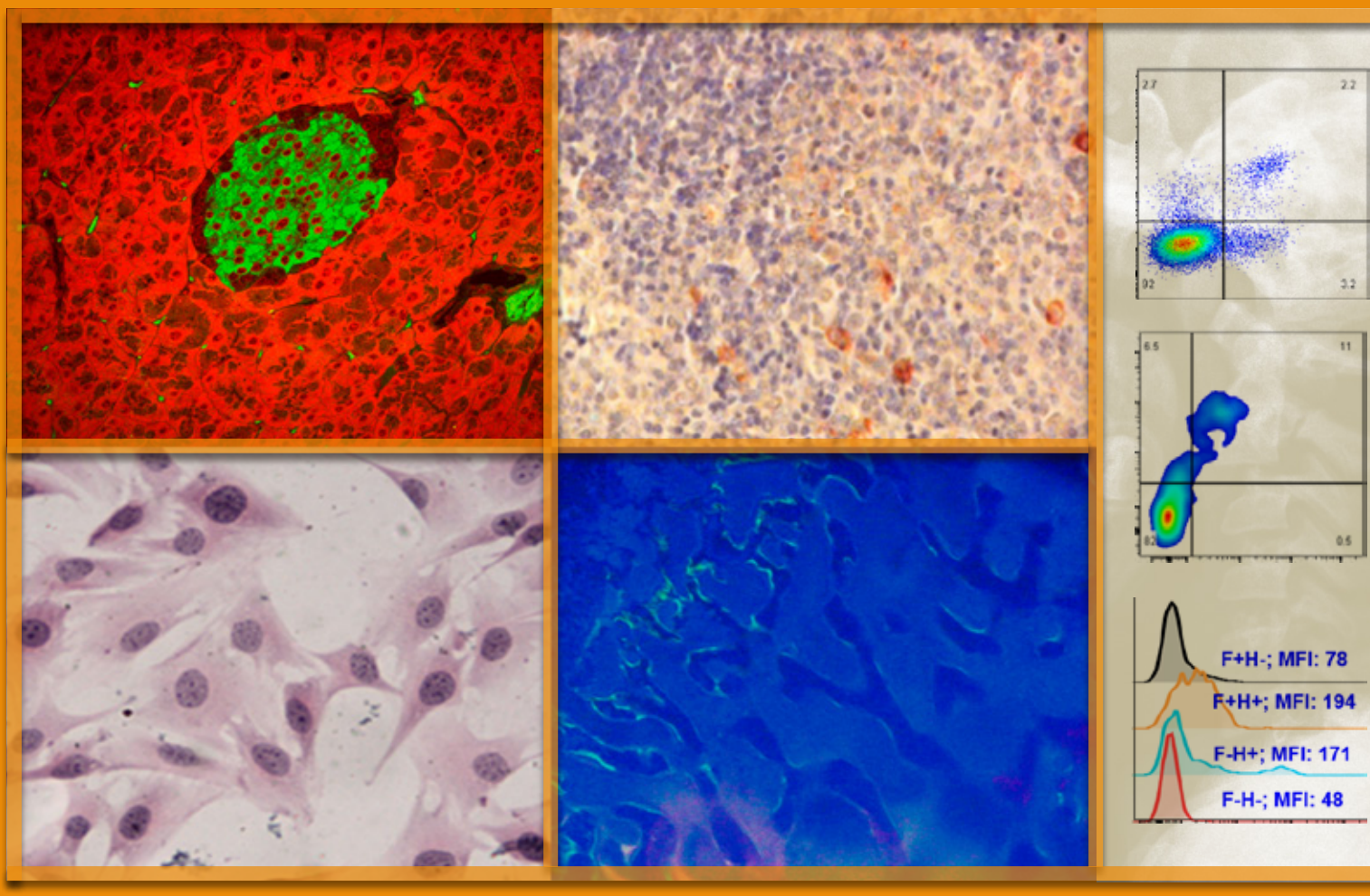
جامعة الإمارات العربية المتحدة
United Arab Emirates University

UAEU College of Medicine and Health Sciences

2015

Research Publications & Research Profiles

Office of the Assistant Dean for Research and Graduate Studies



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جامعة الإمارات العربية المتحدة
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Annual Publication of the Office of The Assistant Dean for Research & Graduate Studies

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Dean's Message

Dear Friends and Colleagues:

I am delighted to present the Research Publications and Research Profiles report for the College of Medicine and Health Sciences (CMHS) for 2015.

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

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

I would specifically like to thank Dr. Farah Mustafa and Dr. Mariam Al-Shamsi for their tireless effort to document, assemble and present this information.

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

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

Foreword from the Assistant Dean for Research & Graduate Studies

Over the years, the annual report on Research Publications and Research Profiles has provided us with a clear picture of the research endeavors and publications of CMHS in enhancing the reputation of UAEU as an outstanding research university in the UAE and the region.

More research opportunities are now available through numerous grants to provide support to not only our faculty, but for both our graduate and undergraduate medical students. Even with delays in some PIs research progress due to the ongoing maintenance work in labs and offices, our researchers managed to secure a good number of external as well as internal grants. Securing such grants has enabled our researchers to maintain their impressive productivity level which was recently recognized through rewarding those who published in top journals.

As always, I would like to acknowledge the contribution and ongoing support by the office of the Deputy Vice Chancellor for Research and Graduate Studies and the Director of Research and Sponsored Projects for their ongoing support towards providing invaluable funding sources and further support for international research collaborations.

This year of big achievements sadly ended with leave of a great participant in the generation of this annual research booklet, Mr. Rajagopalan, since the past12 years. I would like to take this opportunity to thank him and all those who have contributed to this publication and our research achievements at CMHS. I would also like to thank Prof. Bagnall, our editor for this research book last year and a great appreciation to Dr. Farah Mustafa who has agreed to take over this task this year. My sincere appreciation also goes to our dean, Prof. Dennis Templeton, for his great support to this college and for serving as the chair of the Human Research Ethics Committee.

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

Editor's Preface

This is the 25th annual report on Research Publications and Research Profiles for the College of Medicine and Health Sciences, United Arab Emirates University. These annual reports have a long history, dating back to the very first report compiled in 1991.

As usual, every year we try to upgrade and maintain the quality of this report and this year is no exception. We have continued to include the departmental profiles and the reports from Research Priority Groups as well as a synopsis of research activities undertaken by our undergraduate medical students. The end of the booklet also lists the journals in which the 2015 publications have been made and their impact factors. The design of the booklet (which was previously developed in our media center) has also been kept the same, since it appears to be well accepted. This format provides a uniform style and a consistent use of visual elements, making it easy to identify chapter, sections and text categories.

It is also a great pleasure to thank the departmental administrative assistants and the production team who has put this booklet together. Special thanks and appreciation goes to Mr. Rajagopalan as we bid him farewell after nearly 27 years at the College. He has been assisting with editing the initial departmental contributions as well as the complicated communication between all parties since the last 12 years and his departure will be sorely missed. My sincere thanks also goes to all the administrative assistants involved, especilally Ms. Wafa Al Shamsi, for taking up the challenge of learning this process from Mr Rajagopalan, rallying the other staff members, and executing the tasks with enthusiasm this year. As has been the case for years, Ms. Ivanna Lizarriturri was the proficient graphic designer who provided excellent production assistance, Mr. Ashok Prasad was the source of superb photographs from his enormous photo collection, and Ms. Al-Anood Mahfoudh Bin Tarsh Al-Jaberi was the dedicated and efficient translator who assisted with the Arabic translation.

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

Dr. Farah Mustafa, *Editor*.

Research Publications by Department

Anatomy

Biochemistry

Family Medicine

Institute of Public Health

Internal Medicine

Medical Education

Medical Microbiology & Immunology

Obstetrics & Gynaecology

Paediatrics

Pathology

Pharmacology and Therapeutics

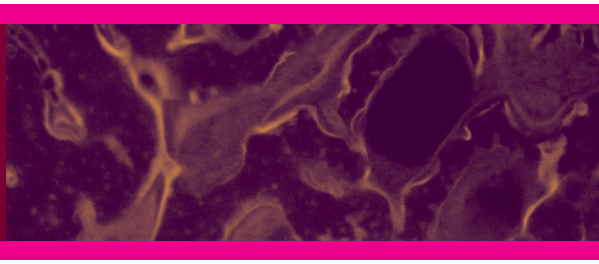
Physiology

Psychiatry and Behavioural Sciences

Radiology

Surgery

Department of Anatomy



Research Profile

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

Professor & Chair:
Prof E Adeghate
Professors:
Prof K Bagnall
Prof S M Karam
Prof E Mensah-Brown
Prof S Shehab
Assistant Professors:
Dr BS Emerald
Dr S Mohsin
Medical Research Specialists:
Ms C D'Souza
Ms M F Ibrahim
Mr P Saseedharan
Mr S Tariq
Mr W Wanniarachi
Administration:
Ms S Al Shamsi

Prof Ernest Adeghate's major research interest is on the effect of pancreas transplantation on metabolic parameters in experimental diabetes. He also examines the role of neuropeptides on insulin and glucagon secretion from the pancreas, especially in diabetic condition. Adeghate's laboratory is also interested in the cellular basis of diabetic complications in vital tissues such as the myocardium. Recent results from his laboratory showed that diabetic cardiomyopathy is associated with myofibril and mitochondrial loss, increased vacuolarization and many other defects in the organelles of the cardiomyocytes (Fig. 1). These defects support aetiopathogenesis of the signs and symptoms of cardiac disease in diabetes.

Prof Keith M. Bagnall's research focuses on three areas. He explores the aetiology of adolescent idiopathic scoliosis and possible 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. The third interest involves identifying attributes necessary to be a successful clinician and the development of tests to predict the future performance of medical students.

Prof Eric PK Mensah-Brown. This year together with my collaborators I have continued our work on the genome-wide analysis of early epigenetic targets regulated by histone modifications in type 2 diabetes and obesity, identification and characterization of the microRNAs involved in type 2 diabetes and obesity-associated insulin resistance, pathogenesis and the role of PASK, a novel member of the H3K4 methyltransferase complex in pancreatic cancer all research until 2018.

In addition, we obtained a two year faculty grant on the developmental programing of pancreatic islet hormones in normal, gestational diabetic and obese and lean type 2 diabetic rats. This year, we were able to establish the profile of insulin and glucagon in normal Wistar rats. As shown in Fig. 2, glucagon secreting alpha cells first appear by day 12.5 day of gestation and remain the most abundant cell until about the 16th day when insulin secreting beta cells become predominant. These beta cells appear as single isolated cells by day 14.5 of gestation. We have collected samples to be used to study the development and distribution of somatostatin, pancreatic polypeptide and ghrelin-secreting cells using immunohistochemistry.

We have commenced experiments on gestational diabetic rats and observed that STZ- induced gestational diabetic mothers possess less number of fetuses by the delivery time (6 diabetic Vs 13 normal fetes). This is significantly influenced by the weight of the maternal rat and the level of hyperglycemia at the time of explantation of fetuses.

Prof Safa Shehab studies the reorganisation of the neuronal circuitry in the dorsal horn of the spinal cord after peripheral nerve injury. He is investigating the types of primary afferent fibers critical for the development of neuropathic pain and identifying the ascending spinal projection pathways 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 a variety of neurological diseases.

Dr Sahar Mohsin is a medically qualified Clinical Anatomist. She joined UAEU in 2015 as an Assistant Professor in Anatomy. Prior to this she worked in Barts and The London School of Medicine & Dentistry, Queen Mary University of London, University College Cork, Republic of Ireland, National University of Ireland, Galway and Royal College of Surgeons in Ireland.

Dr Sahar Mohsin is engaged in research on bone microarchitecture, bone imaging in three dimensions, fatigue behavior of bone and development of bioactive bone scaffolds. She is interested in studying normal bone structure and compare it to bones in pathological states. Currently she is focusing on changes that occur in bones due to diabetic mellitus.

Diabetes Mellitus (DM) adversely affects the skeleton and is associated with an increased risk of fractures. Impaired accrual of peak bone mass, low bone quality and diabetic complications contribute to low bone strength in diabetics. Type I diabetes is related to low bone mineral density (BMD). Bone mineral density can be easily measured in diabetic patients with the help of dual-energy X-ray absorptiometry scan in clinical practice but bone quality is often overlooked and hence not much data is available on bone quality factors contributing to fractures in diabetes. The most important factor that affects bone quality is microstructure of bone. In one study, we aim to look at the microstructure of bone in a rat model of diabetes using histological techniques. We will be analysing bone tissue microstructure and microdamage in bone samples using fluorescent chelating agents and haematoxylin and eosin dyes and viewing them using light, fluorescence, confocal and scanning electron m icroscope (Fig. 3 & 4). This study will lead us to understand bone microstructure in diabetes; hence leading insight into pathogenesis of increased fracture risk leading us in managing bone complications in diabetes.

One of the important complications of diabetes is the increased risk of osteoporotic fractures associated with decreased density and quality of bone. Owing to its widespread worldwide prevalence, osteoporosis is considered a serious public health concern that affects over 200 million people worldwide. Approximately 30% of all postmenopausal women have osteoporosis in the United States and in Europe. Patients with type 2 DM are also at increased risk of osteoporotic fractures despite having a higher BMD. Previous studies have addressed the question of how DM induces osteoporosis; the exact underlying mechanism is still elusive. Bones undergo continuous remodeling throughout life. Bone remodeling implicates the coupling of osteoclastic bone resorption and osteoblastic bone formation. Osteoporosis is a result of bone loss that occurs by uncoupled remodeling. DM increases osteoclast function but decreases osteoblast function activity, thereby leading to accelerated bone loss, and osteoporosis in type I DM. Data on skeletal abnormalities in type 2 DM, appear conflicting, and the exact explanation is

still unknown. Moreover, more focus exists on osteoblast and osteoclast function and relatively less information is available on the role of osteocytes in osteoporosis. We are interested in investigating the potential mechanisms of DM-related bone changes at cellular level emphasizing on putative alteration in osteocyte structure.

Prof Sherif Karam's main research focuses on two fundamental aspects of stem cell biology: 1) The control of proliferation and differentiation programs of gastric stem cells in normal and abnormal conditions, 2) the potential use of gastric and dental stem cells in tissue engineering and regenerative medicine.

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

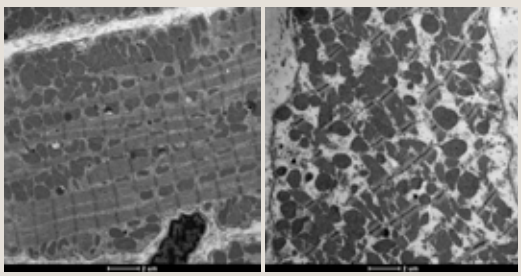


Figure 1: *Transmission electron micrographs of the heart of normal (A) and diabetic (B) rats. Note the disruption of the cardiac mitochondria (arrow) and myofibrils.*

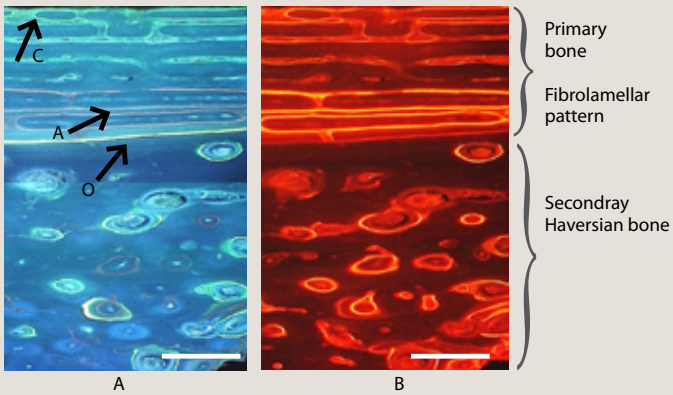


Figure 3: *Fibrolamellar pattern at the periosteal surface. The refilling labelled secondary osteon are also shown scattered subperiosteally. (a) Viewed with UV 365 nm oxytetracycline (O; yellow), Alizarin (A; red), Calcein (C; greenish yellow (b) Viewed with green epifluorescence (545 nm) alizarin and calcein fluoresced bright orange and oxytetracycline fluorescence very faint dull orange. Bar = 250μ m*

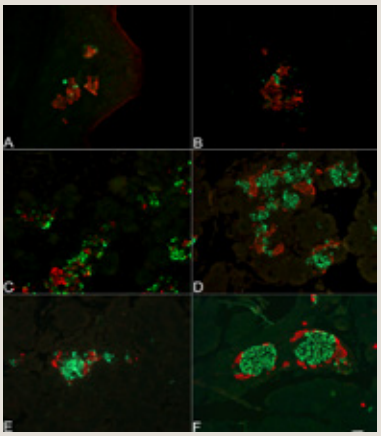


Figure 2: *Micrographs showing cells immunostained for glucagon (red) and insulin (green) in 12.5 day old (A), 14.5 day old (B), 16.5 day old (C), 18.5 day old (D), 20 day (E) embryos and fetuses and 1 day old (F) rats. Note the predominance of glucagon secreting α cells in the embryos (A and B) whilst the insulin secreting β cells predominate in the fetuses (C to F).*

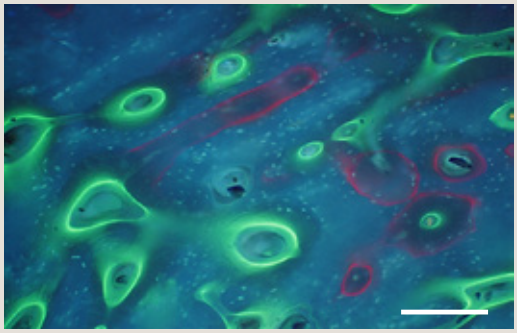


Figure 4: *Transverse section of a bone viewed with UV epifluorescence (365 nm) showing the secondary osteons labelled with calcein (greenish yellow) and alizarin (red). Bar = 250 μm.*

Articles in Peer-reviewed Journals

Aburawi EH, Aburawi HE, Bagnall KM, Bhuiyan ZA. (2015). Molecular insight into heart development and congenital heart disease: An update review from the Arab countries. Trends Cardiovasc Med, 25(4):291-301.

Adeghate E, Fehér E, Kalász H. (2015). Evaluating the Phase II drugs currently under investigation for diabetic neuropathy. Expert Opin Inv Drug, 24:1-15.

Alfazari AS, Al-Dabbagh B, Al-Dhaheri W, Taha MS, Chebli AA, Fontagnier EM, Koutoubi Z, Kochiyi J, Karam SM, Souid AK. (2015). Profiling cellular bioenergetics, glutathione levels, and caspase activities in stomach biopsies of patients with upper gastrointestinal symptoms. World J Gastroenterol, 21(2):644-652.

Al-Shamsi M, Shahin A, Ibrahim MF, Tareq S, Souid AK, Mensah-Brown EP. (2015). Bioenergetics of the spinal cord in experimental autoimmune encephalitis of rats. BMC Neurosci, 16:37.

Amiri L, John A, Shafarin J, Adeghate E, Jayaprakash P, Yasin J, Howarth FC, Raza H. (2015). Enhanced glucose tolerance and pancreatic beta cell function by low dose aspirin in hyperglycemic insulin-resistant type 2 diabetic Goto-Kakizaki (GK) rats. Cell Physiol and Biochem, 36:1939-1950.

Jamal M, Chogle SM, Karam SM, Huang GTJ (2015) NOTCH3 is expressed in human apical papilla and in subpopulations of stem cells isolated from the tissue. Genes & Diseases, 2: 261-267.

Kalász H, Nurulain SM, Veress G, Antus S, Darvas F, Adeghate E, Adem A, Hashemi F, Tekes K. (2015). Mini review on blood-brain barrier penetration of pyridinium aldoximes. Appli Toxicol, 35:116-123.

Ljubisavljevic MR, Javid A, Oommen J, Parekh K, Nagelkerke N, Shehab S, Adrian TE. (2015). The Effects of Different Repetitive Transcranial Magnetic Stimulation (rTMS) Protocols on Cortical Gene Expression in a Rat Model of Cerebral Ischemic-Reperfusion Injury. PLoS One, 10(10):e0139892.

Nemmar A, Al Hemeiri A, Al Hammadi N, Yuvaraju P, Beegam S, Yasin J, Elwasila M, Ali BH, Adeghate E. (2015). Early pulmonary events of nose-only water pipe (shisha) smoking exposure in mice. Physiol Rep, 3(3):e12258.

Reddy MM, Dhas Devavaram J, Dhas J, Adeghate E, Emerald BS. (2015). Anti-hyperlipidemic effect of methanol bark extract of Terminalia chebula in male albino Wistar rats. Pharm Biol, 53:1133-1140.

Salem KA, Jacobson M, Shafiullah M, Oz M, Adeghate E, Howarth FC. (2015). Effects of pioglitazone on the electrocardiogram in the Goto-Kakizaki type 2 diabetic rat heart. Clin Exp Res Cardiol, 1: 301-306.

