianu G, Lorke D, Langer RD. In vitro Bestimmung von Gadolinium im Gewebe nach Langzeit-IP- Gadolinium-Injektion bei Ratten. *Fortschr Roentgenstr* 2012; 184:5 279.

Szólics M, Chaudhry M, Ljubisavljevic M, Corr P, Samir HA, Neidl van Gorkom K. (2012). Neuroimaging findings in a case of fluoxetine overdose. *J Neuroradiol,* Oct; 39(4):254-7.

Published Abstracts, Letters and Correspondence

Langer RD, Al-Gazali L, Neidl van Gorkom KFW. (2012). New results in survivors with Stueve-Wiedemann syndrome. *Eur J Radiol (S) Abstracts* 2012; 10.1594/ecr2012/C-0069

Langer RD, Neidl van Gorkom KFW, Mahmoud MN, Fuchsjaeger M, Lehtovirta J, Hachem AA. (2012). Dual energy computed tomography for non-invasive differentiation of renal stone composition. *Eur J Radiol (S) Abstracts* 2012; 10.1594/ecr2012/C-0079

Neidl van Gorkom K, Mohamed NM, Usmani A, Fahim M, Petroianu G, Lorke DE, Langer RD. (2012). In vitro determination of gadolinium deposition in tissue after long-term IP GBCA injection in rats. *Eur J Radiol (S) Abstracts* 2012; 10.1594/ecr2012/C-0088.

Proceedings, Conferences, Invited Lectures, Websites and others

Langer RD, Neidl van Gorkom KFW, Obaid Al Kaabi H. (2012). Prospective comparative clinical trial of two imaging protocols in patients with acute stroke. 8th World Stroke Congress.

Langer RD, Baasanjav S, Al-Gazal L, Hashiguchi T, Mizumoto S, Fischer B, Horn D, Seelow D, Ali BR, Aziz SAA, Langer R, Saleh AAH, Becker C, Nuernberg G, Cantagrel V, Gleeson JG, Gomez D, Michel J-B, Stricker S, Lindner TH, Nuernberg P, Sugahara K, Mundlos S, Hoffmann K. (2012). Defect initiation of proteoglycan synthesis in patients with joint dislocations, bicuspid aortic valve and other heart defects. Annual Meeting of the European Genetics Conference, Nuernberg.

2012

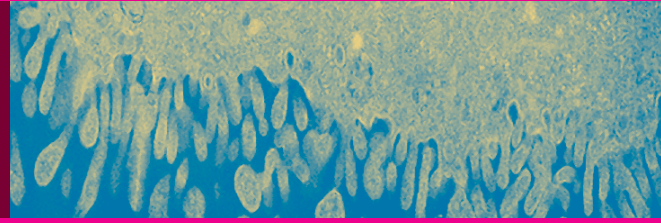
Radiology



*Standing left to right:
T Al Mansour, Dr K Van
Gorkom, R Qayed, Prof R
Langer, Prof P Corr.*

www.cmhs.uaeu.ac.ae/Radiology Tel: 7672000 / Fax: 76722067

Department of Surgery



Research Profile

Faculty members in the Department have now increased from four (1999) to twelve currently, seven of whom are UAE nationals (two 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 held Consultant privileges at Al Ain and Tawam Hospitals.

Professor Frank Branicki

Prof. Branicki's 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 oesophago-gastric cancers. He has been an Instructor for 51 Advanced Trauma Life Support (ATLS) Courses, most as 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 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

Professor & Chair:

Prof FJ Branicki

Professor:

Prof F Safi

Dr F Hammad

Prof F Abu-Zidan

Associate Professor:

Dr F Torab

Assistant Professor:

Dr A Jawas

Dr S Al Thani

Dr T Al Mahmoud

Dr A Al Belooshi

Dr Z Al Fardan

Teaching Assistant:

Dr Essa Al Essa

Dr M Ali Al Ali

Research Support:

Dr A Hefny

Dr A Abbas

Mr L Lubbad

Administrative Support:

Mr A C Jamal

Mr C Aboobacker

Ms K Al Ghanem



a Fellow of the American College of Surgeons in San Francisco in October 2011.

Professor Farouk Safi

Prof. Farouk Safi's clinical interests in colorectal and hepatobiliary surgery have led to presentations at national and overseas meetings. His contributions in 2012 have included lectures in Dubai, Germany and Malaysia. Currently, Prof Safi's 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 hepatocellular carcinoma, rare liver tumors are new areas in which he has developed an interest. In May 2012 three presentations were made during the Annual Meeting of the Royal Australasian College of Surgeons in Kuala Lumpur.

Professor Fikri Abu Zidan

In 2012 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 is effectively leading the Trauma Research Group of the FMHS with collaborative work involving the Departments of Community Medi-

cine and Radiology (FMHS), and Departments of Surgery, Critical Care, Emergency Medicine and Radiology at Tawam, Al Ain and Al Rahba Hospitals. In 2012, he published 20 articles/reviews in international refereed Journals and gave 16 invited lectures in international conferences. At present he is studying the impact of trauma training on clinical outcome, biomechanics of injury, methods of injury prevention, and 'point-of-care' emergency abdominal ultrasound. He has been able to raise external funds to appoint a Research Fellow (Dr Alshafi Mohammad). Professor Abu-Zidan was the Chair of the Organizing Committee of the 8th Middle East Trauma Conference in 2012 in Abu Dhabi (October). Professor Abu-Zidan continued scholarship activities being a Guest Editor for one symposium on emergency sonography for the Journal of Emergencies, Trauma and Shock and has been selected to be the Statistical Editor for Hamdan Medical Journal.

Professor Fayeze Hammad

Promoted to Full Profession in 2012 Prof. Fayeze Hammad has particular clinical interests in minimally invasive surgery for renal stone disease and oncology in particular. He is the Founding Program Director for the recently established residency training program in Urology which is currently under the auspices of HAAD (Health Authority of Abu Dhabi).



Prof. Fayed Hammad completed the study on 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 was presented as a podium presentation in the American Urological Association Annual Meeting, Atlanta GA, May, 2012. The manuscript has been submitted for publication. The research was funded by an Individual Research Grant from, CMHS, United Arab Emir-

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 the glomerular permeability will be studied. All these experimental studies were performed in collaboration with Dr. Loay Lubbad, research



ates University (2011). With Prof. Wim Lammers, Prof. Hammad has also started a new project on 'Slow wave conduction disturbances proximal and distal to ileal end-to-end anastomosis following ileocystoplasty'. The initial results were presented in the Joint International Neurogastroenterology and Motility Meeting, Bologna, Italy, September 2012.

From the experimental work performed at the Research Laboratory, Department of Surgery (CMHS), Prof. Hammad also completed a study of 'Curcumin provides incomplete protection of the kidney in ischemia-reperfusion injury'. The study was funded by an individual Grant from CMHS, United Arab Emirates University (2010). The manuscript has already been published in Physiological Research. Another study on the effect of Aliskiren on renal dysfunction following ischemia-reperfusion injury was also commenced and the work has been completed. The study was also funded by an individual Grant from CMHS, United Arab Emirates University (2012).

In collaboration with Dr Omran Bakoush from the Department of Internal Medicine, CHMH, Prof. Hammad has started a major study on the

assistant.

In collaboration with Dr Hasan Elbiss, Department of Obstetrics and Gynaecology, Prof. Hammad is participating in a study related to the incidence of urinary incontinence and prolapse in UAE women. It is expected that this work will result in three manuscripts. In addition, they completed a study on whether teaching patients clean intermittent self catheterization prior to anti-incontinence or prolapse surgery is necessary in women with voiding difficulty. The data were published in International Urology & Nephrology. The study was performed in collaboration with the Department of Obstetrics & Gynaecology, Worcestershire Royal Hospital NHS Trust, Worcester, UK. They also reported on a rare case of 'placenta percreta invading urinary bladder and parametrium' which was accepted for publication in the Journal of Obstetrics and Gynaecology.

In collaboration with Prof Abu Zidan, Prof. Hammad has published data on 'Multiple authorship and article type in urology journals across the Atlantic: Trends over the past six decades' (Medical Principles and Practice). This was performed in collaboration with Dr Shaban, Department of Medical Education.

Associate Professor Fawaz Torab

Associate Professor Fawaz Torab is the Chair of the Al Ain Medical District (AAMD) Human Research Ethics Committee. This Committee includes members from Tawam and Al Ain Hospitals in addition to Primary Health Care, Preventive Medicine, Zayed Military 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 USA was successful. This will facilitate any research project carried out in collaboration with researchers in the USA. He was chosen by the Research Office of the UAE University to lead a task force to establish the Research Ethics Board and the necessary policies and guidelines to regulate ethics approval of the research conducted at the University.

Promoted to Associate Professor, 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. He is also the representative of the UAE to the Mediterranean and Middle East Endoscopic Surgery Society and has been nominated to chair the Conference of the Society in 2014 to be hosted in Abu Dhabi. 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.

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, and the investigation of pro-inflammatory mediators in patients undergoing open or laparoscopic surgery for perforated peptic ulcer. In 2012 he has made significant contributions with presentations nationally in Al Ain, Abu Dhabi, Dubai and Sharjah and internationally in India and Jordan.