Shehab S, Anwer M, Galani D, AbdulKarim Afaf, Al-Nuaimi K, Al-Baloushi A, Tariq S, Nagelkerke N, Ljubisavljevic M. (2015). Anatomical evidence that the uninjured adjacent L4 nerve plays a significant role in the development of peripheral neuropathic pain after L5 spinal nerve ligation in rats. Comp Neurol, 523: 1731-1747.

Tariq S, Rashed H, Nurulain SM, Emerald BS, Koturan S, Tekes K, Adeghate E. (2015). Distribution of nociceptin in pancreatic islet cells of normal and diabetic rats. Pancreas, 44(4): 602-607.

Published Abstracts, Letters & Correspondence

Adeghate E, Lotfy M, Singh J. (2015). Incretins increase the tissue level of endogenous antioxidants in experimental diabetes mellitus. FASEB, 29 (Suppl 1): 621.4.

Lammers WJ, Stephen BS, Karam SM. (2015). Slow wave dysrhythmias in the diabetic small intestine. Neurogastroent Motil, 27(9):1344.

Shehab S, Anwer A, Galani D, AbdulKarim A, Ljubisavljevic M. (2015). Relationship of pERK-activated spinal neurons in response to noxious heat stimuli applied to hind paw with normal and injured l5 primary afferents. 9th Congress of the European Pain Federation (EFIC). Vienna, Austria.

Proceedings, Conferences, Invited Lectures, Websites & Others

Adeghate E. (2015). Incretins Increase the Tissue Level of Endogenous Antioxidants in Experimental Diabetes Mellitus. Experimental Biology Meeting, Boston, MA USA. March 28-April 2.

Alkaabi AM, Karam SM, Al Menhali AA (2015) The Role of Estrogen Signaling Pathway on Mouse Gastric Stem Cell Homeostasis. UAEU Annual Research Day, Al Ain, UAE.

Al-Menhali AA, Vijay D, Al Shamsi S, Karam SM (2015) Functional Analysis of Parathyroid Hormone-Like Hormone in the Mouse Stomach. UAEU Annual Research Day, Al Ain, UAE.

Al Menhali AA, Vijay D, Branicki F, Karam SM (2015) Expression of Parathyroid Hormone-Like Hormone Receptor in Normal and Cancerous Stomach. UAEU Annual Research Day, Al Ain, UAE.

El Kharrag R, Amin A, Greish Y, Hisaindee S, Karam SM (2015) Potential Therapeutic Application of Novel Crocin-Encapsulated Nanoparticles against Liver Cancer. The 1st UAE Graduate Students Conference, Abu Dhabi, UAE

Greish YE, Karam SM, Mourad AH, Pulikkot S, Saseedharan P, Thoms SA (2015) Growth and Differentiation of Gastric Stem Cells on 3D Biodegradable Scaffolds. UAEU Annual Research Day, Al Ain, UAE.

Karam SM (2015) Bridging the gap between basic science and clinical research (2015) The 1st Emirates Digestive Disease Week, Abu Dhabi, UAE. (Invited Speaker)

Karam SM (2015) Role of Stem cells in gastric cancer. The 42nd Congress of the International Society of Oncology and BioMarkers. Zakopane, Poland. (Invited Speaker, and Co-Chair of Symposium)

Karam SM (2015) Update on Stem Cell Research in UAE. International Stem Cell Symposium. Doha, Qatar. (Invited Speaker)

Karam SM (2015) Thoughts for PhD Students. Workshop Orientation for PhD Students, College of Graduate Studies, UAE University, Al Ain, UAE. (Keynote Speaker)

Mensah-Brown EPK, Adeghate EA, Emerald BS. (2014). PASK regulates metabolic signaling through histone modification. Epigenetics and Chromatin. Cold Spring Harbor, NY USA.

Mohsin S. (2015). Interaction of fatigue microcracks with microstructure of bone. UAEU Annual Research & Innovation Conference (UAEU ARIC 2015), UAEU Al Ain, November 24 – 25.

Mohsin S. (2015). Novel Biomaterial for the Synthesis of Porous Bone Scaffolds. 14th International Symposium on Advanced Materials, National Centre for Physics, Islamabad, Pakistan. October 12-16. http://www.isampk.com.pk/.

Pulikkot S, Greish YE, Mourad AH, Karam SM (2015) Effect of acidic pH on growth and differentiation of gastric stem cells on 3D microfibrous polycaprolactone scaffold. The 1st UAE Graduate Students Conference, Abu Dhabi, UAE.

RESEARCH GRANTS

CMHS Research Grants

Prof E Adeghate [PI], Dr BS Emerald
The effect of betatrophin on the metabolic parameters of an animal model of diabetes mellitus. (2015-2016).

Dr BS Emerald [PI], Profs EPK Mensah-Brown, E Adeghate
Identification and characterization of the microRNAs involved in type 2 diabetes and obesity-associated insulin resistance pathogenesis

Prof EPK Mensah-Brown [PI], Dr BS Emerald
Developmental programming: Pancreatic islet hormonal cells. (2015-2016).

Dr BS Emerald [PI]
Profiling the role of miRNAs 19, 29 and its isoforms in Emirati patients with diabetes mellitus. (2014-2016).

Dr S Mohsin [PI]
Effect of diabetes mellitus on bone structure

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

Prof E Adeghate [PI], Dr BS Emerald
Effect of ghrelin on metabolic parameters of normal and diabetic rats

Dr BS Emerald [PI], Profs EPK Mensah-Brown, E Adeghate
Unraveling the role of DNA methylation in the initiation of the metabolic syndrome using rodents as model system, (2015-2017).

Terry Fox Foundation

Amin A, Karam SM, Nazar Zaki, Kourosh Salehi-Ashtiani: Effects of Crocin "Saffron" on Human Hepatocellular Carcinoma: An in vitro-based metabolomic approach. Terry Fox Foundation Grant (2014-16)

UAEU/SQU Joint Research Project

Dr BS Emerald [PI], Profs EPK Mensah-Brown, E Adeghate
Analysis of molecular epigenetic programming of diabetes mellitus. (2013-2016).

UAEU-Centre-based Interdisciplinary/UPAR/Start-up Grants

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

Prof S Shehab [PI]
The role of spinal inhibitory neurons in pain circuitry. (2015-2017).

Profs B Issa [PI], Shehab S
Modeling Vessel Geometry and Topology in Differentiating Tumour from Normal Tissue in Magnetic Resonance Imaging.

Profs A Adem [PI], Profs S Shehab, S Ogren, A Salem
Novel mechanisms for effective antidepressant drugs. (2014-2016).

Profs O El-Agnaf [PI], S Shehab, Dr. E Haque, Prof M Ljubisavljevic, Drs S-J Lee, E Masliah.
Novel conformation-specific antibodies for immunotherapeutic intervention in Parkison's disease and related disorders. (2014-2015).

Dr BS Emerald [PI], Profs EPK Mensah-Brown, E Adeghate
The role of PASK, a novel member of the H3K4 methyltransferase complex in pancreatic cancer. (2015-2018).

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

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

Mourad A, Greish YE, Karam SM: Formation, Characterization and In Vitro Evaluation of Alumina Nanoparticles-reinforced Polymer

Composites for Biomedical Applications (2013-15)

UAEU-National Research Foundation

Greish YE, Karam SM, Mourad A: Nanofibrous Scaffolds for Stem Cell Transplantation: stage 2 (2013-15)

Lammers W, Karam SM, Huizinga JD: Morphological, electrical & mechanical disturbances in stomach & small intestine of diabetic rats (2012-15)

Al Fazari A, Karam SM, Souid A: Role of Estrogen in Gastric Epithelial Homeostasis (2013-15)

Al Menhali AA, Karam SM: Molecular and functional studies on the role of parathyroid hormone-like hormone (Pthlh) in the stomach (2013-15)

Emirates Foundation

Karam SM, Bahrwani S: Stem cells and Helicobacter pylori in the stomachs of children (2012-15)

2015

Anatomy

Standing left to right:
S Shehab, A Wanni, P Saseedharan, S Karam, S Tariq, KM Bagnall, S Emerald

Seated left to right:
S Nair, M Ibrahim, R El-Kharrag, EPK Mensah Brown, S Al Shamsi, E Adeghate, C D'Souza, TV Basheer

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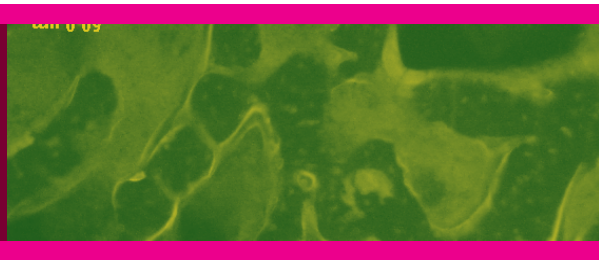
Department of Biochemistry



Research Profile

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

Professor & Chair:
Prof H Raza
Professors:
Prof O El- Agnaf[1]
Prof S Galadari
Associate Professors:
Dr A Al-Marzouqi
Dr M J F Cabezudo
Assistant Professors:
Dr S Ansari
Dr M Emdadul Haque
Dr F Mustafa
Dr S Al Qassim
Medical Research Specialist:
Dr M Ardah
Dr C Jisha
Ms A John
Mr M Qureshi
Dr F T Thayyullathil
Medical Research Technician:
Mr A Qader
Senior Administrator:
Ms W Al Shamisi

1 Departed in October 2015

Prof. Sehamuddin Galadari continues to work as the Academic and Research advisor to the chairperson of the Board of Directors of the Al Jalila Foundation for Medical Education and Research, Dubai. Dr Ahmed Al-Marzouqi is also holding additional responsibilities as the Director of Research & Funded Projects in the Office of the DVC (Research & Graduate Studies) at UAEU. Prof. Omar El-Agnaf left the college in October 2015. Dr Saif Al Qassim, a National faculty member, is on a research assignment at the University of Pennsylvania, Philadelphia, USA.

The Department of Biochemistry is a key participant in medical education leading to the MD and Bachelors of Medical Science degrees. In addition, we contribute to teaching and practical research training in the MS and PhD programs in Biomedical Sciences. Our graduate programs at the College of Medicine and

Health Sciences is a multi-disciplinary program which provides students with a foundation in Biochemistry, Molecular and Cellular Biology as well as intensive state-of-the -art laboratory research training.

Molecular toxicology and cellular oxidative stress (Prof Haider Raza)

Research Interest

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

Research Highlights

Our recent study has demonstrated that NSAIDs induce oxidative stress, alter mitochondrial bioenergetics, and redox homeostasis. Altered mitochondrial functions and glutathione-dependent redox homeostasis have been implicated in toxicities and diseases, including cancer, diabetes, and cardiovascular disorders. We have identified molecular and metabolic targets of cytotoxicity in cancer and non-cancer cell lines. We are also investigating the mitochondrial functions, oxidative stress and drug metabolizing enzyme systems in cardiac and other tissues from type 1 and type 2 diabetes using in vivo rat models. We have demonstrated that tissues from type 2 diabetic/obese rats have increased oxidative stress and altered mitochondrial function. Our recent study has also shown that low dose aspirin ingestion improves glucose tolerance and pancreatic endocrine functions in insulin-resistant type 2 diabetic rats.

Protein misfolding and neurodegenerative diseases (Prof Omar MA El-Agnaf)

Research Highlights

Parkinson's disease is a debilitating neurodegenerative disease characterized by tremor, rigidity, bradykinesia, and postural instability for which there is no effective treatment available to date. Here we report the development of non-viral vectors specific for neuronal cells that can deliver short interfering RNAs (siRNA) against the α-synuclein gene (SNCA), and prevent Parkinson's disease-like symptoms both in vitro and in

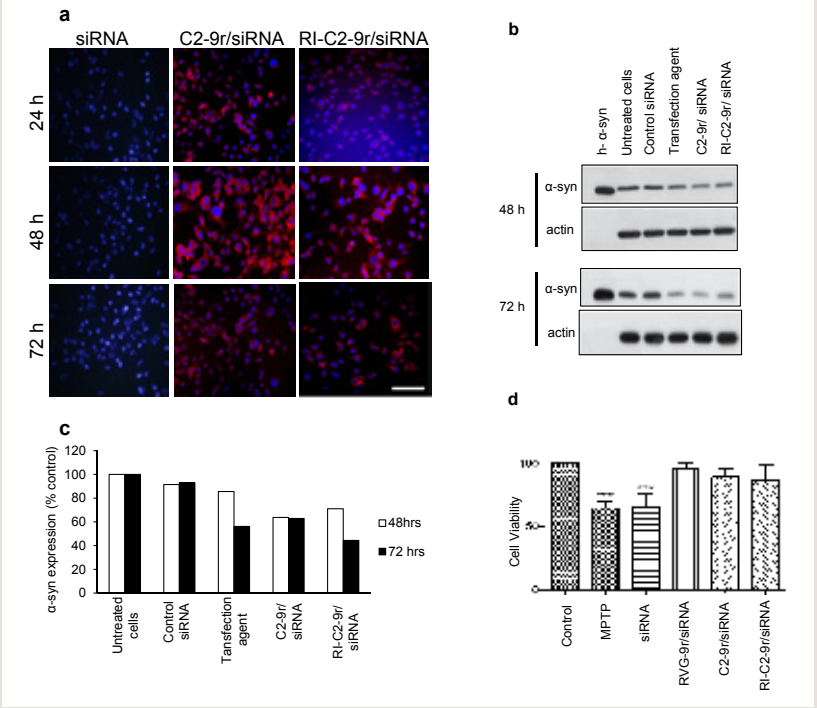


Figure 1. *Non-viral vectors mediate siRNA delivery and gene knockdown in vitro. (a) M17 cells were treated with rhodamine-siRNA alone or complexed with vectors and the intracellular localization of siRNA was confirmed by florescence microscopy after 24, 48 and 72 h. Images of rhodamine-siRNA (red) positive cells are shown with the nuclei stained by DAPI (blue). Scale bar is 100 µm. (b) M17 cells stably expressing wild-type α-syn were transfected with siRNA using a commercial transfection agent or with vector complexed-SNCA siRNA and α-syn expression levels were evaluated 48 h and 72 h after transfection by western blotting. α-Syn expression was normalized to beta-actin and the percentage of expression in transfected cells was plotted relative to untransfected cells. (c) M17 cells stably expressing wild-type α-syn were transfected with SNCA siRNA either by complexing with vectors or using a commercial transfection agent. (d) At 72 h post transfection, the cells were exposed to 2.5 mM MPP+ for 6 h after which cell viability was quantified using MTT assay (***P < 0.0001, one-way ANOVA).*

vivo. These vectors not only help siRNA duplexes cross the blood brain barrier in mice, but also stabilize these siRNAs leading to a sustainable 60%-90% knockdown of α-synuclein protein. Mice treated with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine rapidly develop Parkinson's disease-like symptoms which were significantly alleviated when SNCA was knocked down using our vectors (Fig. 1). Together, our data not only confirms the central role of α-synuclein in the onset of Parkinson's disease, but also provides a proof-of-principle that these non-viral vectors can be used as novel tools to design effective strategies to combat CNS diseases.

Cholinergic modulation of the immune response (Dr Maria J Fernandez-Cabezudo)

Research Interest

The main research interest in my lab is to investigate the potential mechanism by which the cholinergic nervous system modulates the immune response in infectious episodes and autoimmune diseases. We have demonstrated that the inhibition of acetylcholinesterase (AChE) enzyme, which results in increased cholinergic pathway activity, modulates anti-bacterial immune responses, leading to increased protection against a lethal infection. The exact mechanism 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

Type I diabetes (T1D) is an autoimmune disease that results from a deficiency in the production of insulin due to a strong inflammatory immune response and T cell-mediated damage of pancreatic ß-cells. The cholinergic anti-inflammatory pathway is a physiological mechanism that connects the central nervous system with the immune system via the vagus nerve

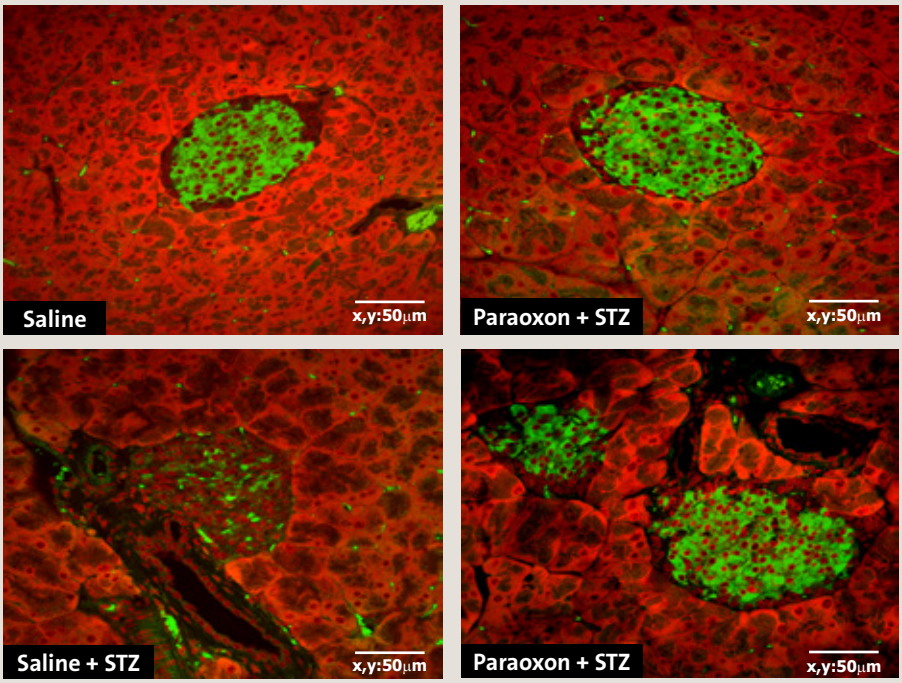


Figure 2. *Paraoxon inhibits the destruction of insulin-producing β-cells induced by MLD-STZ. The confocal micrographs show the insulin content (green) inside the pancreatic islets. The number of insulin-producing cells in STZ-treated group (C) is reduced compared to the control saline group (A). However, pancreatic islets from paraoxon pre-treated mice (D) conserved most of the β cells. Pictures are representative of 5 mice per group and 2 different experiments.*

and controls the release of pro-inflammatory cytokines. Therefore, we investigated the potential of regulating the inflammatory response in a model of T1D through the administration of paraoxon, a potent inhibitor of AChE. We demonstrated that pretreatment with paraoxon prevented the development of hyperglycemia in STZ-treated C57BL/6 mice which correlated with a significant reduction in T cell infiltration into the pancreatic islets and preservation of the structure and functionality of the ß-cells (Fig. 2). Gene expression analysis of pancreatic tissue demonstrated that increased peripheral cholinergic activity prevented the loss of insulin production induced by STZ administration. This was associated with a marked reduction in pro-inflammatory cytokines in pancreas and peripheral lymphoid tissue. Our results provide mechanistic evidence for the modulation of murine T1D by the cholinergic anti-inflammatory pathway.

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

Sphingolipids are bioactive molecules that regulate various aspects of cellular proliferation and survival. Modulation of sphingolipids is implicated in the mechanism of action of various anticancer chemotherapeutics. Ceramide and sphingosine are the central molecules of sphingolipid metabolism that mediate anti-proliferative responses, such as cell growth inhibition, apoptosis induction, senescence modulation, endoplasmic reticulum stress responses and/or autophagy regulation. Prevention of human cancer development depends on the integrity of a complex network of defense mechanisms that help cells to respond to various stress conditions. A key player in this network is ceramide which can selectively destroy a wide variety of cancer cells via programmed cell death such as apoptosis, autophagy and or necrosis. By inducing efficient growth inhibition and cell death, ceramide eliminates cancer cells and prevents the development of human malignancies. These functions of ceramide determine the efficacy of several anti-cancer therapies, as they are capable of inducing ceramide generation. However, the tumor suppressive activity of ceramide is hampered by malfunction of its many modulators such as, ceramidases, sphingomyelinases, and glucosyl ceramide synthase. These enzymes govern ceramide's tumor suppressive activity by acting upstream and/or downstream of ceramide biosynthetic pathway.