Since 2001 Assoc Prof Torab has conducted studies to prospectively evaluate the surgical treatment of obesity with laparoscopic gastric banding, sleeve and bypass and since 2005 has performed a prospective randomized study of open versus laparoscopic approach for repair of perforated duodenal ulcers with serial analysis of proinflammatory mediators. Since 2006, in collaboration with Prof Basel Ramadi, Chair of Medical Microbiology and Immunology, and oncologists at Tawam Hospital, he has been evaluating 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 is a member of the Research Ethics Committee of Dubai Healthcare City and 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 and Vascular Surgery at the University of Toronto in 2004 and was appointed Assistant Professor in December 2004. Following his 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. 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 2012 he made three presentations at the 1st Yemen-Turkey Cardiovascular Conference as well as participating in meetings in Malaysia and Saudi Arabia.

Assistant Professor Tahra AlMahmoud

Assistant Professor Tahra AlMahmoud completed Residency training in Ophthalmology at McGill University, Montreal and a Fellowship period in Ottawa concerned with disease of the anterior chamber of the eye. A Fellowship in Uveitis at McGill University has also been completed. 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 has developed an interest in Ethics and Professionalism for Residents in training and has recently published guidelines. She is planning to continue her collaborations with the Department of Microbiology and Immunology at CMHS, with

experimental studies with an animal model of Experimental Autoimmune Uveitis in Galactin-3 Knockout Mice.

Assistant Professor Saeed Al Thani

Assistant Professor Saeed Al Thani completed Residency Training in Orthopaedics 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 Faculty 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 was 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. He presented his expertise in shoulder surgery in Beijing in 2012. 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) and having been appointed as an Assistant Professor, 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.

Three presentations were made regarding hip arthroplasty in Dubai and Riyadh, KSA in 2012, Dr Al Beloushi also served as an Instructor for AO Courses for Orthopedic Trauma management in Dubai with three presentations in 2012. He has completed an MBA program with a focus



in Health Sector Management (Duke University, USA). Asst. Prof Al Beloushi 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 Faculty in August 2008 and is actively participating in clinical services at Tawam Hospital. Dr Al-Fardan's main research areas are wound healing and clinical outcome of reconstructive surgery. His principal clinical interests are in breast reconstructive surgery 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 he is an active member of the Canadian Society of Plastic Surgery and 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. He was also an invited speaker in the International Congress in Aesthetic, Anti-Aging and Medical Spa in Dubai in 2012.

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 is completing a Residency training program in Otorhinolaryngology at the Sahlgrenska University Hospital, Sweden.

Dr. Essa Al Essa

Dr Essa Al Essa joined the CMHS as a Teaching Assistant in March 2012 and participated in teaching anatomy and physical examination skills to preclinical students and problem based learning sessions. In addition, he collaborated with Prof Fikri Abu-Zidan resulting in acceptance of two manuscripts for publication, data from one is to be presented at a Trauma meetings in Canada in 2013. On arrival in June at the University of Manitoba for Residency training in General Surgery, the first month was spent in orientation to the city of Winnipeg, culture and the system of clinical practice. Dr Essa has been making excellent progress in his clinical studies in this well established program.

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 Dr. Fayez Hamad. Ms Khuloud Al Ghanem had functioned well as a Department Secretary until her departure for Abu Dhabi for personal reasons in November 2012. Mr. Abdulla Jamal has been working for some years as Departmental Secretary and continues to facilitate 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.

Skills and Procedural Training

In April 2004 the Department hosted inaugural back to back Provider and Instructor courses

in the UAE for Advanced Trauma Life Support (ATLS). Four invited Faculty and staff from the USA and one from Canada participated in the teaching and Provider courses have since been held frequently in the College, in Abu Dhabi and in Fujairah. These courses are training Emirati graduates and others in trauma care and will help reduce the burden of disabling illness and mortality from motor vehicle crashes. In March 2008 the FMHS 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 Tawam Hospital. In 2012 the Department hosted four ATLS and one ATCN courses in Al Ain.

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 gynaecological surgery and fetal ultrasonography. FAST trainers include, cardiologists, nephrologists, obstetrician/ gynaecologists, 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

Abbas AK, Hefny AF, Abu-Zidan FM. (2012). Does wearing helmets reduce motorcycle-related death? A global evaluation. *Accid Anal Prev.* 49:249-52.

Abbas AK, Mirghani H, Eid HO, Abu-Zidan FM. (2012). Trauma in women of child-bearing age in a high-income developing country. *Turkish J Trauma and Emer Surg. (Ulus Travma Acil Cerrahi Derg).* 18(3):239-42.

Abouchacra S, Chaaban A, Gebran N, Hussein Q, Ahmed M, Bernieh B, Torab F, Kayyal Y, Al Omary H, Nagelkerke N. (2012). GFR estimation in the morbidly obese pre- and postbariatric surgery: one size does not fit all, *Int Urol Nephrol.* [Epub ahead of print].

Abu-Zidan FM, Hefny AF, Eid HO, Bashir MO, Branicki FJ. (2012). Camel-related injuries: prospective study of 212 patients. *World J Surg.* 36(10):2384-9.

Abu-Zidan FM, Hefny AF, Branicki F. (2012). Prevention of child camel jockey injuries: a success story from the United Arab Emirates. *Clin J Sport Med.* 22(6):467-71.

Abu-Zidan FM, Abbas AK, Hefny AF, Eid HO, Grivna M. (2012). Effects of seat belt usage on injury pattern and outcome of vehicle occupants after road traffic collisions: prospective study. *World J Surg.* 36(2):255-9.

Abu-Zidan FM, Eid HO, Hefny AF, Bashir MO, Branicki F. (2012). Camel bite injuries in United Arab Emirates: a 6 year prospective study. *Injury.* 43(9): 1617-20.

Abu-Zidan FM, Abbas AK, Hefny AF. (2012). Clinical "case series": a concept analysis. *African Health Sciences* 4: 557 – 562.

Al-Kuwaiti A, Hefny AF, Bellou A, Eid HO, Abu-Zidan FM. (2012). Epidemiology of head injury in

the United Arab Emirates. *Turkish J Trauma and Emer Surg.* (Ulus Travma Acil Cerrahi Derg). 18(3):213-8.

Al-Marzoqee FY, Khoder G, Al-Awadhi H, John R, Beg A, Vincze A, Branicki F, Karam SM. (2012). Up-regulation and inhibition of nuclear translocation of Oct4 during multistep gastric carcinogenesis. *Int. J Oncology* 41(5):1733-1743.

Al-Omari W, Elbiss H M, Hammad F T. (2012). Placenta percreta invading urinary bladder and parametrium: Report of a case and multidisciplinary approach. *Journal of Obstetrics and Gynaecology.* 32(4):396-7.

Elbiss H M, Moran P A, Hammad F T. (2012). Teaching patients clean intermittent self catheterization prior to anti-incontinence or prolapse surgery: Is it necessary in women with voiding difficulty? *International Urology and Nephrology.* 44(3):739-43.

Grivna M, Aw TC, El-Sadig M, Loney T, Sharif AA, Thomsen J, Mauzi M, Abu-Zidan FM. (2012). The legal framework and initiatives for promoting safety in the United Arab Emirates. *Int J Inj Contr Saf Promot.* 19(3):278-89.

Hammad F T, Al-Salam S, Lubbad L. (2012). Curcumin provides incomplete protection of the kidney in ischemia-reperfusion injury. *Physiological Research* 61(5):503-11.

Hammad FT, Shaban S, Abu-Zidan F. (2012). Multiple authorship and article type in journals of urology across the Atlantic: trends over the past six decades. *Med Princ Pract.* 21(5):435-41.

Hefny AF, Barss P, Eid HO, Abu-Zidan FM. (2012). Motorcycle-related injuries in the United Arab Emirates. *Accid Anal Prev.* 49:245-8.

Hefny AF, Grivna M, Abbas AK, Branicki FJ, Abu-Zidan FM. (2012). Pediatric trauma research in the Gulf Cooperation Council countries. *Asian J Surg.* 35(2):74-80.

Hefny AF, Eid HO, Grivna M, Abu-Zidan FM. (2012). Bicycle-related injuries requiring hospitalization in the United Arab Emirates. *Injury* 43(9):1547-50.

Safi F, Bakhatir S, Taha M, Lange T, El Salhat H, Branicki F. (2012). The value of postoperative measurement of amylase in abdominal drainage fluid after pancreatic surgery. *Int J Hepato & Panc Dis.* 2:31-37.

Torab FC, Hamchou M, Ionescu G, Al-Salem AH. (2012). Familial achalasia in children. *Pediatr Surg Int.* 28(12):1229-33. doi: 10.1007/s00383-012-3186-3. Epub 2012 Oct 18.

Reviews, Case Reports and Editorials

Abu-Zidan FM. (2012). Point-of-care ultrasound in critically ill patients: Where do we stand? *J Emerg Trauma Shock.* 5(1):70-1.

Abu-Zidan FM. (2012). Commentary on: Temporary rapid bowel ligation as a damage control adjunct, Wang et al., in *Journal of Surgical Research*, March 20, 2012. *J Surg Res.* 2012 Sep 5. [Epub ahead of print]

Abu-Zidan FM. (2012). Epiploic appendagitis: is there a need for surgery to confirm the diagnosis? *World J Surg.* 2012; 36(6):1449-50; author reply 1451-2.

Hefny AF, Corr P, Abu-Zidan FM. (2012). The role of ultrasound in the management of intestinal obstruction. *J Emerg Trauma Shock.* 5(1):84-6.

Shaban S, Abu-Zidan FM. (2012). Establishing a trauma registry in a high-income developing country: Lessons learned. *Emergency Medicine* 2: e115 (Editorial).

Torab FC, Hefny AF, Taha M, Abou-Rebyeh H, Abu-Zidan FM. (2012). Delayed life-threatening

upper gastrointestinal bleeding as a complication of laparoscopic adjustable gastric banding: case report and review of the literature. *Asian J Surg.* 35(3):127-30.

Published Abstracts, Letters and Correspondence

Abu-Zidan FM, Noureldin A, Hefny AF, Jamal A, Corr P, Kazzam E. (2012). Point-of-care ultrasound training: an experience from UAE. *ANZ Journal of Surgery.* 82 (supplement 1): 157.

Abu-Zidan FM, Hefny AF, Eid HO, Bashir M, Branicki F. (2012). Camel-related injuries: A prospective study of 212 patients. *ANZ Journal of Surgery.* 82 (supplement 1): 178.

Abu-Zidan FM, Hefny AF, Branicki F. (2012). Prevention of child camel jockey injuries: A success story from the United Arab Emirates. *ANZ Journal of Surgery.* 82 (supplement 1): 181.

Al-Ashaal Y, Abu-Zidan FM. (2012). Management of trans-anal rectal injuries. *ANZ Journal of Surgery.* 82 (supplement 1): 42.

Al-Ashaal Y, Safi F, Bashir M, Abu-Zidan FM. (2012). Post ERCP duodenal perforation a life threatening complication. *ANZ Journal of Surgery.* 82 (supplement 1): 99.

Branicki F, Abu-Zidan F, AlShafi M, Jamal A, Chetty D., Gautam S. (2012). Trauma training in the United Arab Emirates. *ANZ J Surgery* 82 (Suppl. 1): 164.

Elbiss H, Osman N, Hammad F. (2012). Prevalence and social impact of urinary incontinence among women from the Gulf: a cross sectional study. *Journal of Urology (Supplement)* 187(4), p: e758-e759.

Emam E, Osman O, Babikir F, Torab

F, Kayyal Y, Zoubeidi T. (2012). Impact of body image on the quality of life among patients with morbid obesity referred for preoperative psychiatric assessment prior to bariatric surgery. Proceedings: 4th Annual SEHA Research Conference.

Hammad F T, Al Najjar A. (2012). The effect of fat, muscle and kidney on stone fragmentation by shockwave lithotripsy: An in vitro study. *African Journal of Urology*. (Supplement 18) 30.

Hammad F T, Lubbad L. The effect of diclofenac sodium on renal function alterations following reversible unilateral ureteric obstruction in the rat. *African Journal of Urology*, (Supplement 18):31.

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Hammad F T, Kaya M, Kazim E. (2012). Bladder calculi: Did the clinical picture change? *African Journal of Urology*, (Supplement 18):62.

Hammad F T, Balakrishnan A (2012). The effect of the components of the skin-to-stone distance on success of SWL. *African Journal of Urology* (Supplement 18):71.

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Hefny AF, Eid HO, Abu-Zidan FM. (2012). Pedestrian injuries in the United Arab Emirates. *ANZ J Surgery* 82 (Suppl. 1): 178.

Hefny AF, Grivna M, Abbas AK, Branicki FJ, Abu-Zidan FM. (2012). Pediatric trauma research in the Gulf Cooperation Council countries. *ANZ J Surgery* 82 (Suppl. 1): 181.

Jawas A, Hefny AF, Abbas AK, Abu-Zidan FM. (2012). Vascular Surgery Research in the Gulf Cooperation Council Countries. *ANZ J Surgery* 82 (Suppl. 1): 164.

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Safi F, Branicki F, El-Salhat H. (2012). Multi visceral resection in colorectal cancer. *ANZ Journal of Surgery*. 82 (supplement 1): 32.

Safi F, Bekdache O, Bakhatir S, Taha M, Branicki F. (2012). The consequence of peri-operative measurements of amylase in serum and body fluid after pancreas surgery. *ANZ Journal of Surgery*. 82 (supplement 1): 91.

Conference Invited Lectures and Presentations

Abu-Zidan FM (2012). Trauma in UAE: Reality and vision. Enhancing injury prevention towards an integrated multisectorial approach, Dubai, UAE.

Abu-Zidan FM (2012). Injury surveillance as a central part of the trauma system. Enhancing injury prevention towards an integrated multisectorial approach, Dubai, UAE.

Abu-Zidan F (2012). How to present a talk. Al-Ain Hospital, Al-Ain, UAE.

Abu-Zidan FM. (2012). Trauma Registry as a research tool. The 1st Global Network Conference on Emergency Medicine. Dubai, UAE.

Abu-Zidan FM. (2012). Trauma research in the developing countries: Reality and vision. The 1st Global Network Conference on Emergency Medicine. Dubai, UAE.

Abu-Zidan FM. (2012). Ultrasound search for bleeding sources in trauma patients. The 1st Global Network Conference on Emergency Medicine. Dubai, UAE.

Abu-Zidan FM. (2012). Critical decision making in Emergency Medicine: A vital skill. The 1st Global Network Conference on Emergency Medicine. Dubai, UAE.

Abu-Zidan FM. (2012). Role of ultrasound in multiple trauma patients. Al-Ain Hospital, Al-Ain, UAE.

Abu-Zidan FM. (2012). Basic physics of ultrasound. ABCDE ultrasound resuscitation Workshop. The 1st Global Network Conference on Emergency Medicine. Dubai, UAE.

Abu-Zidan FM. (2012). Management of Colonic Injuries. 1st Asia Middle East Surgery Conference (AMESCON). Dubai, UAE.

Abu-Zidan FM, Hefny AF, Eid HO, Bashir M, Branicki F. (2012). Camel-related injuries: A prospective study of 212 patients. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Abu-Zidan FM, Noureldin A, Hefny AF, Jamal A, Corr P, Kazzam E. (2012). Point-of-care ultrasound training: an experience from UAE. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Abu-Zidan FM. (2012) Traumatic Adrenal Crisis. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Abu-Zidan FM, Hefny AF. (2012).

Prevention of Camel Related Injuries. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Abu-Zidan FM (2012). Internal Fixation of the Ribs: What is the Evidence? 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Abu-Zidan FM. (2012). The RUSH protocol. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Abu-Zidan FM (2012). Role modeling in disaster medicine training: a living example. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Abu-Zidan FM (2012). Establishing a Trauma Registry: Lessons learned. King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia.

Abu-Zidan FM (2012). The RUSH protocol. King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia.

Abu-Zidan FM (2012). Minimizing missed war –related injuries. 3rd ICMM Pan Arab Regional Working Group Congress on Military Medicine. Abu Dhabi, UAE.

Abu-Zidan FM (2012). Clinical ultrasound physics. 3rd ICMM Pan Arab Regional Working Group Congress on Military Medicine. Abu Dhabi, UAE.

Abu-Zidan FM (2012). The RUSH protocol. 3rd ICMM Pan Arab Regional Working Group Congress on Military Medicine. Abu Dhabi, UAE.

Abu-Zidan FM, Hefny AF, Branicki F. (2012). Prevention of child camel jockey injuries: A success story from the United Arab Emirates. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia. (Poster TS29P).

Al-Ashaal Y, Abu-Zidan FM. (2012). Trans-anal Rectal Injuries. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Al-Ashaal Y, Abu-Zidan FM. (2012).

Management of trans-anal rectal injuries. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia. (Poster CR53P).

Al Ashaal Y, Safi F, Bashir M, Abu Zidan FM. (2012). Post-ERCP duodenal perforation as a life threatening complication. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia. (Poster HP58P)

AlMahmoud T, Discepola M (2012). Complete anterior dislocation of the crystalline lens as the presenting manifestation of Marfans syndrome in a middle aged man. World Ophthalmology Congress. Abu Dhabi, UAE.

AlMahmoud T, Mansour M, Marcil M, Edelstien C, Deschênes J. (2012). Visual Acuity post Intra-Operative Echographic Assisted Localization of I125 plaque for Choroidal Melanoma. World Ophthalmology Congress. Abu Dhabi, UAE.

AlMahmoud T, Barss P. (2012). Eye and Associated Facial Structures Injuries: Impact of Safety Belts and Airbags. World Ophthalmology Congress. Abu Dhabi, UAE.

Branicki FJ, Al Ashaal Y, Ahmad I, Abu Zidan FM. (2012). Delayed Diagnoses and Missed Injuries. 1st Asia Middle East Surgery Conference (AMESCON). Dubai, UAE.

Branicki FJ (2012). Carcinoma of the Stomach Current Concepts in Diagnosis and Management. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Branicki FJ (2012). Subspecialty surgical practice: a case for risk reduction? Al Ain Hospital. Al Ain, UAE.

Branicki FJ (2012). Centres of Excellence. Subspecialty surgical practice: a case for risk reduction? Arab Health – 2nd Hospital Build and Infrastructure Middle East 2012. Exhibition and Congress. Dubai, UAE.

Branicki FJ (2012). Trauma in Pregnancy. 8th Middle East Trauma and Emergency Medicine Conference. Abu Dhabi, UAE.

Branicki FJ (2012). The Role of Gastric Surgery in Advanced/ Metastatic Gastric Cancer. Emirates Oncology Conference. Abu Dhabi, UAE.

Branicki FJ, Abu-Zidan FM , Alshafi M , Abdulla J, Chetty D, Gautam SC. (2012). Trauma training in United Arab Emirates. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia. (Poster SE33P).

Branicki FJ (2012). A Code of Ethics and Professionalism for Residents in Postgraduate Training. 13th Annual Scientific Conference and AGM, College of Surgeons of East, Central and Southern Africa (COSECSA)/ and the 17th Annual Meeting of the Surgical Society of Ethiopia. Addis Ababa, Ethiopia.