Autophagy (Type II programmed cell death) was initially identified as a survival mechanism

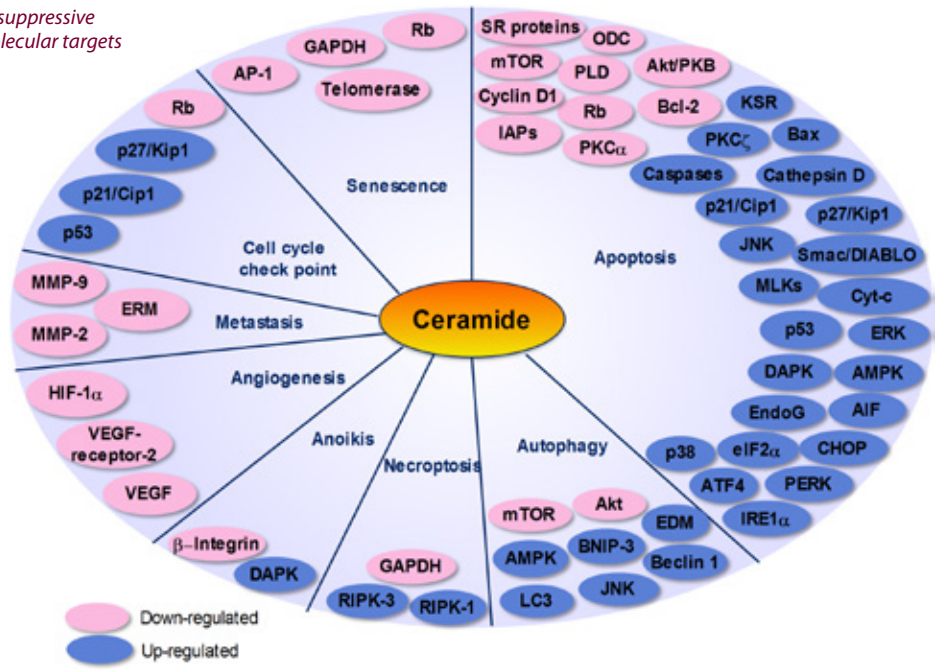


Figure 3: *Tumor suppressive functions and molecular targets of ceramide*

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

My research group at the Cell Signaling Laboratory is focusing on the molecular characterization of sphingolipids in cancer biology, especially that of ceramide and sphingosine. The goal of our research is to elucidate how ceramide and its metabolite sphingosine communicate and signal in response to anti-cancer treatment, and what other signaling pathways are involved in this interaction (Fig. 3). We use both biochemical and genetic approaches to study the whole family of related sphingolipids that are involved in tumor suppression.

Our laboratory focus is on the following research areas:

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

Molecular Basis of Viral Pathogenesis (Dr Farah Mustafa)

My main research interest lies in the area of molecular basis of replication and diseases induced by retroviruses. These single stranded RNA viruses are well-known pathogens that cause debilitating diseases such as immunodeficiency syndromes and a variety of cancers in both man and animals. Currently, my group is focusing on the molecular mechanisms of replication of the mouse mammary tumor virus (MMTV)--in particular its nucleocytoplasmic RNA transport and encapsidation. This virus also causes breast cancer in mice with suggestions that it may be crossing the species barrier into humans. Thus, we are also studying the viral etiology of human breast and other cancers. Additionally, we are also interested in the virus-host interactions that affect gene expression via miRNAs and mechanism of MMTV-induced tumors in the host. Other collaborative projects include electrical characterization of viruses, cells (normal and diseased), and macromolecules, as well as the anticancer activities of indigenous medicinal plants.

In our ongoing studies, we have demonstrated that MMTV-like sequences are rare in the human breast cancer tissues of Pakistani origin. We have expanded the tissue cohort to those from the UAE and to other types of hormonally-sensitive tumor tissues and observe similarly that it is rare to find MMTV positive samples. The sporadic positive samples are being further investigated for confirmation. Other collaborative studies have resulted in the characterization of the secondary structure of the RNA motifs used by MMTV to package its RNA into the virus particles and currently we are studying the role of the 5' end sequences in nucleocytoplasmic RNA transport. We have also conducted collaborative studies on the electrical properties of different types of retroviruses to determine whether these particles can be detected electrically and whether they exhibit specific electrical behavior. These studies show that even very closely related retrovirus particles can be distinguished from each other based on their electrical signatures, opening new avenues of research into electrical-based detection of medically important viruses to human health. Finally, work has been initiated to study the role of miRNAs in MMTV replication and pathogenesis as well as characterizing the anti-cancer activities of indigenous medicinal plants. Our ongoing research projects include:

1. Regulation of retroviral gene expression, replication, and pathogenesis
2. Viral etiology of human cancers, especially breast cancer
3. Novel methods of virus and cell detection
4. Mechanism of virally-induced oncogenesis and virus-host interactions
5. Identification and characterization of potential anti-cancer plant-based therapies

Molecular Mechanisms of Neurodegeneration (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 insights into important mechanisms underlying degeneration in PD. Therefore, recapitulation of mutations in these genes in model systems has provided powerful tools for studying the underlying mechanisms of PD and will help to develop more appropriate/effective treatments for the disease.

Research Highlights

1. Role of Glucocerebrosidase (GBA) in drosophila model of Parkinson's disease and its interaction with α-synuclein.
2. Study the function of ATP13A2 in drosophila model of Parkinson's disease and its interaction with α-synuclein.
3. Study the spread and transmission of human α-synuclein in mouse model system.
4. Study the neuroprotective potential of medicinal compounds using neurotoxin-induced model of Parkinson's disease.

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

The research in my laboratory is focused on understanding the mechanisms of action of the protein complexes that regulate gene 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 important cellular processes required for maintenance and growth of the cell. Many studies in the past few years have described conserved protein complexes whose function is to modulate the access of transcription factors to regulatory regions of genes, relieving chromatin-mediated repression. The action of these complexes that are able to overcome the repressive effects of chromatin is an important step in the regulation of eukaryotic gene expression.

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

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

We have previously shown that acetylation of nucleosomal array templates by histone acetyltransferase (HAT) complexes stabilizes SWI/SNF binding to promoter nucleosomes after the dissociation of the activator. Many chromatin-modifying complexes, including SWI/SNF and SAGA, contain highly conserved bromodomains that bind to acetylated lysine residues in histone N-terminal tails in vitro. Later, using immobilized template assays, we have shown that the Swi2/Snf2 and Gcn5 bromodomains play important roles in the anchoring of the SWI/SNF and SAGA complexes to acetylated promoters, respectively. More recently, we have demonstrated the requirement of the Swi2/Snf2 bromodomain for the functional activity of the complex on SAGA-acetylated nucleosomes. These studies illustrate a novel and significant role of the Swi2/Snf2 bromodomain in remodeling of acetylated promoter nucleosomes and in displacing SAGA from promoters.

2. Identification and characterization of novel ATP-dependent chromatin remodelling complexes. Phylogenetic analysis shows that chromatin-remodeling proteins share several common features including the presence of a distinct ATPase domain. Based on sequence

homo logy 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 mechanism of action in gene regulation. The fact that similar and several chromatin remodeling complexes are present across the eukaryotic kingdom, from unicellular yeast to humans, supports the notion that they are maintained in evolution due to their important role in the regulation of gene expression. Identification, characterization, and investigation of action of novel chromatin remodeling complexes is very exciting and could lead to the identification of drugs targets and the development of potential drugs to cure human disease, specifically cancer in the future.

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

A defining feature of stem cells is their ability to continuously maintain a stem cell population (self-renewal), while generating differentiated progeny. Thus, stem cells are faced with a uniquely difficult task: to avoid cell cycle exit and differentiation, and to avoid uncontrolled proliferation and tumor formation. How stem cells walk this developmental tightrope is an extremely interesting question.

Embryonic stem cell (ESC) differentiation has the potential to be instrumental in cell based therapies, in vitro disease modeling and chemical screens. To fulfill those expectations, ESCs have to be differentiated at high efficiency to disease relevant cell types, either by the application of extracellular signals or direct programming by forced expression of transcription factors (induced pluripotent stem cells or iPSCs). They can be cultured continuously in their pluripotent state, and can also be induced to differentiate into cell types from all three germ layers (ectoderm, mesoderm and endoderm). Because of these unique properties, ES cells are of great interest to both basic and clinical research. They can be used as a model system to study the mechanism of pluripotency and fate-specification during early mammalian development, and they can also be used to derive various types of cells for disease modeling, drug discovery, and the development of cell-based therapies. Discovering how stem cells are maintained in a multipotent state and how their progeny differentiate into distinct cellular fates is a key step in the therapeutic use of stem cells to repair tissues after damage or disease.

Research Highlights:

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

The current goal of my research is to understand how extracellular signals and transcription factors control cell fate and apply that knowledge to differentiate ESCs into disease relevant neuronal cell types. We use published protocols to differentiate the ES cells toward neuronal fate. In these in vitro models, neural differentiation recapitulates key events that occur in early embryo development, including induction of multipotential neuroepithelial cells that form neural tube-like structures, patterning of region-specific neural progenitors, and generation of neurons and glia with particular transmitter or functional phenotypes. Our target is to identify transcriptional and post-transcriptional regulatory mechanisms that control the expression of genes involved in cell division at different stages of embryonic neurogenesis.

Another objective of my research is to study the mechanisms of ES cell differentiation into hepatocyte like cells. Several groups have recently described protocols that can induce the differentiation of cells with gene expression and functional profiles that closely resemble that of hepatocytes using both hESCs and hiPSCs. Most of the approaches that have been described have successfully exploited data generated from decades of research into the molecular mechanisms that control hepatocyte differentiation during embryogenesis. However no protocol has successfully generated hepatocytes that can fully replace the parenchymal cells of the mouse liver in the manner that primary human hepatocytes are capable of. It is therefore of

prime importance to further the understanding of molecular mechanisms that control cell fate during development as well as hepatic metabolism. Role of transcriptional co-regulators are still poorly characterized in the metabolic regulation of pluripotency and cell differentiation. In this direction, my research focus is on Mediator complex, a multi-subunit transcriptional coactivator. We have identified a specific subunit of this complex in the expression of genes involved in energy metabolism. The role of energy metabolism in stem cell fate determination is only beginning to emerge. Understanding the transcriptional regulatory mechanisms in the metabolism and stem cell fate in the process of hepatogenesis will lead to the identification of molecular targets for the efficient generation of functional hepatocytes generated from human ESCs and iPSCs.

Regulation of Actin Cytoskeletal Dynamics (Dr Saif Al Qassim)

Many essential cellular processes require the actin cytoskeleton dynamics to be tightly regulated in a spatial and temporal manner. As such, actin has many binding proteins to control its architecture, and many cellular signaling pathways end at these proteins in order to reorganize the actin cytoskeleton. Dysregulation of actin dynamics has been implicated in many diseases such as neurodegenerative diseases, cardiovascular disorders, and cancers. Furthermore, many bacterial pathogens are able to hijack the actin cytoskeletal machinery, and this is an important step for pathogenicity. My research interests lie in characterization of proteins that modify actin in response to upstream cellular signaling such as Molecule Interacting with CasL (MICALs) that have implications in the aforementioned diseases,. Understanding function and mechanism at the molecular level is crucial for future development of therapies that target these proteins in disease pathologies.

Research Highlights:

MICALs comprise a family of proteins that combine an N-terminal catalytic monooxygenase (MO) domain with three other protein-protein interaction domains, and are essential for cytoskeletal reorganization in processes such as motility, navigation, nerve development, endocytosis, and apoptosis. Mammals contain three MICAL isoforms. In MICAL-1, the MO domain is followed by a type-2 calponin homology (CH) domain, a LIM domain, and a coiled-coil ERM domain. Through the redox activity of the MO domain, MICAL-1 has been shown to oxidize actin filaments, leading to their depolymerization.

My objective is to understand the function of non-redox protein-protein interaction domains of MICALs at the molecular level in the context of actin modification activity. Although many genetic and cell-based studies have been performed to elucidate MICALs function(s), the role and means by which the protein-protein interaction domains are involved in modulating MICALs activities are unclear.

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Kalloush RM, Ali LM, Mustafa F, Rizvi TA. (2015). Optimal packaging of Mason-Pfizer monkey virus (MPMV) genomic RNA depends upon conserved long range interactions (LRIs) between U5 and Gag sequences. Presented at the 40th annual meeting on Retroviruses, Cold Spring Harbor, NY USA, May 18-23.

Marcogliese P, Kim KS, P. Wei C, Yang J, J, Abdel-Messih E, Kabbach, Slack RS, R. Haque ME, Venderova K, Schlossmacher MG, Park DS. (2015). LRRK2 modulates phagocytic activity of microglia via phosphorylation of the actin-nucleating complex WAVE-2. Society for Neuroscience (SFN), 2015, Chicago, IL USA, Oct 17-21.

Mustafa F, Akhlaq S, Kalloush RM, Phillip PS, Aktar SJ, Ali LM, Dudley JP, Rizvi TA. (2015). Dual role of sequences at the 5′ end of the MMTV genome in RNA export and packaging. 40th annual meeting on Retroviruses, Cold Spring Harbor, NY USA, May 18-23.

Ojha S, Javed H, Azimullah S, Abul Khair SB, Haque ME. (2015). Beta-caryophyllene ameliorates oxida-

tive stress and neuroinflammation in rat model of rotenone-induced Parkinson's disease. SFN 2015, Chicago, USA, Oct 17-21.

Ramadi KB, Mohamed Y, Al-Sbiei A, Al Marzooqi S, Bashir G, Al Dhanhani A, Sarawathiamma D, Qadri S, Yasin J, Nemmar A, Fernandez-Cabezudo MJ, Haik Y and al-Ramadi BK. (2015). Acute systemic exposure to metallic nanoparticles induces hepatotoxicity and NLRP3 inflammasome-mediated inflammation. Annual Research and Innovation Conference 2015, UAE University. Al Ain, UAE, Nov 24-25.

Raza H, John A, Jasmin S. (2015). Nonsteroidal anti-inflammatory drugs (NSAID)-induced alterations in inflammatory and metabolic stress in cancer and non-cancer cells. EAS2015: EACR/AACR Anticancer drug action and drug resistance: from cancer biology to the clinic, Annual Meeting, Florence, Italy, June 20-23.

Raza H, John A, Shafarin J. (2015). Potentiation of LPS-induced toxicity in human hepatoma HepG2 cells by aspirin and its protection by N-acetyl cysteine. 106th Annual Meeting of American Association for Cancer Research (AACR), Philadelphia, PA, USA April, 18-22.

RESEARCH GRANTS

CMHS Research Grants

Prof H Raza [PI]
Exercise-induced alterations in oxidative stress and metabolic complications in type 2 diabetic Goto-Kakizaki (GK) rats.

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

Dr S Ansari [PI]
Understanding the role of O-GlcNAc modification in the epigenetic regulation of gene expression in metabolism and disease.

Terry Fox Fund for Cancer Research

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

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

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

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

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

Prof H Raza [PI]
Effects of aspirin and glutathione/N-acetylcysteine on streptozotocin-induced metabolic changes in insulin secreting pancreatic beta cells as a model to study type 1 diabetes.

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

Dr F Mustafa [PI]
Investigation of Mouse Mammary Tumor Virus (MMTV) Presence in the UAE Population: A Putative Viral Agent in Human Breast Cancer.

Al Jalila Foundation Grant

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

National Research Foundation Grant, UAE University Grant

Prof S Galadari [PI]
Investigating the role and mechanism of Par-4 cleavage in tumor suppression
Par-4 regulates autophagic cell death in human malignant glioma: novel role of Par-4 in tumor suppression

Dr MJ Fernandez-Cabezudo [PI]
Modulation of the immune response to infection by organophosphorus compounds.

Dr Fernandez-Cabezudo MJ [PI]
Cholinergic regulation of mucosal interphase:a biochemical and histological analysis.

Dr F Mustafa [PI]
Characterization of mouse mammary tumor virus (MMTV) in human tumors in the UAE: is MMTV a general biological carcinogen?

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

Dr ME Haque [PI]
Investigating the role of Parkinson's disease associated lysosomal gene (PARK9) in drosophila model.

Dr ME Haque [PI]
Application of conformation-specific antibodies to biomarker development for Parkinson's diseases. (Transferred from Prof. Omar to Dr Emdad)

Dr ME Haque [PI]
Novel conformation-specific antibodies for immunotherapeutic intervention in Parkinson's disease and related disorders. (Transferred from Prof. Omar to Dr Emdad)

Dr S Ansari [PI]
Transcriptional regulation of Insulin signaling pathway by Mediator complex in liver.

Dr AH Al Marzouqi [PI]
Molecular mechanisms of gene regulation through epigenetics: the role of chromatin remodelers in cancer.

Emirates Foundation Research Grant

Dr AH Al Marzouqi [PI]
The cooperation and/or competition between the ATP-dependent chromatin-remodeling protein SWI/SNF and the histone acetyltransferase SAGA in binding to nucleosomes.

UAE University Start-Up Grant

Dr F Mustafa [PI]
Investigations into the Mechanism of Replication, Gene Expression, and Oncogenesis Using the Mouse Mammary Tumor Virus Model System. [Continuation]

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

Dr S Ansari [PI]
Transcriptional & post-transcriptional regulation of human embryonic stem cell self-renewal and differentiation

2015

Biochemistry

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

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

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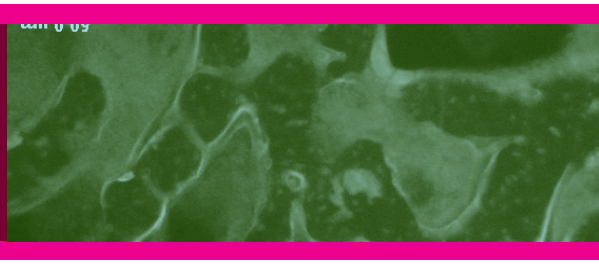
Department of Family Medicine



Research Profile

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

Associate Professor & Chair:
Dr EAM Prinsloo
Associate Professor:
Dr M J Hashim
Assistant Professor:
Dr C Clor
Dr MAB Khan
Dr U Lashari
Medical Research Specialist:
Ms H Mustafa
Medical Secretary:
Ms Amel Al Murri

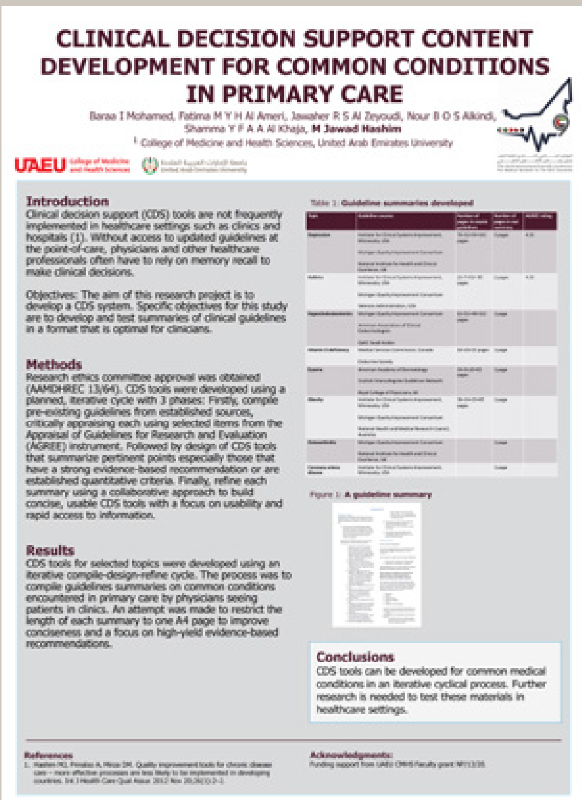
Dr Engela Prinsloo an Associate Professor who is an international member of the Editorial Board of the South African Family Practice Journal. She has reviewed 4 articles for journals including the former and the African Journal of Primary Healthcare & Family Medicine. She is involved with a collaborative study: "Designing a model to teach critical thinking and clinical reasoning in an EMR environment" (a College of Medicine and Health Sciences (CMHS), Ambulatory Healthcare Services (AHS), and SEHA collaboration.

Dr. Prinsloo is involved in on going research exploring the use of e-portfolios in a family medicine clerkship. The value of e-portfolios to teach and assess rational prescribing and the impact of the EMR on Family Medicine clerkship teaching is his current focus.

Dr Jawad Hashim, an Associate Professor, has research interests in eHealth and health systems improvement. With a multi-year faculty research grant from the UAE University, he continues his project on improving physician efficiency and patient safety. His efforts on developing new approaches to physician-computer interactions in clinical settings were presented at a recent UAEU

Research Conference during the national Innovation Week 2015. By optimizing the graphical interface as well as modelling of physician behavior, significant gains can be obtained in documentation times and clinical decision support. In addition, Dr Hashim presented a promising method to improve diabetes care using a novel 'Diabetes Score.' This patient-empowering tool was proposed at the American Association of Clinical Endocrinologists Gulf Chapter, and received a good response. Dr. Hashim also serves as a statistical advisor and research methodologist to doctoral fellows and co-researchers at the University.

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



Dr Usman Lashari is an Assistant Professor and joined UAEU in March 2012. He is the 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. His main areas of interest are Postgraduate Medical Education and Dermatology in Primary Care. He is a Fellow of American Academy of Dermatology.

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

To provide holistic care to his patients while working as a family physician, he developed several interests in dermatology, occupational medicine, gynecology and family planning backed by advanced training and postgraduate degrees in these specialties in the United Kingdom.

Dr Khan is an accredited clinical supervisor for postgraduate trainees in family medicine from Welsh and London Deanery. He was the clinical lead for medical education and diabetes while practicing in London. His main areas of interest are looking at management of Type 2 Diabetes, Health Care Management and Medical Education.

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

RESEARCH HIGHLIGHTS

The current research focus of members in the department addresses pertinent health concerns of the UAE population including the relation between vitamin D deficiency and eczema. Impact of the changes in the health care industry with use of electrical medical record system is explored and alternatives in decision making tools for health care providers aiming to improve quality of care are addressed. Innovative methods to teach and assess ethics and professionalism and the impact of the EMR on Family Medicine clerkship training are objectives of the ongoing portfolio research project. Studies initiated earlier on online health education are still in progress. We continue our agenda in translational research and support the development of faculty members in collaborative projects with local healthcare service providers.

The use of interactive electronic portfolios in Family Medicine clerkship
A four cycle reflective 'plan, act, revise,' action research study involving faculty and students on the use of portfolios in family medicine clerkship were conducted between 2009 and 2013. The conceptual framework which resulted from this study is now implemented in the family medicine clerkship. The value of e-portfolios to teach and assess rational prescribing and the impact of the EMR on Family Medicine clerkship teaching is the current focus.

Articles in Peer-reviewed Journals

Khan G, Hashim MJ. (2015). Burden of Virus-associated Liver Cancer in the Arab World, 1990-2010. Asian Pac J Cancer Prev,16(1):265–70.

Books, Chapters, Reviews & Editorials

Hashim MJ. (2015). Common allergic disorders. Family Medicine Principles and Practice. 7th ed. Springer.

Proceedings, Conferences, Invited Lectures, Websites & Others

Clor C. (2015). Developing a Geriatric Medicine workshop to improve medical students' attitudes towards and self-reported ability in Geriatrics in the UAE. Academic Oasis/IAABR. Thailand.

Hashim MJ, AlShehhi FA, Khozaimy K. (2015). Breast cancer in the Arab world. In: Emirates Oncology Conference. Abu Dhabi, UAE.

Hashim MJ, AlNuaimi, (2015).MS. Cervical cancer in the Arab region. In: UAE Cancer Congress, Dubai, UAE.

Hashim MJ. (2015). A highly efficient model for data entry in electronic health record systems. In: UAE University Research Conference, Al Ain, UAE.

Hashim MJ. (2015). Diabetes Score - a new behaviorally-oriented questionnaire for assessing and improving patient adherence. In: American Association of Clinical Endocrinologists Gulf Chapter 3rd Clinical Conference. Dubai, UAE.

Hashim MJ. (2015). Professional competency assessment using clinical simulation – the novel CERT format. In: Clinical Simulation Conference.

Muhammad Bin Rashid Academic Medical Center, Dubai, UAE.

Hashim MJ. (2015). Recent Advances in Medical Education. In: DMC Medical Education Symposium. Dubai, UAE.

Hashim MJ. (2015). Principles of Family Medicine - evolving concepts that shape the future of primary care. In: 2nd WONCA World Organization of Family Physicians - EMR. Dubai, UAE.

Prinsloo EA. (2015). Use of portfolio to teach rational prescribing.19th IAMSE meeting. San Diego, CA USA.

Prinsloo EA. (2015). What influences portfolio use in an Arab family Medicine residency training program. Network SAAHE. Gauteng Province, South Africa.

Prinsloo EA. (2015). Strategic alliances in a changing multicultural environment – the family Medicine clerkship experience in the United Arab Emirates University (UAEU) as case study. Network SAAHE. Gauteng Province, South Africa.

Prinsloo EA. (2015). Knowledge, attitude and practices of the general population in Al Ain Medical District (UAE) regarding tuberculosis. First Scientific Symposium on Challenges of Tuberculosis Control and Prevention–Management, Drug Resistance, Vaccination, Prophylaxis and Public Health Interventions, Al Ain, UAE.

2015

Family Medicine

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

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

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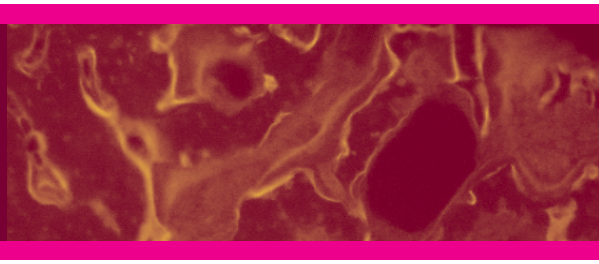

Research Profile

In 2015 faculty and staff continued to build on our track record of research and publications. We maintained our contributions to a range of peer-reviewed journals, with a focus on epidemiological and public health topics. Many of the research projects in 2015 involved colleagues from different departments in the medical school, universities and health agencies.

Our research has included epidemiological, qualitative, and other community-based studies relevant to the health concerns of the UAE. We have built partnerships and collaborations with international organizations and industry for the conduct of research, training, and staff and student exchange.

During the year we were pleased to welcome a Fulbright Scholar, Ms. Katherine Faye Miller from the University of Massachusetts Amherst, who undertook a qualitative study amongst UAEU students of perceptions of health education. The year saw the departure of Prof. Tar-Ching Aw as Director and Chair of the Institute of Public Health. He has been succeeded by Dr. Ian Blair. Other changes were the promotion of Prof. Fatma Al Maskari and Prof. Michal Grivna to the rank of Professor, and the departure of Dr. Faisal Yunus and Dr. Balazs Adam. Through the continued hard work of faculty and staff our post-graduate programs go from strength to strength. Prof. Fatma Maskari has continued as Director of the Zayed bin Sultan Al-Nahyan Centre for Health Sciences.

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

Prof Fatma Al-Maskari: Public health physician and epidemiologist with an interest in non-communicable chronic diseases epidemiology and prevention, lifestyle and health and

Department Chair:
Prof Tar-Ching Aw[1]
Dr. I Blair[2]
Professors:
Prof F Al Maskari[3]
Prof M Grivna[4]
Associate Professors:
Dr S Shah
Dr M Sheek-Hussein
Assistant Professors:
Dr B Adam[5]
Dr L Ahmed
Dr T Loney
Dr A Oulhaj
Dr F Yunus[6]
Instructor
Dr M El Sadig[7]
Medical Research Specialists:
Ms I Elbarazi
Mr F Aziz
Senior Administrator:
Ms A Kaljee

1 Chair from January to August 2015
2 Chair from August to December 2015
3 Promoted to Professor September 2015
4 Promoted to Professor September 2015
5 Departed on 31 August 2015
6 Departed on 30 June 2015
7 Promoted to the rank of Instructor on 10 December 2015

evidence-based medicine. She is also Director of the Zayed Center of Health Sciences.

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

Dr Luai Ahmed: Epidemiologist with special interests in the epidemiology and prevention of non-communicable chronic diseases. His current research interests focus on the epidemiology of diabetes mellitus, cancer, and mother and child health in the UAE and other countries in the region.

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

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

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 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 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.

Prof Michal Grivna: Public health consultant with a special interest in injury control, child, school, traffic and community safety and 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 is a founding member of the European Child Safety Alliance and the Centre for Childhood Injury Epidemiology and Prevention in the Czech Republic. Prof Grivna is a committee member and international certifier of the "International Safe Community Network" and board member of the "International Safe Schools Network". He is an Associate Editor of Frontiers in Public Health Education and Promotion Journal. He is a member of the Injury Prevention Initiative Committee at Health Authority Abu Dhabi.

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

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

holds a Chartered Statistician (CStat) award from the Royal statistical society (RSS).

Dr 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).

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Al Mekaini LA, Al Jabri ON, Narchi H, Kamal SM, Mabrook A, Al Kuwaiti MM, Sheek-Hussein M, Souid AK, Ahmed R. Alsuwaidi AR. (2014). The use of an interferon-gamma release assay to screen for pediatric latent tuberculosis infection in the eastern region of the Emirate of Abu Dhabi. Int J Infect Dis, 23:4–7. doi:10.1016/j.ijid.2013.12.020.

Al-Kaabi JM, Al Maskari F, Cragg P, Afandi B, Souid AK. (2015). Illiteracy and diabetic foot complications. Prim Care Diabetes, doi: 10.1016/j.pcd.2015.04.008.

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Benetou V, Orfanos P, Feskanich D, Michaëlsson K, Pettersson-Kymmer U, Ahmed LA, Peasey A, Wolk A, Brenner H, Bobak M, Wilsgaard T, Schöttker B, Saum KU, Bellavia A, Grodstein F, Klinaki E, Valanou E, Papatesta HM, Boffetta B, Trichopoulou A. (2015). Education, marital status and risk of hip fractures in older men and women: the CHANCES project. Osteoporos Int, 26(6):1733-46. PMID: 25820745.

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Dahl K, Ahmed LA, Joakimsen RM, Jørgensen L, Eggen AE, Eriksen EF, Bjørnerem Å. (2015). High-sensitivity C-Reactive Protein is an independent risk factor for non-vertebral fractures in women and men: the Tromsø Study. Bone, 72:65-70. PMID: 25460573.

Gellén E, Janka E, Tamás I, Ádám B, Horkay I, Emri G, Remenyik É. (2015). Pigmented naevi and sun protection behaviour among primary and secondary school students in an Eastern Hungarian city. Photodermatol Photoimmunol Photomed, doi: 10.1111/phpp.12219. [Epub ahead of print]

Grivna M, Eid HE, Abu-Zidan FM. (2015). Epidemiology of spinal injuries in the United Arab Emirates. World J Surg,10;20. doi:10.1186/s13017-015-0015-8.

Haider G, Hussain D, Waheed S, Shah R, Khan AA, Shah SM. (2015). Laparoscopic cholecystectomy: outcome of first 202 cases in a district hospital in Gilgit. J Ayub Med Coll Abbottabad, 27(3):688-690.

Holvik K, Ahmed LA, Forsmo S, Gjesdal CG, Grimnes G, Samuelsen SO, Schei B, Blomhoff R, Tell GS, Meyer HE. (2015). No increase in risk of hip fracture at high serum retinol concentrations in community-dwelling older Norwegians. A NOREPOS study. Am J Clin Nutr, 102(5):1289-96. PMID: 26377161.

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Loney T, Scullion LJ, Carter JM. (2015). Walk Strong, Live Long! Increasing ambulatory physical activity in male Emirati adolescents through a school-based walking campaign. ACCESS Health J, 3:61-66.

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Shah SM, Loney T, Al Dhaheri S, Vatanparast H, Elbarazi I, Agarwal M, Blair I, Ali R. (2015). Association between acculturation, obesity and cardiovascular risk factors among male South Asian migrants in the United Arab Emirates - A cross-sectional study. BMC Public Health, 15(1):1568. DOI:10.1186/s12889-015-1568-x.

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Elbarazi I, Grivna M. (2015). The application of the health belief model to cancer education - case study published as an online supplement for the third edition of Health Promotion: Planning and Strategies, by Ruth Cross, James Woodall, Jackie Green and Keith Tones (2015). www. https://live-sagecompanion.gotpantheon.com/sites/default/files/United%20Arab%20Emirates.pdf.

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Aziz F, Al Maskari F, Shah SM. (2015). Metabolic syndrome among healthy children aged 6 to 12 years in Al Ain, United Arab Emirates. Pediatrics;135 Suppl 1:S4.

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Proceedings, Conferences, Invited Lectures, Websites & Others

Ádám B, Elias A, Loney T, El Barazi I, Blair I, Aw TC. (2015). Regulation and practice of preventing chemical exposures during container handling in the United Arab Emirates. The 31st International Congress on Occupational Health, Seoul, South Korea, May, 31-June, 5.

Al Kaabi J, Al Maskari F, Afandi B, Shah SM, Oulhaj A, Yousef S, Heideman W, Al Ameri R, Al Ahbabi N, Papadimitropoulos M, Snoek FJ. (2015). Diabetes prevention among overweight or obese with a positive maternal or parental history of type 2 diabetes mellitus. IDF 2015, World Diabetes Congress, Vancouver, Canada, November, 30-December, 4.

Al Muhairi S, Naqbi MM, Khouri AA, Al Mehairi A, Al Maskari F, Nagelkerke N, Shah SM. (2015). Vitamin D Deficiency among healthy adolescents in Al Ain, United Arab Emirates. The 6th Annual SEHA Research Conference, Abu-Dhabi, United Arab Emirates, December, 16-17.

Al-Falasi R, Al-Nuaimi KS, Al-Awadhi FA, Osman OT, Aziz F. (2015). Screening of depression and anxiety and its predictors among medical students in the Emirate of Abu Dhabi. Abu Dhabi Ambulatory Healthcare International Congress, October, 8-10.

Al-Marzouqi HM, Al-Ali MR, Al-Saadi NN, Yousef S, Grivna M. (2015). Falls from windows in children: assessment of newspaper reporting of incidents and risk factors in the United Arab Emirates. UAEU Annual Research and Innovation Conference, Al Ain, November, 24-25 2015: 61.

Al-Maskari F, Shah SM, Agarwal MM, Alkaabi J, Al Dhaheri AS, Loney T, Aziz F, El Barazi I, Raghib A. (2015). Acculturation and prevalence of diabetes in male South Asian Migrants in the UAE. The World Diabetes Congress of the International Diabetes Federation (IDF), Vancouver, Canada, November, 30 – December, 4.

Aziz F, Shah SM, Al Maskari F, Al Kaabi J. (2015). Pre-diabetes among native Emirati youth: Role of obesity. The World Diabetes Congress of the International Diabetes Federation (IDF), Vancouver, Canada, November, 30 - December, 4.

Blair I. (2015). Epidemiology of Measles. UAE Immunization Week: Let's stop measles, Dubai, UAE, April, 26.

Blair I. (2015). Global and Local Tuberculosis Challenge. World Tuberculosis Day 2015 Public Health Symposium, College of Medicine and Health Sciences, UAEU, Al Ain UAE, March, 24.

Blair I. (2015). The findings from the GDB study and other local statistics. 2nd Public Health Conference under the Arab Health Congress 2015, Dubai International Convention and Exhibition Centre, Dubai, UAE, January, 26.

Elbarazi I, Yousef S, Elias A, Loney T. (2015). Burnout among Health care professionals in the Arab world: A Systematic Review. An oral presentation in The 7th International conference on Health issues in the Arab communities. Oman, Muscat, March.

Elbarazi I. (2015). Workshop on Evidence Based Practice. Ambulatory Health Care International Congress, Nursing Conference, October.

Elbarazi I. (2015). Cancer education, the patients' perspective. An oral presentation during the World Congress on Cancer and Prevention Methods, Dubai, UAE, August.

Elbarazi I. (2015). Screening update. An oral presentation delivered during the Ambulatory Health Care International Congress, Nursing Conference in Abu Dhabi, UAE, October, 10.

El-Sadig M. (2015). Building Partnerships to implement Community based Traffic Control Strategies in the UAE. 1st Ambulatory Health Services (AHS-SEHA) Congress 2015 For Community Medicine/ Occupational Health/ School Health, held in Abu Dhabi from October, 9-13.

Grivna M, Barss P, Al-Hanaee A, Al-Dhahab A, Al-Kaabi F, Al-Muhairi S. (2015). Baby walkers - a popular but dangerous consumer product: experience from the United Arab Emirates. Book of Abstracts, Population Health Congress 2015, Hobart, Australia, September, 6-9.

Grivna M, Eid H, Abu-Zidan F. (2015). Epidemiology of hand injuries. Book of Abstracts, World Congress on Surgery, Bangkok, Thailand, August, 23-27.

Grivna M, Eid H, Abu-Zidan F. (2015). Hand injuries in the United Arab Emirates. Book of Abstracts, Population Health Congress 2015, Hobart, Australia, September, 6-9.

Grivna M, Eid HO, Abu-Zidan FM. (2015). A prospective study on traffic-related injuries among the youth in the Al Ain city. UAEU Annual Research and Innovation Conference 2015, Al Ain, November, 24-25 2015: 5.

Grivna M, Eid HO, Abu-Zidan FM. (2015). Epidemiology and risk factors of hand injuries in the United Arab Emirates. UAEU Annual Research and Innovation Conference 2015, Al Ain, November, 24-25, 2015: 6.

Grivna M, Eid HO, Abu-Zidan FM. (2015). Traffic-related injuries among the youth in the UAE: A prospective study in Al Ain city. 22nd International Conference on Safe Communities 2015 – Involvement of Grasroots: The First Step to a Global Vision on Community Safety Promotion, Nan, Thailand, November, 22-25 2015: 158.

Grivna M. (2015). Child safety: can we prevent childhood injuries at home and in traffic? 2nd Annual Bright Start Conference on Women´s & Child Health, Abu Dhabi, November, 17.

Grivna M. (2015). Injury prevention: is it working? IFEM Trauma Update Symposium, June, 5-6.

Grivna M. (2015). School safety – prevention of injuries in and around the schools. Community Medicine Conference. Abu Dhabi Ambulatory Healthcare International Congress, October, 26.

Jernerén F, Oulhaj A, Elshorbagy AK, Smith SM, Refsum H, de Jager C, Smith AD. (2015). (Winner of the "Emerging Leaders in Nutrition Science" competition of the American Society of Nutrition, Boston). Experimental Biology 2015, Boston, MA, United States, March, 28 – April, 1.

Loney T, Everaars B, Hamid S, Shah SM, Daffon V, El Barazi I, Klatser P, Shields L, Ali R. (2015). Effect of migration on the psychosocial health of expatriate domestic workers in the United Arab Emirates. An oral presentation in The 7th International conference on Health issues in the Arab communities. Oman, Muscat, March.

Loney T, Everaars B, Hamid S, Shah SM, Daffon V, Elbarazi I, Klatser PR, Shields L. Ali R. (2015). Effect of migration on the psychosocial health of expatriate domestic workers in the United Arab Emirates. The 14th World Congress on Public Health, Kolkata, India, February,11–15.

Loney T, Scullion LJ, Carter JM. (2015). Walk Strong, Live Long! Increasing ambulatory physical activity in male Emirati adolescents through a school-based walking campaign. The 7th International Conference on Health Issues in Arab Communities, Muscat, Oman, March, 1-7.

Loney T, Shah SM, Ali R, Al-Dhaheri S, El Barazi I, Sheek-Hussein M, El-Sadig M, Al-Marzouqi L, Blair I, Aw T-C. (2015). Economic Migration and Health: High Rates of Cardiovascular Disease Risk Factors amongst Male Indian Migrant Workers in the United Arab Emirates. The 31st International Congress on Occupational Health, Seoul, South Korea, May, 31-June, 5.

Loney T. (2015). Assessment of Pesticide Exposure in Date Palm Agricultural Workers in the United Arab Emirates. Emirates National Oil Company Occupational Health Seminar, Dubai, UAE, November, 25.

Naz N, Jahan N, Shah M, Ahmed A, Shah SM. (2015). Diabetes prevalence and its associated risk factors in remote rural villages of Pakistan. IDF 2015, World Diabetes Congress, Vancouver, Canada, November, 30-December, 4.

Shah SM, Agarwal MM, Al Maskari F, Al Dhaheri A, Al Kaabi J. (2015). Prevalence and factors associated with pre-diabetes and diabetes in Emirati adolescents. Diabetes 2015; 64(Suppl1):A686.

Shah SM, Al Maskari F, Al Dhaheri AS, Al Kaabi J, Agarwal MM. (2015). Diabetes in Emirati adolescents in UAE: role of lifestyle? UAEU Annual Research and Innovation Conference 2015, Al Ain, UAE, November, 24-25.

Shah SM, Al Maskari F, Al Dhaheri AS, Al Kaabi J. (2015). Risk factors for Type 2 Diabetes in Native Emirati Adolescents. UAEU Annual Research and Innovation Conference 2015, Al Ain, UAE, November, 24-25.

Shah SM. (2015). Alarming trends of hypertension among children in Himalayan mountain villages. 7th Euro Pediatrics, Florence, Italy, May, 13-15.

Shah SM. (2015). Burden of type 2 diabetes: from mountain villages of Pakistan to plains of United Arab Emirates, 7th International Conference on Health Issues of Arab Communities, Muscat, Oman, March, 1-7.

Shah SM. (2015). Parents and Children Together for a Healthy Heart in UAE. International Conference, Bright Start, Abu Dhabi, UAE, November, 16-18.

Shah SM. (2015). Relation of self-esteem and depression with obesity among Emirati youth in UAE, Department of Population Health, Harvard School of Public Health, Boston, USA, June, 8.

Shah SM. (2015). Self-esteem and its association with obesity factors among Adolescents in Al Ain, UAE, 3rd International Child Mental & Behavioral Health Conference, Abu Dhabi, UAE, January, 23-24.