Elbiss H M, Osman N, Hammad F T. (2012) Prevalence and social impact of symptoms of genital prolapse among United Arab Emirates women, 37th Annual Meeting of the International Urogynecological Association. Brisbane, Australia.

Elbiss H M, Osman N, Hammad F T. (2012). Prevalence and social impact of urinary incontinence among women from the Gulf: a cross sectional study. American Urological Association Annual Meeting. Atlanta GA, USA.

Grivna M, Shah S, El-Sadig M, Sharif A, Abu-Zidan F. (2012). Child safety efforts in the United Arab Emirates. 6th Asian Regional Conference on Safe Communities in Toshima, Japan.

Hammad F T, Kaya M, Kazim E. Bladder calculi: Did the clinical picture change?" 1st Experts in Stone Disease Conference, Dubai, December 13-15, 2012.

Hammad F T, Lubbad L. (2012). The effect of diclofenac sodium on renal function alterations following reversible unilateral ureteric obstruction in the rat. 1st Experts

in Stone Disease Conference. Dubai, UAE.

Hammad F T, Al Najjar A. (2012). The effect of fat, muscle and kidney on stone fragmentation by shockwave lithotripsy: An in vitro study. 1st Experts in Stone Disease Conference. Dubai, UAE.

Hammad F T, Lubbad L. (2012). The effect of curcumin on renal function alterations following reversible unilateral ureteric obstruction in the rat. 1st Experts in Stone Disease Conference. Dubai, UAE.

Hammad F T, Balakrishnan A. (2012). The effect of the components of the skin-to-stone distance on success of SWL. 1st Experts in Stone Disease Conference. Dubai, UAE.

Hammad F T, Al-Salam S, Lubbad L. (2012). Curcumin provides incomplete protection of the kidney in ischemia-reperfusion injury. 1st Annual Meeting of Emirates Urological Society. Dubai, UAE.

Hammad F T, Lammers W J, Stephen B, Lubbad L. (2012). Regional distribution and propagation of electrical activities in the isolated guinea-pig urinary bladder. American Urological Association Annual Meeting. Atlanta GA, USA.

Hammad F T, Al-Salam S, Lubbad L. (2012). Does curcumin protect the kidney following ischemia-reperfusion injury? American Urological Association Annual Meeting. Atlanta GA, USA.

Hammad F T, Lubbad L, Al Bloushi N, AlRemeithi H. (2012). Does curcumin protect against renal dysfunction following reversible unilateral ureteric obstruction in the rat? 8th Scientific Conference for Medical Students in the GCC Countries, Sultan Qaboos University, Oman.

Hammad FT. (2012). Urology Training in the UAE: Existing Program and Challenges. 1st Annual Meeting of Emirates Urological Society. Dubai, UAE.

Hammad FT. (2012). Urology

Research in the UAE: Reality and Vision. 1st Annual Meeting of Emirates Urological Society. Dubai, UAE.

Hammad FT. (2012). Missed Ureteric Injuries; 8th Middle East Trauma Conference, The Cleveland Clinic Foundation Center for Continuing Education. Abu Dhabi, UAE.

Hammad F T, Loay Lubbad. (2012). Curcumin provides incomplete protection of the kidney in ischemia-reperfusion injury. 1st Annual Meeting of Emirates Urological Society.

Hani O Eid, Abu-Zidan FM. (2012). How to Establish a Trauma Registry: Practical Advice. 8th Middle East Trauma Conference, Abu-Dhabi, UAE.

Hefny AF, Salim M, Salim EA, Abu-Zidan FM, Bashir M. A case of gluteal stab wound. Proceedings: 4th Annual SEHA Research Conference Abu-Dhabi, UAE.

Hefny AF, Eid HO, Bashir MO, Branicki F, Abu-Zidan FM. (2012). Camel Bite Injuries. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Hefny AF, Eid HO, Abu-Zidan FM. (2012). Pedestrian injuries in the United Arab Emirates. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Hefny AF, Al Kuwaiti A, Bellou B, Eid H, Abu Zidan FM. (2012). Epidemiology of head injury in the United Arab Emirates. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Hefny AF, Grivna M, Abbas AK, Branicki FJ, Abu-Zidan FM. (2012). Pediatric trauma research in the Gulf Cooperation Council countries. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Hefny AF, Salim M, Salim EA, Abu-Zidan FM, Bashir M. (2012). A case of gluteal stab wound. 8th Middle

East Trauma Conference, Abu-Dhabi, UAE.

Hefny AF, Salim M, Salim EA, Abu-Zidan FM, Bashir M. A case of gluteal stab wound. Proceedings: 4th Annual SEHA Research Conference Abu-Dhabi, UAE.

Jawas A, Hefny AF, Abbas AK, Abu-Zidan FM. (2012). Vascular Surgery Research in the Gulf Cooperation Council Countries. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Osman OT, Abbas AK, Eid HO, Salem MO, Abu Zidan FM. (2012). Characteristics of interpersonal violence from Al Ain trauma registry. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Safi F. (2012). Pancreas anastomosis after head resection video presentation. Arab Health Surgical Conference, Dubai. UAE.

Safi F. (2012). Pseudomyxoma peritonei, pathophysiology and modern treatment. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Safi F. (2012). Bilio-enteric anastomosis, anatomical structure and technique, Master class session. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Safi F. (2012). Recent advances in surgery. 7th Emirates Gastroenterology and Hepatology Conference. Dubai UAE.

Safi F. (2012). Multivisceral resection in colorectal cancer. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Safi F. (2012). The consequence of peri-operative measurement of amylase in drain fluid, after pancreas surgery. Royal Australasian College of Surgeons 81st Annual Scientific Congress, Kuala Lumpur, Malaysia.

Safi F. (2012). Anastomosis with remnant pancreas methods,

personal experience or both; Annual meeting German Society for Surgery and the Surgical Digestive Society, Berlin, Germany.

Shen Y, Al-Mahmoud T, Adiguzel E, Cohen M, Wallerstein A. (2012). Distribution of Keratoconus Match Index and Keratoconus Match Probabilities in a Normal Refractive Surgery Population. International Society of Refractive Surgery-American Academy of Ophthalmology (ISRS-AAO), Chicago, USA.

Torab FC. (2012). Principles of laparoscopic anastomosis. 3rd Minimal Invasive Surgery Workshop (MISW). Sharjah, UAE.

Torab FC. (2012). Issues related to organ transplantation - Ethical and Islamic view. 2nd Practical Workshop Liver Surgery, Al Ain, UAE.

Torab FC. (2012). Tissue and stapling. Master class Sleeve Gastrectomy. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Torab FC, Kayyal MY, Taha M, Saleh A, Branicki F. (2012): Spectrum of Revisions in Bariatric Surgery: Experience of a Tertiary Referral Center. 20th European Association

for Endoscopic Surgery, Brussels, Belgium.

Torab FC, Y.Kayyal MY, El Salhat H. (2012). Single Incision Laparoscopic Surgery (SILS): Results of an innovative surgery in the UAE started at Tawam Hospital. Proceedings: 12th Congress of Mediterranean & Middle Eastern Endoscopic Surgery Association Congress.

Torab FC. (2012). Algorithm of management of leak after bariatric surgery. Master class Leakage after Bariatric surgery. 1st Asia Middle East Surgery Conference (AMESCON) Dubai, UAE.

Torab FC. (2012). Educating scientists about risk and bioethics issues within epigenetics and genomics research. International engagement in Genetics and Epigenetics: Responsible Bioscience for a safe and secure society, workshop 4, Dubai, UAE.

Torab FC. (2012). Status of bariatric and metabolic surgery. Update in Gastroenterology, Dubai, UAE.

Torab FC. (2012). Surgical treatment of obesity. 17th Annual Conference on Diabetes Mellitus and Endocrine Disorders. Al Ain, UAE.

Torab FC. (2012). Gastric banding surgery and its side effects. UAE University Campaign against obesity. Al Ain, UAE.

Torab FC, Kayyal MY, El Salhat H. (2012). Single incision laparoscopic surgery (SILS): Results of an innovative surgery in the UAE started at Tawam Hospital. 12th Congress of Mediterranean & Middle Eastern Endoscopic Surgery Association Congress, Amman, Jordan.

Torab FC. (2012). Sleeve gastrectomy international consensus. The 4th SKMC-Cleveland Obesity & Digestive Disease Symposium. Abu Dhabi, UAE.

GRANTS

CMHS Research Grant

Prof F.T. Hammad [PI], Dr L Lubbad
The effect of aliskiren on the renal dysfunction in the obstructed kidney in the rat

2012

Surgery



*Standing left to right:
Mr Cherukunnummal Aboobacker,
Dr Al Shafi Mohammed, Prof Fayez
Hammad, Dr Ali Abbas Al Beloushi
and Mr Abdulla Jamal*

*Seated left to right:
Dr Fawaz Torab, Dr Ali Jawas,
Dr Zuhair Al Fardan, Dr Tahra
Almahmoud, Prof Frank Branicki,
Prof Fikri Abu-Zidan and Dr Saeed
Al Thani*

Research Priority Groups

Diabetes and Cardiovascular

Genetics and Development

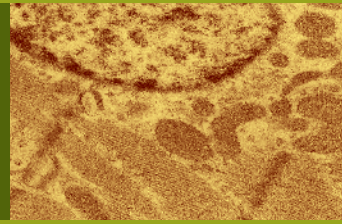
Immunology and Immunoregulation

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 and the Emirates Diabetes Society.