Sheek-Hussein M. (2015). Tuberculosis Control and Prevention. 1st Scientific Symposium on Challenges of Tuberculosis Control and Prevention – Management, Drug Resistance, Vaccination, Prophylaxis and Public Health Interventions, College of Medicine and Health Sciences, Al Ain, UAE, March, 24.

Smith AD, Refsum H, Jernerén F, Oulhaj A, Elshorbagy AK, Smith SM, de Jager C. (2015). 30th International Conference of Alzheimer's Disease International, Perth, Australia, April, 15-18.

RESEARCH GRANTS

Center-based Interdisciplinary Grant, UAE University

Drs MM Masud [PI], K Shuaib, F Al-Maskari, M El Sadig, B Adam. Building the foundation of an intelligent healthcare information system for the UAE. (2015-2017)

Prof T Pal [PI], Drs A Sonnevend, I Blair, Prof F Al-Maskari
Rep-PCR -based molecular tracking of inter-hospital and inter-regional spread of multi-drug resistant pathogens in the UAE. (2015-2017)

Dr FA Rihan [PI], Dr M Sheek-Hussein, Prof F Al-Maskari
Mathematical modeling of cancer immune interactions with treatments: immunotherapy, chemotherapy and bio-chemotherapy. (2015-2017)

Institution of Occupational Health and Safety, UK Grant

Dr T Loney [PI], Prof TC Aw, Drs I Blair, M Al Houqani, Ms I Elbarazi,

Dr B Adem, Ms H Al Dhaheri, Dr R Cooling.
Prospective observational study assessing pesticide exposure among date palm agricultural workers in the UAE. (2015)

SURE Grant, UAE University

Prof F Al-Maskari [PI], Dr Y El Obeid
Barriers to breast and cervical cancer screening among females in Al Ain: A Mixed- Method study. (2015)

Prof F Al-Maskari [PI], Ms I Elbarazi
Barriers to colorectal cancer screening among females in Al Ain: A Mixed- Method study. (2015)

UAEU Program for Advanced Research (UPAR) Grant

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

World Heart Federation Grant

Drs SM Shah [PI], A Roy, A Dzudie, C Anderson, D Kamath, N Kandula, RV Perez, R Quispe, S Mohd, S Islam.
Blood pressure home monitoring intervention trial and outcome research. (2015-2016).

2015

Intitute of Public Health

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

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

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Department of Internal Medicine

Research Profile

Professor and Chair:
Prof S Gariballa
Professors:
Prof J Braun
Prof S Denic
Prof E E Kazzam
Associate Professors:
Dr J Alkaabi *(Assistant Dean for Clinical Affairs)*
Dr S Al-Suwaidi
Dr O Bakoush
Dr I Hassan
Dr A Shehab
Assistant Professors:
Dr A Al Dhanhani
Dr A Al-Fazari
Dr M Al Houqani *(Assistant Dean for Education)*
Dr F Al-Shamsi
Dr S Al-Shamsi
Dr A A Cevik
Dr H Galadari
Medical Research Specialist I:
Dr C Sharma
Medical Research Specialist II:
Dr Brenda Bin Su
Mr J Yasin
Medical Research Assistant:
Ms R Shouk
Research Nurse:
Mr A Al Essa
Administrative Assistant:
Mr H Hassan
Administrator:
Ms S Al-Shamsi
Administrative Secretary:
MS N Al-Kaabi

This department has been highly active in the three fields of teaching, research and clinical services through 2015. Below are some of the activities of the department in 2015:

Clinical Service
Members of the department provide inpatient and out-of-hours on-call consultant general and specialist services for the two main teaching hospitals on a daily basis.

Clerkship & Residency Programs
We have set up and contributed to a number of clinical teaching facilities and training programs designed to enhance the learning experience in all areas of patient care and health care delivery.

Members of our department provide clinical lead/directorship of the international Membership of the Royal College of Physicians (MRCP), UK diploma examination center 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 Collaborations
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, and Sheikh Hamdan Bin Rashid Award for Medical Sciences research.

Professor Salah Gariballa, MD, FRCP. Consultant in acute medicine and clinical nutrition. Prof Gariballa's research interest lies in the role of nutrition in prevention and treatment of disease. Prof. Gariballa has conducted a number of externally-funded clinical trials and lectured & published widely on this subject, including two recent chapters and a textbook on the role of nutrition in the treatment & prevention of chronic diseases.

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

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

Dr Juma Musabah Alkaabi, BSc, MBChB, FRCP. Consultant Physician and Endocrinologist. His research focuses on diabetes, obesity, osteoporosis, dyslipidemia and thyroid disorders.

Dr Shirina Alsowaidi, MBBS, FRCP(C). Consultant Physician in Allergy and Immunology. Her research interest is in allergy disease epidemiology, asthma, allergic rhinitis, and anaphylaxis. She has collaborated with international academic institution on multiple studies focusing on chronic and allergic diseases. She has been chosen as the scientific ambassador of allergy in UAE, representing ECARF and GALEAN to study allergic disease in depth in UAE.

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 search for prognostic markers for disease outcome. His research group's recent significant finding is on the role of urine excretion of immunoglobulin M as a reliable predictor of cardiovascular complications in people with diabetes.

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

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

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

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

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

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

Dr Saif Jaber Al-Shamsi, MBBS, FRCP(C). Consultant in Acute General (Internal) Medicine. His research interest is in persistent hypertension and cardiovascular disease risk.

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

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

Dr Fayez Alshamsi, MBBS, ABIM, FRCP(C). Consultant in Internal Medicine and Critical Care Medicine. Fellowship in Neurocritical Care. Research interests in brain death, organ donation, sepsis.

Dr C Sharma (Medical Research Specialist I) and **Dr Brenda Bin Su** and **Mr J Yasin** (Medical Research Specialist II) have been enmeshed in the research activities of various faculty members both within and outside the department. Their workload increases steadily with time.

Mr A Al Essa (Research Nurse) is busily occupied with several research projects.

Ms R Safieldin and Ms R Shouk provide invaluable support to faculty research programs in terms of data collection, entry and analysis.

Ms S Al-Shamsi and Ms N Al-Kaabi continue to provide secretarial services and Mr Hisham Hassan lends vital administrative services for the department.

Leadership, Management and Administration
Department members serve on a number of local, national and international committees. Some examples are listed below:

- Al Jalila Foundation
- Arab Examination Board
- National Continuous Medical Education Committee
- National Diabetes Service Planning Group
- Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Research
- World Heart Failure Society

Figure 1. *CMHS students taking part in the Emirates Digestive Disease Group (EDDW) activities.*

2015 Highlights

The Establishment of Emirates Digestive Disease Group (EDDG).

EDDG is a group established by the Department of Internal Medicine, College of Medicine and Health Sciences, under the leadership of Dr Ali Al Melaih Al Fazari in February 2015. The primary aim of the EDDG is to support education and training of clinicians and other health professionals, encourage research and foster inter-disciplinary and multi-professional collaboration between doctors and other health professionals with an interest in gastrointestinal diseases and nutrition.

EDDG will also be looking to strengthen the link between CMHS and other health care facilities in the areas of education, training and research. The group has successfully organised a number of local, national and international meetings, including the last and most successful International Emirates Digestive Diseases Week (EDDW) which took place between 10th-12th December, 2015 in Abu Dhabi under the Patronage of Her Highness Sheikha Fatima Bint Mubarak, Mother of the Nation. In this meeting, faculty and participants from around the world came together with physicians, trainees, students and nurses from the UAE to share and learn the latest expertise in gastrointestinal disease and clinical nutrition for the benefits of UAE citizens' health (Fig. 1). The meeting was opened by her Her Excellency Dr. Maitha Al Shamsi, the UAE Minister of State when she announced Her Highness Sheikha Fatima Bint Mubarak International Award for Research Excellence in Digestive Diseases.

Articles in Peer-reviewed Journals

Lubbad L, Öberg CM, Dhanasekaran S, Nemmar A, Hammad F, Pathan JY, Rippe B, Bakoush O. (2015). Reduced glomerular size selectivity in late streptozotocin-induced diabetes in rats: application of a distributed two-pore model. Physiol Rep, May, 3(5).

Tofik R, Swärd P, Ekelund U, Struglics A, Torffvit O, Rippe B, Bakoush O. (2015). Plasma pro-inflammatory cytokines, IgM-uria and cardiovascular events in patients with chest pain: A comparative study. Scand J Clin Lab Invest, 75(8):638-45.

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Ali Hussein AE, Mahfouz H, Elazeem KA, Fakhry M, Elrazek EA, Foad M, Alborie M, Masseih RA, Amer MO, Hassaneen S, Bhagavathula AS, Elnour AA, Al Nuaimi SK, Shehab A. (2015).The value of U/S to determine priority for upper gastrointestinal endoscopy in emergency room. Medicine (Baltimore), 94(49):e2241.

Elbanna A, Eldin MT, Fathy M, Osman O, Abdelfattah M, Safwat A, Elkader MS, Bilasy SE, Salama KM Elnour AA, Shehab A, Baghdady S,

Amer M, Alboraie M, Ragb A, Hussein AE. (2015). Bariatric bypass surgery to resolve complicated childhood morbid obesity: case report study. Medicine (Baltimore), 94(49):e2221

Chaing CE, Ferrieres J, Gotcheva NN, Raal FJ, Shehab A, Sung J, Henriksson KM, Hermans MP. (2015). Suboptimal control of lipid levels: results from 29 countries participating in the centralized pan-regional surveys on the undertreatment of hypercholesterolemia (CEPHEUS). J Atheroscler Thromb, Dec 2. Article ID: 31179. doi: 10.5551/jat.311794.

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Curr Vasc Pharmcol, Oct 26. [Epub ahead of print]. PMID: 26496982.
Shehab A, Elnour AA, Sadik A, Abu Mandil M, AlShamsi A, Al Suwaidi A, Bhagavathula AS, Erkekoglu P, Hamad F, Al Nuaimi SK.(2015). Clinical utility of dabigatran in United Arab Emirates. A pharmacovigilancestudy. Saudi Med J, 36(11):1290-8.

Abd Elrazek AE, Shehab A, Elnour AA, Al Nuaimi SK, Baghdady S. (2015). Colon in the chest: an incidental dextrocardia: a case report study. Medicine (Baltimore), 94(6):e507.

Vallejo-Vaz AJ, Seshasai SRK, Cole D, Hovingh GK, Kastelein JJ, Mata P, Raal FJ, Santos RD, Soran H, Watts GF, Abifadel M, Aguilar-Salinas CA, Akram A, Alnouri F, Alonso R, Al-Rasadi K, Banach M, Bogsrud MP, Bourbon M, Bruckert E, Car J, Corral P, Descamps O, Dieplinger H, Durst R, Freiberger T,Gaspar IM, Genest J, Harada-Shiba M, Jiang L, Kayikcioglu M, Lam CS, Latkovskis G, Laufs U, Liberopoulos E, Nilsson L, Nordestgaard BG, O'Donoghue JM, Sahebkar A, Schunkert H, Shehab A, Stoll M, Su TC, Susekov A, Widén E, Catapano AL, Ray KK. (2015). Familial hypercholesterolaemia: a global call to arms. Atherosclerosis, 243(1):257-9.

El Hassan M, Elnour AA, Farah FH, Shehab A, Al Kalbani NM, Asim S, Shehab OA, Abdulla R.(2015). Clinical pharmacists' review of surgical antimicrobial prophylaxis in a tertiary hospital in Abu Dhabi. Int J Clin Pharm, 37(1):18-22.

Zubaid M, Rashed WA, Alsheikh-Ali AA, Al-Zakwani I, AlMahmeed W, Shehab A, Sulaiman K, Qudaimi AA, Asaad N, Amin H (2015). Gulf Survey of Atrial Fibrillation Events (Gulf SAFE) Investigators. Management and 1-year outcomes of patients with atrial fibrillation in the Middle East: Gulf survey of atrial fibrillation events. Angiology, 66(5):464-71.

Al Kaabi JM, Al Maskari F, Cragg P, Afandi B, Souid AK. (2015). Illiteracy and Diabetic Foot Complications. Primary Care Diabetes, 9(6): 465-72.

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Al Dhanhani A, Gignac MA, Beaton DE, Su J, Fortin PR. (2015). Job accommodations availability and utilization among people with lupus: an examination of workplace activity limitations and work context factors. Arthritis Care Res, 11: 1536.

Al Dhanhani A, Bakoush O, Agarwal M, Othman Y (2015). The incidence and prevalence of systemic lupus erythematous in a defined population in United Arab Emirates. Arthritis Rheum, 67 (supplement 10):1576.

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Books, Chapters, Reviews & Editorials

Cevik AA. (2015). Procedural Ultrasound in Emergency Medicine, in Emergency and Critical Ultrasound II, Language: Turkish, Ed: Betul Gulalp. Akademisyen Tip Kitabevi, 139-158.

Published Abstracts, Letters & Correspondence

Gariballa S. (2015). Determinants of length of hospital stay and non-elective readmission in hospitalized patients. Future Hosp J, vol. 2 no. Suppl 2 s15.

Al Sowaidi S. (2015). Assessment of quality of life among allergic patients in Al Ain, UAE.

Proceedings, Conferences, Invited Lectures, Websites & Others

Gariballa SE. (2015). Does drug treatment of pre and old diabetic patient's works? Time to rethink, The 20th Annual Conference on Diabetes Mellitus & Endocrine Disorders, Al Ain, April 2.

Gariballa SE. (2015). Eating more fruits and vegetables exert a positive health effects on obese Emirati patients by decreasing their waist circumference and attenuating associated oxidative damage and inflammation. Annual Research & Innovation Conference, UAEU, November 24-25.

Gariballa SE. (2015). Vitamin D: what does the gastroenterologist needs to know? Emirates Digestive Disease International meeting, Abu Dhabi, UAE. December 10 -12.

Gariballa SE. (2015). Nutritional assessment and management of critically-ill and elderly patients. Emirates Digestive Disease International meeting 10 -12 December, Abu Dhabi, UAE. December 10 -12.

Braun JS. (2015). Stroke–next frontiers. Invited Speaker at SEHA German Stroke Symposium, Al Ain Hospital, February 19.

Braun JS. (2015). Brain parenchymal upregulation of TNFα and IL-1β in experimental pneumococcal meningitis. Oral presentation. United Arab Emirates Research Conference, Al Ain, November 24.

Kazzam E. (2015).The Forgotten Neighbour" Right ventricular Remodelling in Health and Disease: Review of Literature and 30 years of our own Research Experience and Contribution to the Literature. Harvard Medical School, Department of Cardiovascular Medicine Boston, USA July 19.

Kazzam E. (2015). Law Gradient-Law Flow Aortic Stenosis with Preserved Ejection Fraction: The clinical dilemma guidelines and literature update. 31th Annual International Conference on Recent Advances in Echocardiography and Allied Techniques (MRI- CT Scan, Nuclear) San Diego, USA March 13.

Kaya FB, Canakci ME, Ozakin E, Acar N, Cevik AA. Vitamin K antagonistlerinin kullanimi ile iliskili kanamalar icin acil serviste protrombin kompleks konsantresi kullanimi: olgu serisi. TATKON2015, Girne, Cyprus, October, 26-29. (In Turkish Language,)

Kaya FB, Acar N, Ozakin E, Cevik AA. (2015). Acil serviste bilgisayarli tomogra istemleri: Acil tip hekimlerinin tek basina ya da radyoloji doktoru ile birlikte endi- kasyon belirlemesinin cihaz kullanim sikligina etkisinin karsilastirilmasi. TATKON2015, Girne, Cyprus, October 26-29. (In Turkish Language)

Kaya FB, Canakci ME, Acar N, Ozakin E, Cevik AA. (2015). Acil servis triyaj alaninda muayene icin bekletilen triyaj 3 grubu hastalarin analizi. TATKON2015, Girne, Cyprus, October 26-29. (In Turkish Language)

Cevik AA. Emergency Medicine Specialty development in Turkey and Current Challenges. ESEM2015, Abu Dhabi UAE, December 6-10.

Cevik AA. PoCUS in Undi erentiated Shock. ESEM2015, ESEM US Course, Abu Dhabi, UAE, December, 6-10.

Cevik AA. (2015). Trauma Literature Update 2015. ESEM2015, Abu Dhabi, UAE, December 6-10.

Cevik AA. (2015). Whole body CT scan: pros and cons, ACEM2015, Taipei, Taiwan, November 7-10.

Cevik AA. (2015). Sepsis and Levosimendan. TATKON2015, Girne, Cyprus, October 26-29.

Cevik AA. (2015). Traumatic cardiorespiratory arrest, IFEM Trauma Update Symposium 2015, Abu Dhabi, UAE, June, 5-6.

Cevik AA. (2015). Plenary: Towards an International Emergency Medicine Curriculum. IECM2015, Dubai, UAE, March, 24-26.

Cevik AA. (2015). Plenary: Emergency ultrasound: is it always a win-win situation for the patient and ER? SEMS2015, Singapore, January, 24-27.

Cevik AA. (2015). Technological enhancement to ultrasound practice in the ED. SEMS2015, Singapore, January, 24-27.

Cevik AA. (2015). Grand round lectures given in Tawam Hospital EM residency program.

- How to read pelvic xrays in a mul- tiple trauma patient, October 14
- Asthma update, September, 16.
- C-spine imaging, September, 9.
- Ruling out worst case scenario, September, 2.
- Chest compressions: hand vs mechanical devices, February 25.

Ulic D, Honarmand K, Belley-Cote E, Khalifa A, Gibson A, McClure G, D'Aragon F, Alshamsi F, Rochwerg B, Duan E, Karachi T, Whitlock R, Cook D. (2015). Scholars and Collaborators on the Frontline: Resident-led Research in a Prospective, Observational Study in Critically Ill Patients. E-Poster presented at Critical Care Canada Forum 2015. Winner of Best Education Study Award.

Alshamsi F. (2015). Endocrine Rapid Review Course talk on Diabetic Emergencies. November 20.

Galadari H. (2015). American Academy of Dermatology Meeting, CA, USA.
- Up and Coming Fillers: Experience from Across the Atlantic, San Francisco.
- Galadari H. (2015). World Congress of Dermatology, Vancouver, Canada.
- Complications of Soft Tissue Augmentation
- Botulinum Toxin: Myths and Misconceptions
- Treatment of Tear Troughs

Galadari H. (2015). Summer American Academy of Dermatology Meeting, New York, NY, USA.
- Fillers: pearls for patient selection and optimal outcomes
- Up and coming fillers: experience from across the Atlantic
- Workshop: Hands-on dermal fillers
- Live Demo: Neurotoxin and soft tissue augmentation
- Coming to America: new techniques, products and tips from experts in the new old world

Galadari H. (2015). 5th EuroAsian Dermatology Congress, Riga Latvia.
- Latest Advances in Fillers
- Galadari H. (2015). International Congress of Aesthetic Dermatology, Bangkok, Thailand.
- Important basics to know: needle vs cannula
- Prevention and management of complications
- Concepts of beauty among different races and cultures
- Myths and misconception in toxin treatment

Galadari H. (2015). Aesthetic Medicine European Congress, Paris, France.
- Holistic approach in full face enhancement for younger patients
- From the eyes to the lips: special areas revisited

Galadari H. (2015). Systems and methods for using a microcannula introducer for skin & soft tissue augmentation. Patent No. WO 2015114364 A

Alsowaidi S. (2015). Treating challenging cases of urticaria work shop. Specialty Dermatology Academy Meeting, Dubai, UAE, November, 27.

Alsowaidi S. (2015). Diagnosis chronic urticarial in the clinic. Specialty Dermatology Academy Meeting, Dubai, UAE, November, 26–27.

Alsowaidi S. (2015). Assessment of quality of life among allergic patients in Al Ain, United Arab Emirates. Poster presentation in EAACI, Barcelona, Spain, June, 6-10.

Alsowaidi S. (2015). Allergy and it is impact on daily activity. Al Jaheli Institute of Science and Technology, Al Ain, UAE, April.

Alsowaidi S. (2015). The impact of Food allergy on Autism. Special Education Center, Al Ain, UAE, March.

RESEARCH GRANTS:

CMHS Research Grants

Dr O Bakoush [PI]
The function of the glomerular filtration barrier in angiotensin-induced hypertension and STZ-induced diabetes: experimental studies. (2015).

Dr M Al-Houqani [PI]
Carbon Monoxide Levels among Midwakh smokers. (2015).

Prof SE Gariballa [PI]
Effects of vitamin D supplementation with or without calcium on health and well-being of vitamin D deficient UAE citizens: A randomised double-blind placebo controlled trial. (2015).

Center-based Grant

Dr S Alsowaidi, [PI]
Allergic disease and quality of life. (2015).

2015

Internal Medicine

Back row, left to right:
Dr I Hassan, Mr J Yasin,
Dr H Galadari, Dr A Al-Fazari,
Dr O Bakoush, Dr A Al-Dhanhani,
Dr S Al-Karam, Mr H Hassan.

Front row, left to right:
Mr A Al-Essa, Ms R Shouk,
Prof S Denic, Prof S Gariballa,
Dr Bin Su, Dr C Sharma,
Ms H Kader, Mr M Rafiuddin

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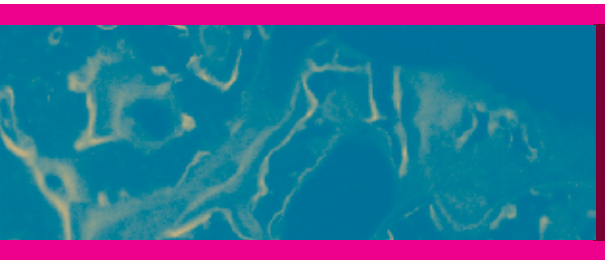

Department of Medical Education

Research Profile

Professor & Chair:
Prof M Elzubeir
Professors:
Prof S Elango[1]
Associate Professors:
Dr S Shaban
Senior Lectures:
Dr R Benner
Mr M Campbell
Ms G Kershaw
Administrative Assistants:
Ms M Al Neyadi
Ms H Kalbani
Clerk II:
Mr T Usman

IT GROUP
Senior IT Support Specialists:
Mr Alsajir M Basheer
Ms L Mohammed

MEDIA CENTER
Medical Photographer: **Mr A Prasad**
Multimedia Designer: **Ms I Lizarriturri**
Clerk II: **Ms M Al Housani**
Audio-visual Systems Administrator:
Mr Z Mohammed

SKILLS AND TEACHING LABORAORY
Clerk II: **Mr B Abubakkar**
Administrator, Clinical Skills Laboratory:
Miss A Al Baeek
Clerk II: **Mr S Pandian**
Medical Research Specialist II:
Mr A Wahab

1-Departed on 30 June 2015

Dr. Mohammed Al Houqani's research interests include: curriculum development, curriculum mapping, and outcomes assessment.

Prof. Margaret Elzubeir's research interests are in medical student selection, student well-being, academic performance, small group learning, curriculum and faculty development.

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

SUMMARY OF CURRENT RESEARCH PROJECTS

- **Sami Shaban**
  Effective use of a medical school curriculum and assessment management systems in integrated medical education.

- **Sami Shaban & Margaret Elzubeir**
  Effective use of an electronic assessment system, including question management and data banks, as well as assessment delivery and analysis.

- **Halah Ibrahim, Sami Shaban & Margaret Elzubeir**
  Factors determining medical students' residency choice.

- **Al Mahmoud, Margaret Elzubeir, & Frank Branicki (Surgery)**
  Developing high quality single best answer multiple choice questions (MCQs): description of an enhancement-focused strategy.

Articles in Peer-reviewed Journals

AlMahmoud T, Elzubeir M.A. S.Shaban, F.Branicki. An Enhanced-focused Framework for developing high quality single best answer multiple choice questions. Educ Health (Abingdon). 2015 Sep-Dec;28(3):194-200. doi: 10.4103/1357-6283.178604.

Ibrahim H, Chandra S, Shaban S. (2015). Can our residents carry the weight of the obesity crisis?.A mixed methods study. Obes Res Clinc Pract, 9(3).

Schiess N, Chandra S, Shaban S, Perez M, Nair SC. (2015). Career Choice and Primary Care in the United Arab Emirates. J Grad Med Educ; 7(4).

Proceedings, Conferences, Invited Lectures, Websites & Others

AlMahmoud T, Elzubeir MA, Branicki FJ. How we develop high quality single best answer multiple choice questions. Dubai Medical Education Symposium (DMES). Dubai, May 2015.

AlMahmoud T, Elzubeir MA, Branicki FJ. How we develop high quality single best answer multiple choice questions. UAEU Annual Research and Innovation Conference. November, 2015. UAE. Poster 21. http://conferences.uaeu.ac.ae/aric/en

AlMahmoud T, MJ Hashim, Elzubeir MA, Branicki FJ. Attitudes, Goals, Learning and Assessment Methods for Ethics Education: Senior Medical Students' perspectives in a homogeneous society with a multicultural medical environment. Proceedings: Dubai Medical Education Symposium (DMES). Dubai, May 2015. (Best Poster Award and Second Best Oral and Poster Presentation award).

AlMahmoud T, MJ Hashim, Elzubeir MA, Branicki FJ. Informed Consent Education in a Multicultural Medical Environment: Clinical Clerks' perspectives. Dubai Medical Education Symposium (DMES). Dubai, 30 May 2015.

AlMahmoud T, MJ Hashim, Elzubeir MA, Branicki FJ. Informed Consent Education in a Multicultural Medical Environment: Clinical Clerks' perspectives. UAEU Annual Research and Innovation Conference 2015. November, 2015. UAEU, UAE. Poster 22. http://conferences.uaeu.ac.ae/aric/en/.

Elzubeir M. (2015). Medical Student Self-Assessment Accuracy. International Conference on Medical Education, Istanbul, Turkey, October 15-18th.

Shaban S, Elzubeir M, Al Houqani M. (2015). Online Assessment Standard Setting at CMHS. The 13th International Conference on Education and Information Systems, Technologies and Applications: EISTA , Orlando FL, USA, Jul.

Shaban S. (2015). A Curriculum Management System for Integrated Medical Education. The 9th Annual DMC Medical Education Symposium, Dubai, UAE, May.

2015

Medical Education

Standing from left to right:
A Basheer, A Prasad, M Tunzi, M Cambell, S Shaban, Z Mohammed, M Al Houqani, Pandian, B Abubakkar, T Mohammed, J Ali.

Seated, from left to right:
R Benner, A Smith, H Mansour, M Elzubeir, G Kershaw, I Lizarriturri, A Fathy.

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Department of Medical Microbiology and Immunology

Research Profile

Professor & Chair:
Prof B al-Ramadi
Professor:
Prof T Pal
Prof T Rizvi
Associate Professors:
Dr E Elkord
Dr G Khan
Dr A Sonnevend
Assistant Professor:
Dr A Al Qahtani
Dr Z Al Rasbi
Dr M Al Shamsi
Medical Research Specialist:
Ms A Al-Ghazawi
Mr M Al-Haj
Mr Y Mohamed
Ms P Philip
Mr A Shahin
Medical Research Technician:
Ms G Bashir
Administrator:
Ms H AlBlooshi
Office Assistant:
Mr M Hashiq

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

Prof Basel al-Ramadi: Our primary research interest is focused on regulatory mechanisms in anti-tumor immunity and cancer chemoresistance. Current projects include the influence of obesity and metabolic pathways on anti-tumor immunity, targeting myeloid-derived suppressor cells as a therapeutic modality in cancer treatment, and harnessing anti-cancer and immunpotentiating properties of bee-derived natural products (Fig. 1; *bottom, opposite page*). Other collaborative projects are focused on control of immune responses and immunopathological consequences by neuro-immune circuitry. Work in the lab is carried out in collaboration with colleagues within CMHS and other universities (including NYU-Abu Dhabi, University of Colorado and University of Vermont, USA).

Prof Tibor Pal: My main research interest lies in 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 to the UAE. Also, the relationship between drug resistance and the presence of certain virulence genes and cell wall elements are being studied. We collaborate with colleagues in Paris, Edinburgh, Vienna, Rome, Kuwait, Riyadh, and Muscat.

Prof Tahir Rizvi: Recent research interests of my laboratory are directed toward studying molecular steps involved in the replication of retroviruses such as human, simian, and feline immuno-

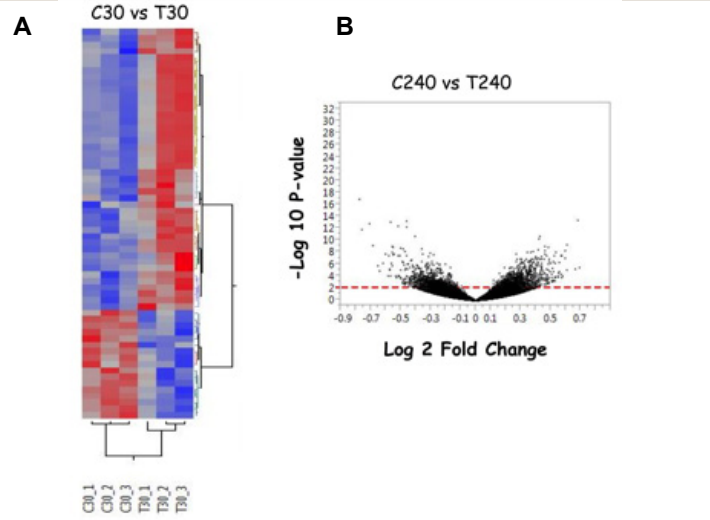

Figure 1: *RNA seq analysis of differentially-expressed genes in human breast cancer cells following treatment with Manuka honey. (A) 2-2 way hierarchical clustering of differential gene expression in control (C) or manuka honey-treated (T) triplicate cell samples following 30 minutes of exposure to 1% manuka honey solution. (B) Volcano plot of significant changes in gene expression between control and manuka honey-treated cancer cells after 4 hours of exposure. The analysis revealed a total of 2066 genes that were either upregulated or downregulated following treatment at this time point.*

deficiency viruses (HIV, SIV, & FIV), Mason-Pfizer monkey virus (MPMV), and mouse mammary tumor virus (MMTV). The overall goal of our research efforts is to enhance our understanding of the regulation of retroviral gene expression, cancer induction, design and development of retroviral/lentiviral vectors and packaging cells lines for safe and efficient human gene therapy as well as DNA vaccine development.

Specifically our ongoing research efforts are directed towards delineating the genomic RNA (gRNA) export, dimerization, and packaging mechanisms and their interplay during retroviral replication. Using HIV, FIV, SIV, MPMV, and MMTV as model systems, our current ongoing studies are focused on gaining enhanced understanding of how structural motifs (regardless of the primary sequence) facilitate retroviral gRNA export, dimerization as well as packaging and/or cross/co-packaging into the nascent virus particles. These studies are being accomplished by employing a combination of in vivo (genetic complementation assays), in vitro (biochemical probing/mapping-SHAPE), and structural prediction/phylogenetic approaches to test our proposed hypotheses. Over the years, Prof. Rizvi's laboratory has been able to successfully compete for both intramural and extramural grant support for his work on retroviruses. Studies on retroviral RNA packaging and dimerization have been published in journals of international repute.

Most of the existing techniques for viral screening and quantification suffer from limitations due to the need for extensive sample preparation which are fairly costly, requiring a great deal of time. Therefore, recently in collaboration with Dr. Mahmoud Al Ahmad (Department of Electrical Engineering, UAEU), our laboratory has started developing novel label-free virus screening and quantification techniques based on electrical parameters. Based on our ongoing studies, we anticipate that our electrical approach is a starting point towards establishing the foundation for label-free electrical-based identification and quantification of an unlimited number of viruses and other nano-sized particles.

Dr Eyad Elkord: My main research interests are in the area of Cancer Immunology and Immunotherapy. We have special interest in the role and function of immunosuppressive cells in cancer. Regulatory T cells (Tregs) are key players of immune regulation/dysregulation both in physiological and pathophysiological settings. Despite significant advances in understanding Treg function, there is still a pressing need to define reliable and specific markers that can distinguish different Treg subpopulations. We have shown for the first time that markers of activated Tregs [latency associated peptide (LAP) and glycoprotein A repetitions predominantly (GARP, or LRRC32)] are expressed on CD4+FoxP3- T cells expressing Helios (FoxP3-Helios+) in the steady state (Fig. 2). Following TCR activation, GARP/LAP are up-regulated on CD4+Helios+ T cells regardless of FoxP3 expression (FoxP3+/-Helios+) (Fig. 3). We also showed that CD4+GARP+/-LAP+ Tregs make

IL-10 immunosuppressive cytokine, but not IFN-γ effector cytokine. Further characterization of FoxP3/Helios subpopulations showed that FoxP3+Helios+ Tregs proliferate in vitro significantly less than FoxP3+Helios- Tregs upon TCR stimulation.

Unlike FoxP3+Helios- Tregs, FoxP3+Helios+ Tregs secrete IL-10 but not IFN-γ or IL-2, confirming they are bona fide Tregs with immunosuppressive characteristics. Taken together, Helios, and not FoxP3, is the marker of activated Tregs expressing GARP/LAP, and FoxP3+Helios+. Tregs have more suppressive characteristics compared with FoxP3+Helios- Tregs. Our work implies that therapeutic modalities for treating autoimmune and inflammatory diseases, allergies and graft rejection should be designed to induce and/or expand FoxP3+Helios+ Tregs, while therapies against cancers or infectious diseases should avoid such expansion/induction.

Dr Gulfaraz Khan: The main theme of research in our laboratory is to understand the biology of Epstein-Barr virus (EBV) and its role in the pathogenesis of EBV associated diseases, in particular, malignancies and autoimmune disorders. We have three main projects ongoing in our lab:

1. Establishing a rabbit model for EBV infection
2. Investigating the role of EBV latent genes, in particular small RNAs, in cell transformation and oncogenesis
3. Investigating the role of EBV in the pathogenesis of multiple sclerosis

We also have a very active collaboration with the University of Washington on the Global Burden of Disease project. This project has led to several high profile publications in the journal Lancet and JAMA Oncology.

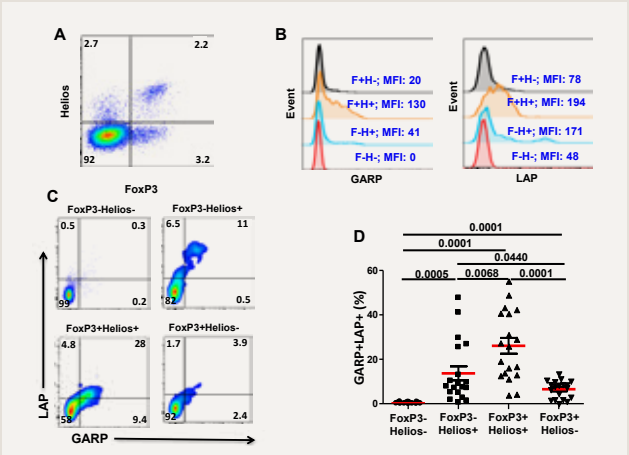

Figure 2: *Expression of GARP and LAP on different FoxP3+/–Helios+/– T-cell subsets in the activated setting. Peripheral blood mononuclear cells (PBMCs) from healthy donors were activated by plate-bound anti-CD3/28 followed by surface staining for CD3, CD4, GARP and LAP and intracellular staining for FoxP3 and Helios. A. Representative flow cytometric plots showing FoxP3–Helios–, FoxP3–Helios+, FoxP3+Helios+ and FoxP3+Helios– T-cell subsets and the expression of GARP/LAP within these subsets in activated PBMCs. B. Representative overlaid histogram plots show the MFIs of GARP and LAP within the different FoxP3/Helios subsets. C. Scatter plots show the mean percentage ± SEM of GARP+LAP+ within FoxP3–Helios–, FoxP3–Helios+, FoxP3+Helios+ and FoxP3+Helios– T-cell subsets in activated PBMCs isolated from 19 healthy donors.*

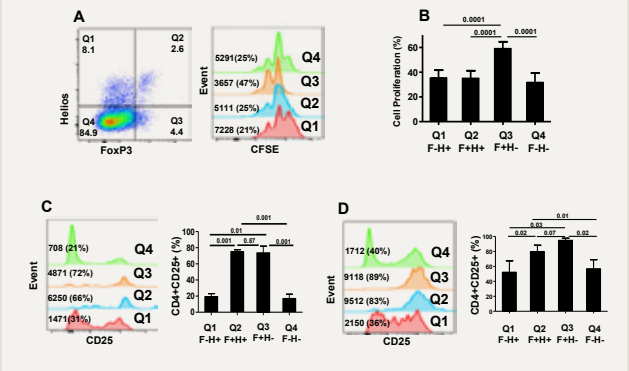

Figure 3: *CFSE-based proliferation assays and CD25 expression within different FoxP3+/–Helios+/– T-cell subsets. A. Representative flow cytometric plots showing FoxP3–Helios–, FoxP3–Helios+, FoxP3+Helios+ and FoxP3+Helios– T-cell subsets (first plot) and their proliferation (second plot) as measured by CFSE loss. B. Mean percentage ± SEM of cell proliferation of these different subsets in PBMCs isolated from 9 healthy donors. Flow cytometric plots and mean percentage ± SEM of CD25 expression in non-activated (C) and activated (D) FoxP3+/–Helios+/– T-cell subsets in PBMCs isolated from 5 healthy donors.*

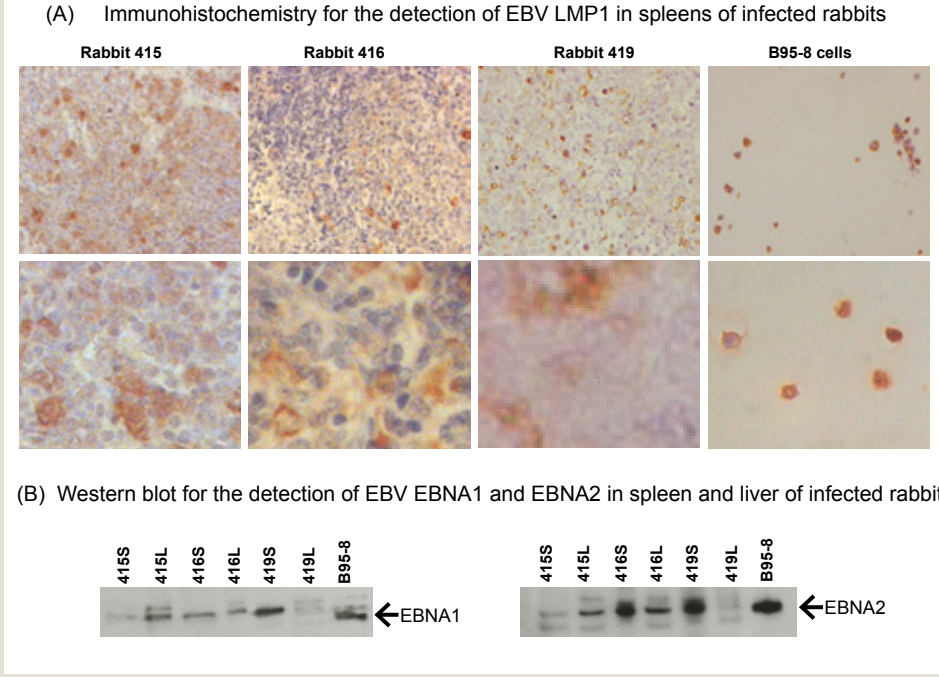

Figure 4. *Detection of EBV expression in the spleens and liver of EBV infected rabbits. All EBER-positive spleens were tested for the expression of EBV LMP-1 by immunohistochemistry. A) Characteristic membrane and cytoplasmic staining was evident in the spleen of all 3 rabbits (Fig. 4A bottom panel). Formalin-fixed and paraffin-embedded EBV-positive cell line B95-8 was used as a positive control. Expression of EBNA-1 and EBNA-2 was examined by western blotting (Fig. 4B). Specific bands were noted in both the liver (L) and spleen (S) of infected animals. Protein extracts from B95-8 cells was used as a positive control. (From: Khan G et al. 2015, Virol J; 12:28).*

We recently published some of our data on EBV infection of rabbits. We have shown that healthy rabbit can indeed be infected with EBV. Moreover, immunosuppression of infected animals results in widespread disseminated EBV infection, analogous to what has been observed in immunocompromised patients (see Fig. 4). Since no suitable animal model for EBV exists, we believe our rabbit model provides a significant step forward to addressing some of the fundamental questions on EBV biology and its role in disease development.

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

Dr Mariam Al Shamsi: Dr. Al Shamsi continues with her research on the interplay between the proinflammatory cytokines IL-17 and IFN-γ in promoting or inhibiting autoimmunity (Type 1 diabetes using MLD-STZ induced type 1 diabetes model) using knockout mice for IL-17 or IFN-γ. We found that both KO and WT mice developed delayed and sustained hyperglycemia, profuse mononuclear infiltration and reduced insulin content of islets accompanied by expression of several proinflammatory cytokines in pancreatic lymph nodes after 5 doses of STZ although IL-17 KO mice showed evidence of disease 7 – 10 days earlier. We also demonstrate here that unlike in the WT, while no enhancement of diabetes occurred in both IFN-γ and IL-17 KO mice after subdiabetogenic doses of STZ followed by IL-23, the absence of IL-17 did not abolish, but only reduced the severity of disease after Pam3CSK4 enhancement of disease. We conclude that the absence of IFN-γ prevented enhancement of diabetes by IL-23 and TLR2 agonist, but absence of IL-17 did not prevent enhancement of disease by Pam3CSK4. Interestingly, diabetogenesis was not abolished by the lack of either cytokines. Thus both IFN-γ and IL-17 appear to play a role in this model of diabetes, while the former might be necessary for the initiation, the latter might be only necessary for disease severity.