Aims of the Group

- Facilitate diabetes and cardiovascular research in the College of Medicine.
- 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 and cardiovascular diseases.

Activities

17th Annual Workshop on Diabetes Mellitus and Endocrine disorders

The DCRG organized a one-day symposium on "Diabetes Mellitus and Endocrine Disorders" on Saturday, May 12, 2013 at the College of Medicine & Health Sciences, United Arab Emirates University. The Workshop attracted more than 250 delegates 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.

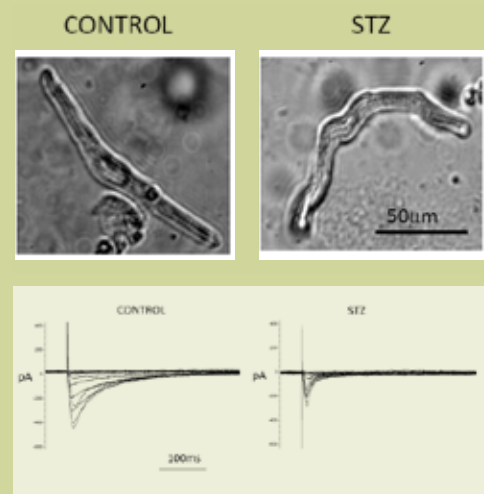
The Symposium covered different areas of diabetes including:

- Management of diabetic nephropathy
- Evaluation and management of short stature
- Evaluation and Management of Endocrine Incidentilomas
- Update on the management of hypovitaminosis D
- Management of osteoporosis

Core members:

- Prof Abdu Adem
- Prof Chris Howarth
- Dr Juma Al Kaabi
- 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 (Chair)

In addition to the core members, group membership includes more than 40 other faculty members from within the CMHS.



Figures
Top - Photographs of atrioventricular node cells from control (left) and diabetic (right) heart
Middle - Typical records of L-type calcium current in atrioventricular node cells from control (left) and diabetic (right) heart

Medical and surgical treatment of obesity
 Management of gestational diabetes
 Update on the management of polycystic ovarian syndrome.

Themes of research 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
- Electrical remodelling of the atrioventricular node in diabetes- UAE University Research Grant
- Progressive changes in expression of genes encoding Ca²⁺ signalling proteins and remodelling of Ca²⁺ proteins underlies cardiac muscle dysfunction in type 2 diabetic heart-Emirates Foundation 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". FMHS Project Grant
- Remodeling of Ca²⁺ transport proteins underlies cardiac muscle dysfunction in the Zucker diabetic fatty rat Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences Grant
- Effect of embryonic pancreatic beta cell transplantation on the metabolic parameters of diabetic rats -Emirates Foundation Grant
- Localization of apolipoprotein A-1 and its effect in the pancreas of a rodent model of type 2 diabetes- FMHS Research Grant
- The Role of TNF- α in experimental autoimmune neuritis: a model of inflammatory demy-

elinating polyneuropathy-FMHS Research Grant
 • Search for Novel Anti-diabetic drug candidates
 Emirates Foundation Grant

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
 CNRS, France

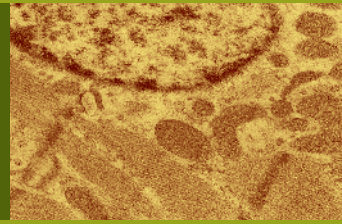
Future plans

Establishment of a Diabetes research Centre
 The group is planning to establish a Diabetes Research Centre. The centre will provide a facility that enables and facilitates a multidisciplinary approach to the study of diabetes and its complications and to provide the infrastructure for diabetes related undergraduate and post-graduate research and teaching activities.

Publications

Members of the DCRG published more than 24 diabetes-related papers in top quality peer-reviewed journals including but not limited to BMC Public Health, Molecular and Cellular Biochemistry, Experimental Physiology, PLoS One, Diabetologia, Current Medicinal Chemistry, Journal of Obstetrics and Gynecologic Archives of Gynecology and Obstetrics and Vitamins and Hormones. The cumulative impact factor of these journals exceeded 42 (See Departments of Anatomy, Biochemistry, Community Medicine, Pathology, Pharmacology, Physiology, Psychiatry, Internal Medicine and Medical Microbiology for relevant publications).

Genetics and Development Research Group



Mission of the Group

Consanguineous marriages are prevalent in UAE population and therefore recessively inherited single gene disorders occur more frequently in the UAE than in other populations with over 170 recessive disorders have been reported so far. In addition, local population has a high frequency of alpha and beta thalassemia mutations and hemoglobin S. Furthermore, the incidence of multifactorial diseases such as type 2 diabetes, obesity, certain cancers, neurodegenerative and cardiovascular diseases have been steadily rising in the UAE over the past few decades. This is mainly due to the rapid socioeconomic growth and a significant rise in life expectancy. The rapid increase in the prevalence of multifactorial diseases also suggest genetic predisposition to those diseases revealed by rapid changes in lifestyle including diet.

The mission of the Genetics and Development Research Group is to provide the highest quality research into the basis of genetic diseases, provide 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) to 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.

The Group Principal Investigators and their Research Interests

Principal investigators members of the Genetics and Development Research Group are affiliated to different departments within the College of Medicine and Health Sciences of the UAE University. The current membership of the group is:

Dr. Bassam R Ali (Pathology Department); Associate Professor of Molecular Genetics and Leader of the Genetics and Development Research Group

Research interests: (1) Elucidation of the molecular defects responsible for genetic disorders in the UAE and Arab populations (2) Establishing the cellular mechanisms of genetic disorders and

(3) Pharmacogenetics and pharmacogenomics.
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: Identification of diabetes susceptibility genes in UAE nationals

Prof. Lihadh Al-Gazali (Paediatrics Department); Professor 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) Assistant Professor

Research interests: Biochemical genetics

Dr. Ahmad Hassan Al-Marzouqi (Biochemistry Department); Associate Professor and the Assistant Dean 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. 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. Starling Emerald (Anatomy Department); Assistant professor

Research interest: Epigenetics in metabolic syndrome and obesity

Prof. Sehamuddin Galadari (Biochemistry Department); Professor and Vice Provost for Research and Graduate Studies

Research interest: Cellular signaling and human disease

Prof. Mohammad Y Hassan (Pharmacology and Therapeutics Department); Professor of Pharmacology and Therapeutics, Provost and Chief Academic Officer

Research interest: The roles of neurotransmitters in diabetes, epilepsy, aging and neurodegenerative diseases

Prof. Ruth Langer (Radiology Department); Professor, Assistant Dean for Administration and senior consultant Radiologist

Dr. Hisham Mirghani (Obs/Gyne Department); Associate Professor and Chair

Research interest: Prenatal diagnosis

Prof. Hassib Narchi (Paediatrics Department); Professor

Research interests: Causes and mechanisms of common diseases in Middle Eastern populations

Prof. Tahir A Rizvi (Medical Microbiology Department); Professor

Research interest: Retroviral/lentiviral vectors for human gene therapy.

Dr. Sami Shaban (Medical Education); Assistant Professor

Research Interests: Biomedical informatics, health registries, e-learning, database-driven website design and relational databases

Prof. Abdul-Kader Souid (Paediatric Department); Professor and Chair

Research Interests: Analytical biochemistry, investigating effects of drugs and toxins on cellular bioenergetics and mitochondrial function

Publications and Grants

Please refer to the list of publications and grants for in 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

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
- 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 in Genetics Program

The group has supported the establishment of an interdepartmental PhD program in Human Genetics. The compulsory courses for the program are provided by the Departments of Pathology (2 courses), Paediatrics (1 course) and Biochemistry (1 course). Two PhD students are currently enrolled in this programme.

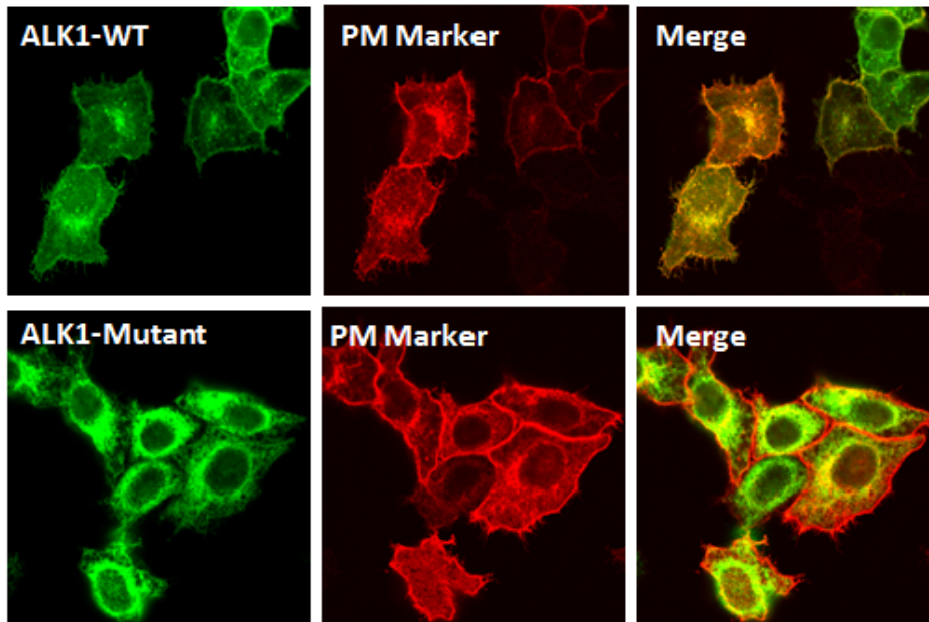


Diagram illustrating the effects of hereditary haemorrhagic telangiectasia type 2 causing mutation on ALK1 trafficking. The upper panels indicate that wild type ALK1 is colocalizing with a plasma membrane marker whereas the lower panels show that some disease causing mutations result in the retention of the protein in the endoplasmic reticulum and its absence from the plasma membrane (Hume AN, John A, Akawi NA, Al-Awadhi AM, Al-Suwaidi SS, Al-Gazali L, Ali BR (2013) Retention in the endoplasmic reticulum is the underlying mechanism of some hereditary haemorrhagic telangiectasia type 2 ALK1 missense mutations. *Molecular and Cellular Biochemistry*, 373: 247-257).

The Immunoregulation and Infection Research Priority Group

Group Leader:
Professor Basel al-Ramadi

Core Members:
Professor Eric Mensah-Brown
Professor Michael Conlon
Professor Senarath Dissanakaye
Professor Tahir Rizvi
Professor Tibor Pal
Dr. Agnes Sonnevend
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. Suhail A Al-Salam
Dr. Suleiman Al Hammadi

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 2012 the main event, organized by Profs. Pal and Ramadi and Dr. Sonnevend, was a postgraduate course under the umbrella of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) entitled **“Update on Antibiotic Resistance – from Laboratory to Clinical Practice”**. It was held at the College of Medicine and Health sciences on the 10th – 11th of February, 2012 with 17 lecturers from 10 different countries and 98 registered participants of 15 nationalities.

Furthermore, the group hosted the following research seminars:

16 February, 2012 **“Therapeutic siRNA gene silencing for the ocular surface”** by **Dr Tara Moore** from the School of Biomedical Sciences, University of Ulster, Coleraine, Northern Ireland, UK

16 April, 2012 **“Role of T regulatory cells in Cancer”** by **Dr. Eyad Elkord**, Senior Lecturer, Biomedical Research Centre, School of Environment & Life Sciences, University of Salford, UK

18 April 18, 2012 **“Unconventional Strategies for Inhibiting HIV -1 Replication”** by **Dr. Roland Marquet**, PhD, Director of Research, French National Centre for Scientific Research (CNRS) University of Strasbourg, France

All the above events were well attended not only by the faculty members, but also by postdoctoral trainees, graduate students, undergraduate medical students and research assistants.



Original publications by IIRPG members:

Members of the group published altogether 67 PubMed listed publications during 2012. 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

Professor Michael Conlon

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 Surgery

Dr. Fawaz Torab

Neuroscience Research Group

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

Dr. Safa Shehab

Dr. Eric Mensah-Brown

Prof. Wim Lammers

Prof. Ernest Adeghate

Dr. Fadwa El-Mughairibi

Dr. Fatima Aljasmi

Dr. Maria Cabezudo

Prof. Basel Al Ramadi

Dr. Gururaj Aithala

Dr. Taha Amir

Dr. Sami Abdel-Kawi

Prof. Lihadh Al-Gazali

Prof. Mohamed Fahim

Prof. Mohamed Yousif Hasan

Baniyas

Dr. Sehamuddin Galadari

Dr. Chris Howarth

Dr. Salim Bastaki

Dr. Juman Kubba

Dr. Amr A. Amin

Dr. Ahmed Al Marzouqi

Dr. Klaus van Gorkom

Dr. Hamdy Moselhy

Dr. Amin Bahi

Prof. Johann Braun

Dr. Leena Amiri

Dr. Kanita Dervic

Prof. Sehamdduin Galadari

Prof. John Conlon

Dr. Bassam Ali

Dr. Suhail Al Salam

Dr. Amr Nour Eldin Abdel Aty

Dr. Bassem Shaban Sadek

Dr. Md Emdadul Haque

Dr Fakhreya Yousuf Hussain

Mohammad

Dr Mahmoud Abdel-Fattah Awara

Neuroscience Research Priority Group for 2012

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 develop educational programs at the UAE University that lead to higher degrees in Neuroscience, organize seminars, congresses and workshops, participate 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 2012

In the year 2012 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's Research, USA, Shaikh Hamdan Award for Medical Sciences, Emirates Foundation, and several FMHS & UAE University Research Grants.

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.

International Research Collaboration

The College of Medicine and Health Sciences - United Arab Emirates signed MoU with the Faculty of Medicine, Lund University Sweden to promote their cooperation in academic education and research in the field of Neurosciences. The cooperation also includes:

- Exchange of graduate and postgraduate students
- Joint teaching activities

- Joint supervision of PhD students
- Joint research activities
- Visits by, and exchange of, scholars, teachers and other staff.

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
College of Science, UAEU
Hamdan Award for Medical Sciences
Tawam Hospital, Al Ain
Zayed University, Dubai

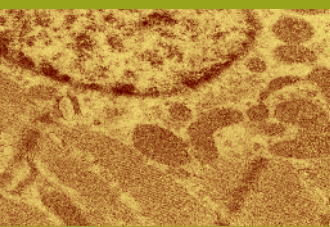
Abroad:

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
Universita 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 2012 (refer to departmental reports as below):

Shehab S (Anatomy).
Adeghate E (Anatomy).
Mensah-Brown E (Anatomy).
Conlon JM (Biochemistry).
El-Agnaf O (Biochemistry).
Galadari S (Biochemistry).
Haque E (Biochemistry).
Al-Gazali L (Paediatrics).
Adem A (Pharmacology).
Hasan MY (Pharmacology).
Bastaki S (Pharmacology).
Attoub S (Pharmacology).
Murat Oz (Pharmacology).
Sadek B (Pharmacology).
Mohammad F (Pharmacology).
Fahim M (Physiology).
Lammers W (Physiology).
Ljubisavljevic M (Physiology).
Osman O (Psychiatry).
Moselhy H (Psychiatry).
Awara M (Psychiatry).
Abdel Aty A (Psychiatry).
Gorkom van K (Radiology).



Oncology Research Group

Group Leader:

Prof Thomas E Adrian

Members:

Faculty of Medicine and Health Sciences:

Prof Frank Branicki

Prof Basel al-Ramadi

Prof Farouk Safi

Prof Haider Raza

Prof John M. Conlon

Prof Mohammad-Reza Sadeghi

Prof Omar El-Agnaf

Prof Ruth Langer

Prof Sherif Karam

Prof Tahir Rizvi

Dr Ahmed Al-Marzouqi

Dr Fawaz Torab

Dr Gulfaraz Khan

Dr Maria JF Cabezudo

Dr Samir Attoub

Dr Sehamuddin Galadari

Dr Srdjan Denic

Dr Suhail Al-Salam

UAE University:

Dr Amr Amin

Dr Mohammad Khasanneh

Dr Rabah Iratni

Dr Soleiman Hisaindee

Tawam Hospital:

Dr Sanjay Jain [Dep. Chair]

Dr Anjum Naveed

Dr Hakam El Taji

Dr Karim Elmasry

Dr Mohammed Jaloudi

Dr Saad G. Aswad

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 Prof. Thomas Adrian and the Vice-Chair is Prof. Frank Branicki. 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

Membership

This year has seen an increase in membership, partly with members from the Department of Oncology department of Surgery in Tawam Hospital and partly from our colleagues in the faculty of Science that are working in the cancer area. The group is inclusive and is very pleased to welcome these new members into the fold.



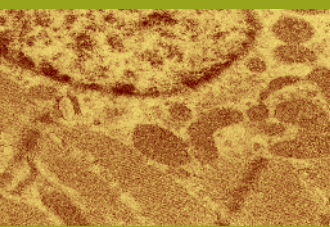
Research Activities

During 2012, members of the ORG received a total of 33 research grants for their work, including 12 awards from the Terry Fox Fund for Cancer Research, Sheikh Hamdan Awards, 2 UAE University National Research Foundation awards. In 2012, members of the ORG published 42 papers in peer-reviewed journals.

Participants at the Terry Fox Cancer Research Symposium during the Emirates Oncology Conference in Abu Dhabi in November, 2012

Emirates Oncology Conference

The group has participated in the Terry Fox Symposium on Cancer Research which was part of the Emirates Oncology Conference held on November 8th – 10th, 2012 at the Emirates Palace Hotel in Abu Dhabi. The program consisted of presentation by the nine Principal Investigators of basic cancer research projects that were recently funded by the Terry Fox Fund for Cancer.



Trauma Research Group

Core Members:

*College of Medicine
and Health Sciences*

Professor Fikri Abu-Zidan

Professor Frank Branicki

Professor Peter Corr

Professor Fayez Hammad

Professor Elsadig Kazzam

Assoc Prof Fawaz Torab

Assoc Prof Michael Grivna

Asst Prof Ali Jawas

Asst Prof Sami Shaban

Asst Prof Mohd Al Houqani

Dr Mohamed Sadig

Dr Ashraf Hefny

Dr Alaa Abbas

Mr Abdulla Jamal

Al Rahba Hospital, Abu Dhabi

Dr Masoud Bashir

Tawam Hospital

Dr Said Abuhassna

Dr Abdel Norueldin

Dr Masoud ur Rahman

Al Ain Hospital

Dr Mohammad Kamal Idris

Emirates International Hospital

Dr Yousef El Ashaal

Sharjah Kuwait Hospital

Dr Hani Eid

Summary

During 2012 the Trauma Group has made major contributions in trauma education and research both nationally and internationally. The ATLS and "hands on training" in point-of-care ultrasound has actively continued. The members of the Trauma Group published 15 papers related to trauma in international refereed journals, and presented 38 abstracts at national and international meetings. Professor Abu-Zidan has Chaired the Organizing Committee of the 8th Middle East Trauma Conference, (October) Abu Dhabi, 2012 which has been highly successful. Different aspects of the results of a 10 year prospective study on camel-related injuries have been published in highly prestigious journals.