Articles in Peer-reviewed Journals

Ahmed W, Philip PS, Attoub S, Khan G. (2015). Exosomes from Epstein-Barr virus infected, but not uninfected cells, contain Fas-ligand and induce apoptosis of recipient cells via the extrinsic pathway. J Gen Virol, 96:3646-3659.

Al Ahmad M, Mustafa F, Ali LM, Karakkat JV, Rizvi TA. (2015). Label-free capacitance-based identification of viruses. Sci, Rep., 5, 9809; DOI: 10.1038/srep09809.

Al Shamsi M, Shahin A, Ibrahim MG, Tareq S, Souid AK, Mensah-Brown EP. (2015). Bioenergetics of the spinal cord in experimental autoimmune encephalitis of rats. BMC Neurosci. 16:37.

Chaudhary B, Elkord E. (2015). Downregulation of immunosuppressive environment in patients with chronic HBV hepatitis on maintained remission. Front Immunol. 6:52. doi: 10.3389/fimmu 00052.

Chaudhary B, Elkord E. (2015). Novel expression of Neuropilin 1 on human tumor-infiltrating lymphocytes in colorectal cancer liver metastases. Expert Opin Ther Targets. 19(2):147-61.

Elkord E, Abd Al Samid M, Chaudhary B. (2015). Helios, and not FoxP3, is the marker of activated Tregs expressing GARP and LAP. Oncotarget. 6(24):20026-20036.

Elkord E, Burt DJ, Sundstedt A, Nordle O, Hedlund G, Hawkins RE.(2015). Immunological response and overall survival in a subset of advanced renal cell carcinoma patients from a randomized phase 2/3 study of naptumomab estafenatox plus IFN-α versus IFN-α. Oncotarget. 6(6):4428-39.

Fitzmaurice C, Dicker D, Pain A, Hamavid H, Khan G et al. (2015). The Global Burden of Cancer 2013. JAMA Oncol,1(4):505-27.

Hassani A, Khan G. (2015). A simple procedure for the extraction of DNA from long-term formalin-preserved brain tissues for the detection of EBV by PCR. Exp Mol Pathol,99:558-563.

Khan G, Ahmed W, Philip PS, Ali MH, Adem A. (2015). Healthy rabbits are susceptible to Epstein-Barr virus infection and infected cells proliferate in immunosuppressed animals. Virol J,12:28.

Khan G, Hashim MJ. (2015). Burden of viral-associated liver cancer in the Arab world, 1990-2010. Asian Pac J Cancer Prev,16(1):265-70.

Murray CJ, Barber RM, Foreman KJ, Ozgoren A, Khan G et al. (2015). Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: quantifying the epidemiological transition. Lancet,386:2145-91.

Sonnevend A, Ghazawi A, Darwish D, AlDeesi Z, Kadhum A, Pál T. (2015). Characterization of KPC-type carbapenemase-producing Klebsiella pneumoniae strains isolated in the Arabian Peninsula J Antimicrob Chemother,70(5):1592-3.

Sonnevend A, Ghazawi A, Hashmey R, Jamal W, Rotimi WO, Shibl A, Al-Jardani A, Al-Abri SS, Tariq WUZ, Weber S, Pál T. (2015). Characterization of carbapenem-resistant Enterobacteriaceae with high rate of autochthonous transmission in the Arabian Peninsula PLOS One, 10(6): e0131372. doi:10.1371/journal.pone.0131372.

Vos T, Barber RM, Bell B, Khan G et al. (2015). Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic conditions and injuries for 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet,386:743-800.

Books, Chapters, Reviews and Editorials

Block K, Gyllenhaal C, Amedei A, Elkord E et al. (2015). Designing a broad-spectrum integrative approach for cancer prevention and therapy. Semin Cancer Biol.;35S:S276-S304.

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Sonnevend A. (2015). Man with bacteriuria and indwelling catheter. In: Nagy Erzsébet, Sonnevend Ágnes, Reuter Gábor (ed.). Case Presentations in Clinical Microbiology, Budapest: Medicina Könyvkiadó, pp 25-28, ISBN 978 963 226 549 0.

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Fernandez-Cabezudo MJ, George J, Bashir G, al-Ramadi BK. (2015). Cholinergic modulation of inflammatory diseases: role in the amelioration of type-1 diabetes. The 102nd Annual Meeting of the American Association of Immunologists, New Orleans, LA, USA. The Immunol, 194 (1 Supplement), 57.5.

Proceedings, Conferences, Invited Lectures, Websites, & Others

Ahmed W, Philip PS, Attoub S, Khan G. (2015). Exosomes isolated from Epstein-Barr virus infected cells induce apoptosis in the recipient cells via the extrinsic pathway. UAEU Annual Research & Innovation Conference (Oral presentation).

Al-Dhaheri MM, George JA, Mohammed YA, Bashir G, Arafat K, Ramadi KB, Attoub S, Fernandez-Cabezudo MJ, al-Ramadi BK. (2015). Manuka honey inhibits cellular growth, metastasis and angiogenic capacity of human and murine breast cancer. Annual Research and Innovation Conference, UAEU, Al-Ain, UAE.

Al Hamad A, Pal T, Leskafi H, Abbas H, Hejles H, Alsubikhy F, Darwish D, Ghazawi A, Sonnevend A. (2015). Comparison of environmental and clinical isolates of XDR-Acinetobacter baumannii in an endemic situation - 25th European Congress of Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark.

Al-Marzooqi RH, Al-Dhuhoorii MM, Darwish D, Pal T, Sonnevend A. (2015). Virulence of carbapenem resistant Escherichia coli isolated in the Arabian Peninsula - 25th European Congress of Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark.

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Al-Ramadi BK. (2015). Novel treatment modalities for cancer. Invited Speaker, Annual Research Symposium, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan.

Al-Ramadi BK. (2015). Role of myeloid cells in cancer immunotherapy. Invited Speaker, Sharjah Institute for Medical Research, University of Sharjah, UAE.

Al-Ramadi BK. (2015). Macrophage polarization in control of tumor growth: implications for cancer immunotherapy. Invited Speaker, Department of Physiology and Biochemistry, Faculty of Medicine, University of Jordan, Amman, Jordan.

Al-Ramadi BK, Kaimala S, Mohammed YA, Al-Sbiei A, Fernandez-Cabezudo MJ. (2015). Distinct alterations in myeloid cell subpopulations underlie enhancement of tumor growth in high fat diet-induced obesity. Cell Symposia: Cancer, inflammation and immunity. Sitges, Spain.

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George JA, Bashir G, Qureshi M, Mohammed YA, al-Ramadi BK, Fernandez-Cabezudo MJ. (2015). Amelioration of Type 1 diabetes by the cholinergic anti-inflammatory pathway in the MLD-STZ model. Annual Research and Innovation Conference, UAEU, Al-Ain, UAE.

Hassani A, Khan G. (2015). Optimization of DNA extraction from archival formalin-fixed human brain tissues for the detection of Epstein-Barr virus by PCR. UAEU Annual Research & Innovation Conference (Oral presentation).

Kaimala S, Mohammed YA, Bashir G, Al-Sbiei A, Fernandez-Cabezudo MJ, al-Ramadi BK. (2015). Mechanistic insights into bacterial therapy of tumors: Implications for cancer immunotherapy. Annual Research and Innovation Conference, UAEU, Al-Ain, UAE.

Kaimala S, Mohammed YA, Al-Sbiei MA, Bashir G, Fernandez-Cabezudo MJ, and al-Ramadi BK. (2015). Obesity increases cancer growth by enhancing the activity of tumor-promoting myeloid cells. Annual Research and Innovation Conference, UAEU, Al-Ain, UAE.

Kalloush RM, Ali LM, Mustafa F, Rizvi TA. (2015). Optimal packaging of Mason-Pfizer monkey virus (MPMV) genomic RNA depends upon conserved long range interactions (LRIs) between U5 and Gag sequences. Presented at the annual retrovirus meeting of the Cold Spring Harbor Laboratory, New York, USA.

Khan G, Ahmed W, Philip PS, Attoub S. (2015). Exosomes from EBV-immortalized cells induced apoptosis via the extrinsic pathway. Tumour Virus Meeting 2015, Trieste, Italy.

Khan G, Ahmed W, Philip PS, Tariq S. (2015). Nano-vesicles secreted by Epstein-Barr virus immortalized cells carry viral small RNAs (EBERs). UAEU Annual Research & Innovation Conference (Oral presentation).

Khan G. (2015). One bite is all it takes. World Rabies Day 2015. The Ministry of Environment and Water, Abu Dhabi, UAE.

Khan G. (2015). The ins and outs of Epstein-Barr virus small RNAs. The Immunoregulation & Infection Research Priority Group Seminar, UAE University, College of Medicine & Health Sciences, Al-Ain, UAE.

Mustafa F, Akhlaq S, Kalloush RM, Phillip PS, Aktar SJ , Ali LM, Dudley JP, Rizvi TA. (2015). Dual role of sequences at the 5′ end of the MMTV genome in RNA export and packaging. Presented at the annual retrovirus meeting of the Cold Spring Harbor Laboratory, New York, USA.

Ramadi KB, Mohammed YA, Al-Sbiei A, Al Marzooqi S, Bashir G, Al Dhanhani A, Sarawathiamma D, Qadri S, Yasin J, Nemmar A, Fernandez-Cabezudo MJ, Haik Y, al-Ramadi BK. (2015). Acute systemic exposure to metallic nanoparticles induces hepatotoxicity and NLRP3 inflammasome-mediated inflammation. Annual Research and Innovation Conference, UAEU, Al-Ain, UAE.

Sonnevend A. (2015). Antibiotic resistance in the hospital – the ticking bomb: where we stand? The International Collaborative Conference in Clinical Microbiology & Infectious Diseases, Bahrain.

Sonnevend A. (2015). Emergence of pan-resistant strains in the UAE The 11th Middle East Healthcare-Associated Infections Conference, Dubai, UAE.

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Sonnevend A, Ghazawi A, Darwish D, AlDeesi Z, Kadhum AF, Pál T. (2015). Characterisation of the first Klebsiella pneumoniae isolates from the Arabian Peninsula producing KPC-type carbapenemase - 25th European Congress of Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark.

RESEARCH GRANTS

CMHS Research Grants

Dr A Sonnevend [PI]
Efficacy of fosfomycin against carbapenem resistant Escherichia coli and Klebsiella pneumoniae
NP-15-04.

Prof. B al-Ramadi [PI], Dr Y Idaghdour and Dr MJ Fernandez-Cabezudo
Tumor-associated myeloid cells as targets for cancer immunotherapy: Characterization by RNA sequencing and genomic profiling at single-cell resolution level.

Dr E Elkord [PI]
Levels of myeloid-derived suppressor cells in peripheral blood and tissue of breast and colorectal cancer patients.

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

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

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences
Prof B al-Ramadi [PI], Dr MJ Fernandez-Cabezudo
Obesity as a potentiating factor in tumor development: Implications for cancer immunotherapy.

Dr MJ Fernandez-Cabezudo [PI] , Prof B al-Ramadi

Neuro-immune modulation of inflammatory diseases: potential role in the amelioration of diabetes.

Terry Fox Fund for Cancer Research

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

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

Prof TA Rizvi [PI]
Structural and functional analysis of the Rem-responsive elements (RmREs) of mouse mammary tumor virus (MMTV): Implications for developing new generation vectors for cancer gene therapy.

National Research Foundation, UAE University (UPAR)

Prof B al-Ramadi [PI], Dr MJ Fernandez-Cabezudo
Development of Manuka honey and related products as adjuvant therapy for cancer.

Prof B al-Ramadi [PI], Dr MJ Fernandez-Cabezudo
Mechanisms underlying obesity-promoted tumor development: Role of tumor-associated macrophages, hypoxia and the NALP3 inflammasome.

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

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

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

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

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

Dr MJ Fernandez-Cabezudo [PI], Prof B al-Ramadi
Cholinergic regulation of mucosal interphase: a biochemical and histological analysis.

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

2015

Medical Microbiology & Immunology

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

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

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Department of Obstetrics & Gynaecology

Research Profile

Assistant Professor and Chair:
Dr S Al Awar
Associate Professor:
Dr H Mirghani
Assistant Professor:
Dr H Elbiss
Dr O Ortashi
Medical Research Specialist II:
Dr N Osman
Medical Research Assistant:
Ms Z H Balayah
Administrator:
Ms S Al Yahyaee

The research interests in the department are in obstetrics, fetal medicine, minimal access gynecological surgery and women's health education. The specific areas of research interests of each faculty member is listed below:

Dr Shamsa Al Awar's major area of research of interest is
- Fetal abnormality.
- Maternal health.
- Placental perfusion.
- General women and community health initiatives.

Dr Hisham Mirghani's major area of research of interest is
- Fetal growth behavior during maternal fasting.
- Fetal growth and pregnancy outcome in GDM.
- Fetal abnormalities
- Placenta perfusion studies
- Medical education: learning style and acquisition of clinical skills

Dr Osman Ortashi's major area of research of interest is
- Gynecology and gynecological cancers. His research is focusing on cervical cancer prevention and Human Papilloma Virus related cancers and diseases.
- Knowledge, attitude & practice towards the Human Papillomavirus infection & vaccine.
- Cervical screening

Dr Hassan M Elbiss' major area of research of interest is
- Urogyneacology, minimal access surgery, in-vitro human human placenta perfusion
- Epidemiology of Pelvic Flood Dysfunction
- Management of Pelvic Flood Dysfunction
- Gynaecological laparoscopic surgery
- Gynae-oncology

Articles in Peer-reviewed Journals

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Hamdan MA, Chedid F, Bekdache GN, Begam M, Alsafi W, Sabri Z, Mirghani HM.(2015). Perinatal outcome of congenital heart disease in a population with high consanguinity. J Perinat Med, 43(6):735-40.

Mirghani H, Osman N. Dhanasekarans, Elbiss HM, Bekdache G.(2015).Transplacental transfer of 2-naphthol in human placenta. Toxico Rep, 2:957–960.

Elbiss HM, Osman N, Hammad FT. (2015). Prevalence, risk factors and severity of symptoms of pelvic organ prolapse among Emirati women. BMC Urol, 15:66.

Proceedings, Conferences, Invited Lectures, Websites & others

Al Awar S. (2015). Origin of Health & Diseases, June, Malaysia.

Al Awar S. (2015). Cervical Cancer & HPV Vaccine, Oct., Al Ain, UAE.

Al Awar S. (2015). Postpartum Depression, Nov., Abu Dhabi, UAE.

Al Awar S. (2015). New updates in cervical cancer prevention, 26th Dec, Abu Dhabi, UAE.
Al Awar S. (2015). Medical Career, April, Al Ain, UAE.

AlAwarS. (2015). When Health & Disease Begin. Omani Women Association, May, Shinas, Sultanate of Oman.

Al Awar S. (2015). Breast Cancer prevention & cervical Cancer prevention at Shaikha Sabha Bint Awaidah Center, June, Al Ain, UAE.

Al Awar S. (2015). Cervical Cancer Prevention, April, UAEU Female Campus, Al Ain, UAE.

Al Awar S. (2015). Cervical Cancer Prevention & Vaccine, Fatima Collage, Nov., Al Ain, UAE.

Mirghani HM. (2015). Obstetrics and Gynecology (Arab Health) Exhibition & Congress 2015, Dubai, UAE.

Mirghani HM. (2015). The International Federation of Gynecology and Obstetrics (FIGO) World Congress, Vancouver, Canada 4-9 October.

Mirghani HM. (2015). International Society of Ultrasound for Obstetrics & Gynecology (ISUOG) World Congress, Montréal, Canada 11-14 October.

Elbiss HM. (2015). Recent advances in management of overactive bladder. Pan Arab OB/GYN Conference, March, Dubai, UAE.

Elbiss HM. (2015). Mesh or no mesh in management of uterovaginal prolapse. Pan Arab OB/GYN Conference, March, Dubai, UAE.

Elbiss, HM, Ain Alkhaleej CME Activities. Pelvic floor dysfunction among women: approach and management, 16th January, Al Ain, UAE.

Elbiss HM. (2015). Cromwell Hospital Symposium. Historical evolution in surgical management of female urinary incontinence, 13th February, Al Ain, UAE.

RESEARCH GRANTS

CMHS Research Grants
Drs H Elbiss [PI], N Osman, Prof H Mirghani
Human placental transport and metabolism of Solifenacin (Anti-muscarinic agent) and potential effects on placental structure.

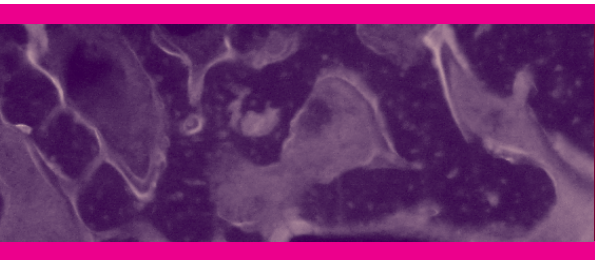
UAEU Start –up Research Grant
Drs S Al Awar [PI], N Osman
Paracetamol as Over-the-Counter (OTC) medicine in pregnancy.

UAEU Program for Advanced Research (UPAR) Grant
Prof H Mirghani, Drs N Osman & H Elbiss
The transport of Satolol & Flecainide across the placenta: an ex-vivo human placenta perfusion study.

Bill and Melinda Gates Foundation Grant
Drs AH Khandoker [PI], S Al Awar
Fetal phonogram recording system research study.

2015

Obs & Gyn



Department of Paediatrics

Research Profile

Professor & Chair:
Prof A-K Souid
Professors:
Prof YM Abdulrazzaq (Emeritus)
Prof E Aburawi
Prof L Al-Gazali
Prof H Narchi
Associate Professors
Dr S Al-Hammadi
Dr F Al-Jasmi
Dr A Al-Suwaidi
Clinical Instructors:
Dr A Al Blooshi
Dr L Al Mekaini
Teaching Assistants
Dr F Al Dhaheri
Dr N Al Dhaheri
Dr F Ismail
Research Medical Specialist
Mr T Pramathan
Research Nurse
Ms S Al Hamad
Medical Secretary
Ms S Alketbi

Academic staff in the Department of Pediatrics pursue research that promotes children health. Progress has been made in several areas including, inborn errors of metabolism, pathogenesis of respiratory syncytial virus and influenza infections, child development, obesity, vitamin D deficiency, immunization, and genetic disorders. Human diseases and novel pharmaceutical agents have been investigated in mouse models.

Cerebral dysgenesis has been investigated at the molecular level. A newly recognized type of agyria-pachygyria has been described. The severe form of myotonia with bone dysplasia [Stüve- Wiedemann Syndrome (SWS)] has been identified to be common in UAE. A founder mutation in the leukemia inhibitory factor receptor (LIFR) has been discovered in the families with SWS. The gene for Joubert syndrome has been mapped to 9q34.3, and its genetic heterogeneity has been established. A newly recognized type of epiphyseal dysplasia has been described and mapped to 15q26. Metabolic and genetic disorders (including newborn screening) in the UAE have been delineated.

Anti-epileptic drugs (vigabatrin and lamotrigine) ingested by women during pregnancy are found to be teratogenic. Studies are ongoing to determine the impact of folic acid and vitamin B12 supplementations on the frequency of these anomalies. Aflatoxins, toxins commonly found in nuts and grains, are found to be increased in pregnant women and their offspring. The effects of molecularly targeted therapies (e.g., Pi3K and MEK inhibitors) on murine tissues have been investigated.

Reference intervals for the complete blood counts have been established from birth to 6 years of age. The prevalence of latent TB infection in children has been reported. Pediatric studies are

ongoing to assess obesity, diabetes, and cardiovascular disease.
Several studies on the clinical picture, outcome, and complications of bronchiolitis have been completed and presented at research conferences.

A collaborative research work on sternal osteomyelitis in children with European researchers has led to presentations at several international conferences and a publication in a medical journal.

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

A study is being carried out to look into the proportion of renal scarring and urological anomalies that can be missed by implementing the NICE or the AAP guidelines for imaging children with urinary tract infections. The results have been presented at an international research conference and have been published in a medical journal.

In view of the high prevalence of hypovitaminosis D in young pregnant women, a population based study on the status of vitamin D levels among female adolescents has been completed, showing a very high prevalence. This information will lead to the development of interventional studies, aiming to achieve normal vitamin D status in women prior to pregnancy.

A study on the serological response to childhood vaccines has been completed.

The pathophysiology, mechanism, and treatment of anaphylactic shock in exp erimental rat model have been investigated. Our finding shows the K+ ATP-channel inhibitor glyburide improves hemodynamics and has an effect on mediators release in response to murine anaphylactic shock. Glyburide exhibits protective effect against hypotension and significantly increases survival. Treatment with glyburide may be a new approach in the treatment of patients with anaphylactic shock.