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 2012 included:

A) Road Traffic Collision Registry:

This project has run as planned and was successfully completed. We have collected detailed information on more than 1000 patients involved in road traffic collisions. A full time Senior Research Fellow, Dr Ashraf Hefny, and a Research Fellow, Dr Alaa Abbas continued their analysis of the data from this registry considering different aspects of trauma epidemiology and management. This has increased the research activity of the Trauma Group. The Trauma Group carried their experience in this area to other hospitals and assisted Tawam Hospital, Al-Ain Hospital, Al-Rahba Hospital (Abu Dhabi) and Rashid Hospital (Dubai) to start their Registries. Our ultimate goal is the establishment of a nationwide registry. Professor Abu-Zidan continued his role as an Advisor to the Trauma Registry Subcommittee of the Trauma System Initiative of Abu Dhabi Emirate. It is expected that trauma registries will start in eight hospitals in the Abu Dhabi Emirate in 2013.

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 1700 doctors have taken the Provider Course to date countrywide in UAE (Fig 1). 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.

1) Point-of-Care Ultrasound training. We have noticed increasing support and popularity for "Point-of-Care" Ultrasound in clinical practice in our setting. The demand from participants, local and overseas, is increasing. Professor Abu-Zidan runs regular clinical point-of-care ultrasound rounds on acutely admitted patients to teach surgeons, residents and medical students. This will assure transfer of knowledge learned to the application stage. The Rapid Ultrasound in Shocked patients (RUSH) protocol has been introduced in clinical practice and at international meetings Professor Abu-Zidan has been promoting the use of this protocol.

E) Publications and Abstracts

In 2012, the group has published 15 papers related to trauma in international refereed journals. Both quality and quantity of research has improved (Fig 2). Different aspects of the

results of a 10 year prospective study on camel-related injuries have been published in highly prestigious journals including World Journal of Surgery, Injury, and Clinical Journal of Sports Medicine. The successful story on Prevention of child camel jockeys is one of the great examples on how enforcement of legislation can completely prevent injuries. These papers stemmed from collaborative work with Al-Ain and Tawam Hospitals networking between the University and these two institutions.

The group has presented 38 abstracts and oral presentations at national and international meetings in 2012. Details of these publications and presentations are also to be found in the relevant Departmental Reports (Department of Surgery, and Department of Community Medicine).

E) International recognition

1. Professor Abu-Zidan was the Guest Editor for a symposium on Critical Sonography for the Journal of Emergencies Trauma and Shock (January 2012 issue).
2. Professor Abu-Zidan accepted the invitation to be the Statistical Editor of the Hamdan Medical Journal.
3. Professor Abu-Zidan was the Chair of the Organizing Committee of the 8th Middle East Trauma Conference, 14 - 16 October, Abu Dhabi UAE, 2012.



Fig 1: An ATLS Course which was held at the Faculty of Medicine and Health Sciences on November 2012.



Fig 2: Number of publications (yellow circle), abstracts and presentations (white circle) of the Trauma Group over the last decade.

Media Reports on Trauma Group activities

The Trauma Group research activities have attracted considerable Media attention in 2012 covering the need to develop trauma registries, prevention of child injury, the success story of prevention of child camel jockey injuries (Fig 3).



Fig 3: The scientific paper reporting the success of prevention of child camel jockey injuries in United Arab Emirates which was published in Clinical Journal of Sports Medicine has attracted considerable attention of the Media

1. Radio interview: Dubai Radio: Trauma System
http://dubai92.com/page/Trauma_registry_system_planned_in_Abu_Dhabi/3011?feed=
2. Zaineb Al Hassani National trauma registry to be rolled out by year-end
Apr 30, 2012, The National.
<http://www.thenational.ae/news/uae-news/health/national-trauma-registry-to-be-rolled-out-by-year-end>
3. Zaineb Al Hassani. Parents need to be told how to prevent accidents. The National, May 15, 2012
<http://www.thenational.ae/news/uae-news/health/parents-need-to-be-told-how-to-prevent-accidents>
4. Legislation puts stop to child camel jockey injuries. 7 days in Dubai, Thursday, June 07, 2012
<http://www.7daysindubai.com/Legislation-stop-child-camel-jockey-injuries/story-16292978-detail/story.html>

Medical Student Research

Medical Student Research

We believe that 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 UK Research Scholarship program. 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 around 150 students were involved in research activities during the summer of 2012.

The UK Research Scholarship program provides opportunities for selected students to visit UK Research Laboratories during the summer. Typically students will have been working in CMHS laboratories and visit UK laboratories to learn new techniques and generally develop their research interests. During the summer of 2012 four students visited UK – Amira Yaqoub Yousef Ahmed Al Ahmadi (1st year student) visited the laboratory of Professor Saadeh Suleiman, Bristol Heart Institute, University of Bristol, Bristol; Bushra Ahmad Abdulla Kamalboor (3rd year student) visited the laboratory of Professor Paul Francis, King's College, London; Reem Ahmed Abdulla Ali (3rd year student), visited the laboratory of Professor Paul Francis, King's College, London and Fakhra Al Darei (4th year student) visited the laboratory of Professor Jaipaul Singh, University of Central Lancashire, Preston.

The 8th International Scientific Conference for Medical Students in the GCC Countries was held at Sultan Qaboos University, Oman, 28/1/12 –



1/2/12. Our students contributed 9 oral and 14 posters and won three awards.

Ashwaq M bin Amro, Noura S Alblooshi, Bassem Sadek, Mark Wainwright, Abrar S Ashoor. Project entitled: "Cut-off phenomenon in the inhibitory actions of alkylated phenothiazines on human $\alpha 7$ -nicotinic acetylcholine receptors". Laboratory of Dr. Murat Oz (Pharmacology). Third Prize, Abstracts.

Mouza Al Bahri, Amir N, Azimullah S. Project entitled: "Effect of adrenalectomy on antioxidant molecules and lipid peroxidation in gastric mucosa". Laboratory of Prof. Abdu Adem (Pharmacology). Second Prize, Poster.

Aysha HA Hashem, Safa S Ali, Syed M Nurulain, Abrar S Ashoor. Project entitled: "The effects of promethazine and cetizine on the function of human $\alpha 7$ -nicotinic acetylcholine receptors". Laboratory of Dr. Murat Oz (Pharmacology). Third Prize, Poster.

The 9th International Scientific Conference for Medical Students in the GCC Countries will be held in the UAE.



Impact Factor

Impact Factor

Journal Factor	Impact	Journal Factor	Impact
Science	31.201	PLoS One	4.092
Circulation	14.739	Psychopharmacology	4.077
Nat Rev Clin Oncol	11.963	Eur Neuropsychopharm	4.046
Gastroenterology	11.675	Nanotechnology	3.979
Am J Hum Genet	10.603	J Nutr Biochem	3.891
Gut	10.111	Med Microbiol Immun	3.833
Leukemia	9.561	CNS Neurol Disorder Drug Targets	3.810
Acta Neuropathol	9.320	Chem Res Toxicol	3.779
Neurology	8.312	J Alzheimer's Dis	3.745
Diabetes	8.286	Am J Physiol - Heart C	3.708
Diabetes Care	8.087	J Am Soc Echocardiogr	3.707
Cancer Res	7.856	Toxicology	3.681
EMBO Reports	7.355	Infect Con Hosp Ep	3.669
Environ Health Persp	7.036	J Inherit Metab Dis	3.577
Diabetologia	6.814	JIMD Report	3.577
J Med Genet	6.365	Expert Opin Biol Th	3.505
J Pineal Res	5.794	J Neurology	3.473
Stroke	5.729	Behav Brain Res	3.417
FASEB J	5.712	Neurogastroent Motility	3.414
Hum Mutation	5.686	Clin Neurophysiol	3.406
Free Radical Bio Med	5.423	Clin Exp Immunol	3.360
Curr Drug Metab	5.113	Am J Physiol Gastr Liv	3.346
Orphanet J Rare Dis	5.074	Immunobiology	3.321
J Antimicrob Chemoth	5.068	Gen Comp Endocrinology	3.267
Brit J Cancer	5.042	Amino Acids	3.248
Curr Med Chem	4.859	Toxicol Lett	3.230
Addic Biol	4.833	Exp Physiol	3.211
J Biol Chem	4.773	Med Educ	3.176
Exp Neurol	4.699	Int J Nanomed	3.130
Int J Obesity	4.691	Clin Genet	3.128
Toxicol Sci	4.652	BMC Infect Dis	3.118
Clin Microbiol Infec	4.540	J Exp Biol	2.996
Endocrinology	4.459	J Neuroimmunol	2.959
Pharmacol Res	4.436	Arch Dis Child	2.881
Brit J Pharmacol	4.409	Cardiol Rev	2.880
Eur J Hum Genet	4.400	Cell Physiol Biochem	2.857
Int J Antimicrob Ag	4.128	Exp Toxicol Pathol	2.781

Journal Factor	Impact	Journal Factor	Impact
Fortschr Roentgenstr	2.758	Breast J	1.643
Diabetes Res Clin Practice	2.757	Physiol Res	1.555
Birth Defects Res A	2.742	Angiology	1.511
Eur J Radiol	2.606	Int Urol Nephrol	1.471
Int J Mol Sci	2.598	Toxicol Ind Health	1.423
Pharmacol Biochem Be	2.532	J R Soc Med	1.411
Exp Biol Med	2.526	Injury Prevention	1.392
J Med Microbiol	2.502	Arch Gynecol Obstet	1.277
J Appl Toxicol	2.478	Global Health Action	1.267
Peptides	2.434	Pediatr Surg Int	1.253
BMC Gastroenterol	2.422	Nat Prod Commun	1.242
Int J Oncol	2.399	Med Teach	1.217
Calcified Tissue Int	2.376	J Neuroradiology	1.213
World J Surg	2.362	Genet Test Mol Biomarkers	1.110
BMC Med Genet	2.328	Crisis	1.085
Com Biochem Phys A	2.235	Traffic Inj Prev	1.079
Eur J Med Genet	2.178	Eur Rev Med Pharmacol	1.040
Brain Dev	2.119	Med Princ Pract	0.887
Clin J Sport Med	2.119	J Chromatogr Sci	0.884
Adv in Health Sci Education	2.089	Int J Vitam Nutr Res	0.883
JOEM	2.062	J Med Imaging Radiat Onc	0.868
Mol Cell Biochem	2.057	Acad Psychiatry	0.810
FEMS Microbiol Lett	2.044	Int J Rheum Dis	0.807
Cancer Epidemiol	2.010	Pediatr Emerg Care	0.782
Int J Sports Nutr Exerc Metab	2.010	Indian J Pathol Micr	0.676
BMC Public Health	1.997	Int J Inj Contr Saf Promot	0.672
Injury	1.975	Acta Pol Pharm	0.663
Microb Pathogenesis	1.938	Asian Pac J Cancer Prev	0.659
Diabetes Technol Ther	1.931	Asian J Surgery	0.575
BMC Pediatr	1.885	J Coll Physicians Surg Pak	0.554
Accidental Analysis & Prev	1.867	J Obstet Gynaecol	0.542
Clin Dev Immunol	1.838	Indian J Pediatr	0.521
Indian J Med Res	1.837	African Health Sciences	0.492
Fund Clin Pharmacol	1.799	Pakistan J Zoology	0.338
J Pept Sci	1.799	Ulus Travma Acil Cer	0.333
Hum Exp Toxicol	1.772	Addict Disord Treatment J	-
Com Biochem Phys D	1.718	Asia Pacif J Tropical Dis	-

Journal Factor	Impact
BMC Research Note	-
BMJ Open	-
Case Rep Radiol	-
Clinical Kidney J	-
Curr Trends Biotech Pharm	-
East Mediter Health J	-
Emergency Medicine	-
Epidem Psychiatric Scie J	-
Front Biosci	-
Front Endocrin	-
Hamdan Med J	-
Hosp Pediatr	-
Instit Remote Health Care J	-
Int J Appl Res Nat Products	-
Int J Alzheimers Dis	-
Int J Collaborative Res Internal Med	-
Int J Hepato & Panc Dis	-
J Emerg Trauma Shock	-
J Further & Higher Education	-
J Med Toxicol	-
J Pak Med Assoc	-
J Public Health Frontier	-
J Rare Diseases	-
J Sport Nutri Exercise Metab	-
Matern Child Health J	-
Med Sci Lett	-
Mol Syndromol	-
Occup Med Gen Pract	-
Oman Medical Journal	-
Prod Commun	-
Safety and Health at Work	-
Saudi J Kidney Dis Transpl	-
Scientific World J	-
Open Cardio Med J	-
Turkish J Trauma Emer Surg	-
World J Cardiol	-

مقدمة المحرر

هذا هو التقرير السنوي الثاني والعشرين عن نشر البحوث وملاحح 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 ملاحح 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 عام 2012 وعوامل تأثيرها.

حافظنا في هذا المجلد على التصميم الذي قمنا باستخدامه على مدى السنوات الخمس الماضية، حيث يحتوي هذا التصميم على أسلوب موحد ومتناسق في استخدام العناصر البصرية، ويتميز بسهولة تحديد الفصول والأقسام وفئات النص.

يسرني أن أتوجه بالشكر والثناء لفريق الإنتاج، السيدة إيفانا مصممة الجرافيك التي بذلت مجهودا في تصميم المجلد، والسيد راجا جوبالان والذي يعتني بمرحلة 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

د. ويم لامرز، المحرر

مقدمة مساعد العميد لشؤون البحث العلمي و الدراسات العليا

في كل عام تتزايد أعداد أنشطته البحثية لكلية الطب والعلوم الصحية المعروضة في مجلات عالمية مرموقة، وكما عهدهم في السنوات العشرين الماضية نحن نلنا نحافظ على نهجنا لتوعية المجتمع في دولة الإمارات ومختلف أنحاء العالم بإسهامات البحوث العلمية لكلية الطب والعلوم الصحية بجامعة الإمارات العربية المتحدة في البيئة الأكاديمية والعلمية، حيث يقوم الباحثون بكلية الطب والعلوم الصحية من مختلف التخصصات في العلوم الطبية الحيوية بتقديم إسهاماتهم للمجتمع العلمي وذلك من خلال المنشورات البحثية والمساهمات الدولية والوطنية في اللقاءات العلمية والأنشطة الأكاديمية الأخرى التي جعلتنا نحتل موقع رائد كأفضل مركز للبحوث الطبية الحيوية في دولة الإمارات والمنطقة.

بالرغم من الأجواء التنافسية العالية لجذب الأموال اللازمة للبحوث، نحن فخورون بأعضاء هيئة التدريس الذين حافظوا على بيئة تقدمية وتعاونية مع المحافظة أيضا على الإنتاجية ذات مستوى عالمي، ولا يزال مكتب البحوث والدراسات العليا المواصل في تعزيز هذه البيئة العلمية عن طريق تخصيص الموارد بصورة حكيمة ورعاية قوة جديدة وتوفير البنية التحتية والموارد اللازمة من خلال الحصول على أحدث المعدات والتقنيات بالإضافة إلى تسيير ذخير الكلية للاستهلاك العام. في السنوات الأخيرة قمنا أيضا بتطوير وصيانة مرافق البحوث المركزية مثل وحدة التصوير والأبحاث التحليلية ومرفق الخلية الجزئية الحيوية بالإضافة إلى مربي لحيوانات التجارب الصغيرة.

نود أن نعبر عن امتناننا للإسهامات والدعم المتواصل من قبل موظفي جامعة الإمارات العربية المتحدة والذين يسعون إلى جعل جامعة الإمارات العربية المتحدة مؤسسة للأبحاث المكثفة من أجل تنفيذ رؤية معالي الشيخ نهيان مبارك آل نهيان الرئيس الأعلى للجامعة.

يسرني أن أغتنم هذه الفرصة لأشكر جميع المساهمين في هذا المجلد والأسهامات البحثية بكلية الطب والعلوم الصحية.

الدكتور/ أحمد المرزوقي
مساعد العميد للبحوث والدراسات العليا

كلمة العميد

يعرض هذا التقرير السنوي مجموعة الجهود والإسهامات البحثية التي قام بها الباحثين بكلية الطب والعلوم الصحية بجامعة الإمارات العربية المتحدة، كما يعرض الإهتمامات العلمية لإعضاء الهيئة التدريسية في كل قسم. يوثق التقرير نتائج البحوث لعام 2012 وطلبات المنح الناجحة بالإضافة الى تمويل المشاريع الأخرى.

أظهرت النتائج في هذا التقرير عن وجود تقدم ملحوظ في الأنشطة البحثية لكلية الطب والعلوم الصحية في عام 2012 بالمقارنة مع السنوات السابقة. يسعدني ان أعبر عن تقديري لهذا الإنجاز الإيجابي الذي سيعزز جهودنا لكي تصبح كلية الطب الرائدة في مجال الأبحاث العلمية بجامعة وطنية متقدمة.

أود أن أعرب عن جزيل عرفاني وامتناني لزملائنا من الخارج الذين قاموا بالتعاون مع موظفي كلية الطب و العلوم الصحية والمساهمة في نجاح المشاريع البحثية والمنشورات. ونحن فخورون أيضا بالإسهامات البحثية لطلبة الطب، إن رعاية اهتماماتهم البحثية في مرحلة مبكرة من تدريبهم الطبي قد يساهم في مساعدة بعض الطلبة في إختيار مجال البحوث العلمية كخيار مهني بعد التخرج. كما نود أن نشكر رعاية إبحاثنا وذلك لتقديم الدعم المالي المتواصل لإبحاثنا السريرية والمخبرية والوبائية.

يسرني أن أعبر عن شكري الخاص إلى المحرر الأستاذ الدكتور ويم لامرز الذي عمل جاهدا بالتعاون مع السيدة إيفانا من وحدة الإعلام، ورؤساء الأقسام بالكلية وذلك لجمع وتنظيم المواد اللازمة لطبعة 2012 الخاصة بملامح بحوث وإسهامات كلية الطب والعلوم الصحية.

الأستاذ الدكتور/ تار شينج أو
القائم بأعمال عميد كلية الطب والعلوم الصحية

المحتويات

كلمة العميد

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السكرتير الإداري:
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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



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المنشورات العلمية و الاهتمامات البحثية

مكتب مساعد العميد لشؤون البحث العلمي
و الدراسات العليا