Potassium channel blockers, such as 4-aminopyridine (4-AP) have been found to induce vasoconstriction. This objective tests the ability of 4-AP to restore blood pressure and increase survival in anaphylactic shock. We have found voltage-dependent K+ channel inhibition restores blood pressure and increases survival in anaphylactic shock. 4-AP or related voltage-dependent K+ channel blockers could be a useful additional therapeutic approach to treatment of anaphylactic shock.

We have investigated the pathophysiology and treatment of arrhythmia. We found that a splice site mutation in the TECRL gene to be associated with inherited lethal arrhythmias. We have used patient-specific hiPSC-cardiomyocytes, and evaluated the functional phenotype in vitro.

The continued project of national survey of Down syndrome and its associated problems has led to few publications including: national growth charts for United Arab Emirates children with Down syndrome from birth to 15 years of age. We are studying the quality of life and stress in mothers of children with Down syndrome and screening these children for Celiac Disease, hypothyroidism, and Diabetes Mellitus. Also we are looking at the incidence and prevalence of congenital heart disease in this group of children with Down syndrome.

We are evaluating the role of miRNA-19 and miRNA-29 in young Emiratis with poor control T1DM and T2DM, to identify the targets regulated by miRNA19 and miRNA29 in DM and the functional relevance of them using the animal models for DM.

Articles in Peer-reviewed Journals

Aburawi EH, Aburawi HE, Bagnall KM, Bhuiyan ZA. (2015) Molecular insight into heart development and congenital heart disease: An update review from the Arab countries. Trends Cardiovasc Med, 25(4):291-301.

Aburawi HE, Nagelkerke N, Deeb A, Abdulla S, Abdulrazzaq YM. (2015) National growth charts for United Arab Emirates children with Down syndrome from birth to 15 years of age. J Epidemiol, 25:20-9.

Akizu N, Cantagrel V, Zaki MS, Al-Gazali L, Wang X, Rosti R O, Dikoglu E, Gelot A B, Rosti B, Scott E M, Silhavy J L, Schroth J, Copeland B, Schaffer A E, Gordts P, Esko J D, Kara M, Azam M, Ben-Omran T, Selim L, Gamal I, Abdel Hadi S, Mojahedi F, Kayserili H, Masri A, Bastaki L, Temtamy S, Müller U, Desguerre I, Casanova J-L, Gunel M, Gabriel S B, de Lonlay P, Gleeson J G. (2015). Biallelic mutations in SNX14 lead to a syndromic form of cerebellar atrophy and lysosome-autophagosome dysfunction. Nat Geneti, 47(5):528-34.

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Profiling cellular bioenergetics, glutathione levels and caspase activities in stomach biopsies. World Gastroenterol, 21:644-652.

Almarzooqi SS, Alfazari AS, Abdul-Kader HM, Saraswathiamma D, Albawardi AS, Souid AK. (2015). In vitro effects of platinum compounds on renal cellular respiration in mice. Int J Clin Exp Pathol, 8:81-95.

Albawardi A, Almarzooqi S, Saraswathiamma D, Abdul-Kader HM, Souid A-K, Alfazari AS (2015).The mTOR inhibitor sirolimus suppresses renal, hepatic, and cardiac tissue cellular respiration. Int J Physiol, Pathophysiol and Pharmacolol, 1; 8:81-95.

Alshamsi M, Shahin A, Ibrahim FM, Tareq S, Souid A-K, Mensah-Brown EPK. (2015). Bioenergetics of the spinal cord in experimental autoimmune encephalitis of rats. BMC Neurosci, 16:37.

Al-Hammadi S, Almarzooqi S, Abdul-Kader HM, Saraswathiamma D, Souid A-K. (2015) The PI3K inhibitor idelalisib suppresses liver and lung cellular respiration. Int J Physiol, Pathophysiol and Pharmacol.

Al-Jasmi FA, Al-Shamsi A, Hertecant JL, Al-Hamad SM, Souid A-K. (2015). Inborn errors of metabolism in the United Arab Emirates: Disorders detected by newborn screening (2011 – 2014). J Inherit Metab Dis Rep, Nov 21. PMID: 26589311.

Al Jasmi F, Al Jumah M, Alqarni F, Al-Sanna'a N,Al-Sharif F, Bohlega S, Cupler EJ, Fathalla W, Hamdan MA, Makhseed N, Nafissi S, Nilipour Y, Selim L, Shembesh N, Sunbul R, Tonekaboni SH. MENA Pompe Working Group. (2015). Diagnosis and treatment of late-onset Pompe Disease in the Middle East and North Africa region: consensus recommendations from an expert group. BMC Neurol, 15(1):205. doi:10.1186/s12883-015-0412-3.

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Al-Shamsi AM, Ben-Salem S, Hertecant J, Al-Jasmi F. (2015). Transaldolase deficiency caused by the homozygous p.R192C mutation of the TALDO1 gene in four Emirati patients with considerable phenotypic variability. Eur J Pediatr, 2014 Nov 12. PubMed PMID: 25388407.

Ben-Salem S, Gleeson JG, Al-Shamsi A M, Islam B, Hertecant J, Ali BR, Al-Gazali L. (2015) Asparagine Synthetase Deficiency Detected by Whole Exome Sequencing Causes Congenital Microcephaly, Epileptic Encephalopathy and Psychomotor Delay. Metab Brain Dis, (3):687-94.

Ben-Salem S, Al-Shamsi AM, John A, Ali BR, Al-Gazali L. (2015). A Novel Whole Exon Deletion in WWOX Gene Causes Early Epilepsy, Intellectual Disability and Optic Atrophy. J Mol Neurosci, 56(1):17-23.

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Tewary K, Khodaghalian B; Narchi H. (2015). Acute penile pain and swelling in a four-year old child with Henoch-Schönlein purpura, BMJ Case Rep. pii: bcr2013202341. doi: 10.1136/bcr-2013-202341.

Books, Chapters, Reviews and Editorials

Aburawi EH, Aburawi HE, Bagnall KM, Bhuiyan ZA. (2015). Molecular insight into heart development and congenital heart disease: an update review from the Arab countries. Trends Cardiovasc Med, 25:291-301.

Al Shibli A, Narchi H. (2015). Bartter and Gitelman syndromes: Spectrum of clinical manifestations caused by different mutations. World J Methodol. 5(2): 55-61.

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Proceedings, Conferences, Invited Lectures, Websites & Others

Aburawi EH. (2015). Overview of congenital heart disease. Cardiology Review, Al Ain, June. (Invited Speaker)

Aburawi EH. (2015). Overview of Arrhythmias in paediatric age group. Al Ain Cardiology Review, June. (Invited Speaker)

Aburawi EH, Al Tunaiji M, et al. (2015). Rheumatic Fever, is it real history? Poster presentation. World Congress of Pediatric Infectious Diseases, Brasil, 18th – 22nd November.

Aburawi EH. (2015). Catecholaminergic polymorphic ventricular tachycardia, type 3: An autosomal recessive inherited cardiac arrhythmia caused by novel mutation in the TECRL gene. UAE University Research Conference, 24th– 25th November,

Aburawi EH. (2015). Clinical issues in Kawasaki Disease. CME-Al Ain Hospital. Al Ain, 8th December. (Invited Speaker)

Aburawi EH. (2015). Catecholaminergic polymorphic ventricular tachycardia, type 3: An autosomal recessive inherited cardiac arrhythmia caused by novel mutation in the TECRL gene. The 6th SEHA Research Conference. Abu Dhabi. 16th-17th December.

Aburawi EH. (2015). Over view on Congenital Heart Disease. Rapid Review Course in Cardiology. Al Ain, UAE. 26th December. (Invited Speaker)

Al-Jaibeji H S, Al-Gazali L and Ali B R (2015). Genotypes Frequencies of rs9923231 and rs7294 SNPs in the VKORC1 gene among Emiratis and their Implications for Warfarin Dosage. The first UAE Graduate Students Research Conference, Abu-Dhabi, UAE, 22nd-24th March.

Al Jasmi F. (2015). Approach to inborn errors of metabolism. 1st Abu Dhabi Neonatal Multispecialty Symposium, Abu Dhabi. (Invited Speaker)

Al Jasmi F. (2015). Diagnostic Protocol, Clinical opinion" 1st MENARD Summit, Dubai. (Invited Speaker)

Al Jasmi F. (2015). Case-based identification and diagnosis workshop" LSD Master Class, Abu Dhabi. (Invited Speaker)

Al Jasmi F. (2015). Inborn Errors of Metabolism in the United Arab Emirates: Disorders Detected by Newborn Screening (2011 – 2014)" 12th MEMG, Muscat. (Oral presentation)

Al Jasmi F. (2015). Insights into lysosomal storage disorders–Gaucher Disease. Annual Gaucher Disease Regional Workshop Middle East & North Africa, Dubai. (Invited Speaker)

Al Jasmi F. (2015). Development of impactful disease awareness initiatives. MELSDEC, Dubai. (Invited Speaker)

Al Jasmi F. (2015). International and regional perspectives on the prevalence and importance of LSDs" LSD MasterClass, Dubai. (Invited Speaker)

Al Jasmi F. (2015). Introduction to Genetic Counselling. Premarital Screening Meeting, Abu Dhabi. (Invited Speaker)

Al Jasmi F. (2015). Mucopolysaccharidosis. Paediatric Symposium at Kalba Hospital. (Invited Speaker)
Al Jasmi F. (2015). Insight to lysosomal storage disorders. Pediatric Symposium at Kalba Hospital. (Invited Speaker)

Milhem R M, Al-Gazali L and Ali B R. Improved plasma membrane expression of the trafficking defective P344R mutant of muscle, skeletal, receptor tyrosine kinase (MuSK) causing Congenital Myasthenic Syndrome. The first UAE Graduate Students Research Conference, Abu-Dhabi, UAE, 22nd-24th March.

Narchi H. (2015) Hypertension in children. International Paediatric CME Conference, Ain Al Khaleej, AL Ain, Oct.

The UAEU Annual Research and Innovation Conference and 6th SEHA Research Conference, 2015.

A cross-sectional serosurvey on childhood vaccine-preventable diseases in the United Arab Emirates. The UAEU Annual Research and Innovation Conference and 6th SEHA Research Conference, 2015.

Al Jasmi F. (2015). Natural history of Mucopolysaccharidosis Type III in United Arab Emirates. SSIEM, JIMD.

RESEARCH GRANTS

CMHS Grants

Prof H Aburawi [PI], Drs S Emerald, SO Kumar
Profiling the Role of miRNAs 19 and 29 and its Isoforms in Emirati Patients with Diabetes Mellitus. (2014-2015).

Prof. Bassam Ali, Al Jasmi [co-PI]
Novel approaches to ameliorate the effects of mutations underlying Lysosomal Storage Disorders in Emirati patients. (2014-2017).

Al Jasmi [PI]
Whole Exome sequencing for unsolved Mendelian disorders. Inborn Errors of Metabolism. (2015).

UAEU-Zayed Health Centre Interdisciplinary Grant

Prof H. Aburawi [PI], Drs S Emerald, SO Kumar
The identification of the genetic defects underlying monogenic disorders in UAE. (2014-2017).

Prof H. Aburawi [PI]
Further characterization of the cellular mechanisms underlying several disease-causing mutations in VLDL and LDL receptors (VLDLR and LDLR). (2015-2016).

UAEU and SQU Research Grant

Dr F Al Jasmi [PI]
Mitochondrial DNA variation in Oman and United Arab Emirates. Mitochondrial Diseases. (2015).

2015

Paediatrics

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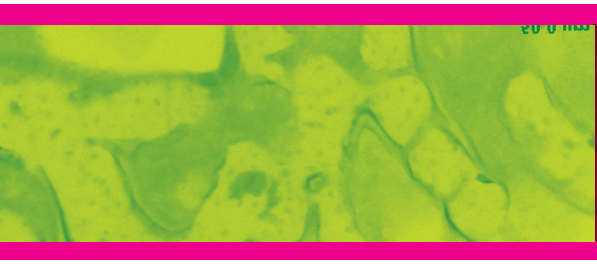

Department of Pathology

Research Profile:

Assistant Professor and Chair:
Dr S Almarzooqi
Professors:
Prof M Agarwal
Associate Professor:
Dr B Ali
Dr S Al Salam
Assistant Professor:
Dr A Albawardi
Adjunct Professor:
Prof G Patrinos
Adjunct Assistant Professor:
Dr K AlBraiki
Medical Research Specialists:
Ms AJ Mathew
Ms M Sudhadevi
Ms Dhany
Administrator:
K Al Shiba

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

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

Prof. Bassam Ali - Human Genetics
Identification of Molecular Defects Underlying Single Gene Disorders in the UAE and Arab Populations. Recessive disorders are highly prevalent in the Arab populations, including the UAE, mainly due to high levels of consanguinity and lack of prenatal and/or pre-conception diagnosis. We have developed a molecu-

lar genetics research laboratory to elucidate the molecular defects causing recessive disorders found in the UAE with emphasis on mental disability, metabolic, and dysmorphologic disorders. We are collaborating with major research groups at Harvard Medical School (USA), Rockefeller University (USA), King Faisal Specialist Hospital and Research Center (KSA) and Sultan Qaboos University (Oman).

Cellular Mechanisms of Human Monogenic Disorders. We are interested in protein trafficking and quality control within eukaryotic cells. The protein quality control at the endoplasmic reticulum level is responsible for the development of several human genetic diseases including cystic fibrosis and emphysema. We recently elucidated the cellular mechanisms underlying Robinow Syndrome and Acromesomelic Dysplasia Type Maroteaux, recessive disorder that has been found in several parts of the Middle East, including Oman and Saudi Arabia. We are currently focussing on establishing the mechanism(s) underlying Familial Hypercholesterolemia, Hereditary Hemorrhagic Telangiectasia and other ER-associated degradation diseases. In addition, we are exploring ways of manipulatiing the ER quality control for potential therapy of such diseases.

Pharmacogenomics. We are interested in establishing the allele and genotype frequencies of genes encoding important drug metabolizing enzymes among UAE and Arab populations. In particular, we are interested in the pharmacogenomics of cardiovascular and cancer treatments.

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

Role of Galectin-1 and Galectin-3 in Breast Carcinoma Chemoresistance. Breast carcinoma is the most common malignant neoplasm and the second cause of cancer death in women worldwide. It is a common cancer among UAE population and the most common cancer among females. Despite all the advances in the early detection, drug resistance is a major problem in our battle against cancer. Galectin-1 (Gal-1) and Galectin-3 (Gal-3) are members of the beta-galactoside-binding family and play a role in cell proliferation, adhesion, and migration. Both of them have anti-apoptotic function; hence they can play a role in cancer chemoresistance. Cancer chemoresistance leads to cancer recurrence and increased mortality and morbidity. This project is aimed at carrying out a prospective study to determine the role of Gal-1 & 3 in breast cancer chemoresistance with the aim of establishing Gal-1 and Gal-3 expression as a biomarker for drug resistance. If successful, this would establish Gal-1&3 expression as a key prognostic marker for evaluating treatment success in breast carcinoma.

Role of Trefoil Factor (TFF) 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 classified into four grades: 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 no published data concerning the expression of TFFs in human gliomas. In addition, there are no previous reports concerning the role of trefoil factors in the pathogenesis or progression of glioma.

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

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

Murine Model for Nephrotoxicity and Cytoprotection. The mammalian target of rapamycin (mTOR), a serine/ threonine kinase that supports nutrient-dependent cell growth and survival, is known to control energy conversion processes within the mitochondria. Consistently, inhibitors of mTOR (e.g., the immunosuppressant rapamycin, also known as sirolimus, or Rapamune®) have been shown to impair mitochondrial function. Inhibitors of calcium-dependent serine/ threonine phosphatase calcineurin (e.g., the immunosuppressants tacrolimus and cyclosporine), on the other hand, strictly prevent lymphokine production leading to a reduced T-cell function. This in vitro study measured the effect of these commonly used drugs on cellular respiration (mitochondrial O2 consumption) in target tissues (kidney, liver, and heart) from C57BL/6 mice. Phosphorescence oxygen analyzer was used for this purpose. Sirolimus (10 µM) inhibited renal (22%, $p=0.002$), hepatic (39%, $p<0.001$), and cardiac (42%, $p=0.005$) cellular respiration. Tacrolimus and cyclosporine had no or minimum effects on cellular respiration in these tissues. The results demonstrate that impaired cellular bioenergetics is a sensitive biomarker of the immunosuppressants that target mTOR. The next step in this research will address a common clinical scenario that is to examine the combined functional and structural effects of mTOR inhibitors diabetic and/or hypertensive kidneys.

Endometrial Carcinoma & Tumor Mismatch Tepair Genes in UAE Population. Mutations in DNA mismatch repair (MMR) genes (MLH1, PMS2, MSH2, & MSH6) increases individual's cancer risk. Lynch Syndrome is an autosomal dominant disease caused by mutations in MMR genes. Carriers are at an increased risk for the development of colorectal and endometrial carcinoma. Endometrial cancer is common among UAE population. The study will determine the prevalence of MMR genes mutation in UAE patients. Endometrial carcinoma cases will be tested for mismatch repair gene protein expression using immunohistochemistry on paraffin sections. Findings will be correlated with clinical parameters, such as patient's age, body mass index, family history of cancer, and clinical outcome. Result may change the current health care policy, by employing routine testing for MMR on all newly diagnosed endometrial cancer cases.

Plasma Cells & Nonspecific Endometritis: An Old Entity Revisited. Endometrial inflammation (endometritis) is often nonspecific, whereby no specific etiology is morphologically apparent. The presence of plasma cells is fundamental in establishing the diagnosis of endometritis; preferably in the appropriate morphological background of reactive endometrial stroma, altered gland development, presence of other inflammatory cells and evidence of endometrial breakdown and bleeding. The current study will examine the scientific literature on "endometritis & plasma cells" in humans. The prevalence of plasma cells in all endometrial biopsies & curretings performed at Tawam hospital will be established. In addition, clinician's follow-up and management of these cases will be recorded. Syndecan-1 (CD138) immunohistochemical stain will be obtained on all cases; the latter stain is a plasma cell marker. Data may support routine use of CD138 on a subset of endometrial biopsies based on morphological and/or clinical parameters.

Novel Molecular Biomarkers of Genitourinary, Breast & Gynaecological Malignancies in United Arab Emirates Population. Molecular markers have been characterized with variable prognostic significance in prostatic cancer patients in the west. Such markers include: ERG, PTEN, TFF3, CRISP3 or SPINK1. These markers are also associated with different histological subtypes of prostate carcinoma. However, none of the above specified markers have been studied in Middle Eastern population. Similar markers also exist in breast and gynecological cancers. The current study will characterize molecular markers of genito-urinary tumors, breast and gynaecological malignancies, in the local population. This should enhance our understanding of the molecular signature(s) of these tumors.

High-Risk Human Papilloma Virus in Cervical Dysplasia and Carcinoma in the UAE population: A multiplex real-time Polymerase Chain Reaction study. Cervical cancer is among the top three cancers reported in the United Arab Emirates as per 2013 cancer registry annual report in Abu Dhabi. Infection with human papilloma virus (HPV) is the main etiological factor in the development of cervical neoplasia. The

reported incidence of cervical abnormalities in cervical screening specimens in the UAE is 3.6%. Data regarding specific HPV genotypes are not available in our population. The aim of this study is to identify high risk HPV subtypes and multi-viral sub-types infection in study population using multiplex real-time polymerase chain reaction and compare HPV genotypes among nationals and non-nationals.

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.

Dr. Saeeda Almarzooqi-Histopathology/Gynaecological and Paediatric Pathology:
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.

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.

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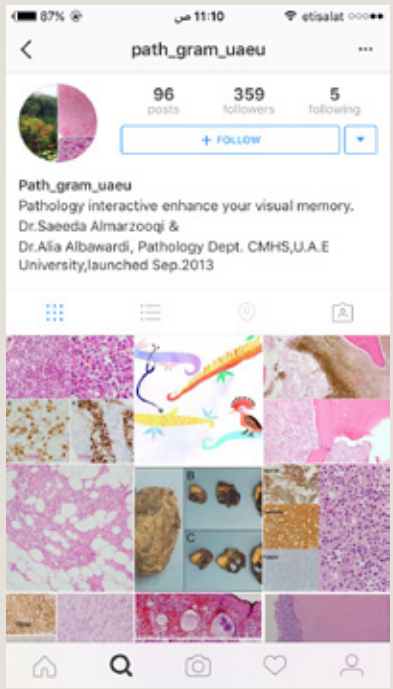

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OTHER DEPARTMENTAL ACTIVITIES:

Pathology Update, Sofitel Hotel, Dubai, 28th February 2015.
Meeting organized by the department that focused on recent updates in gynecological and soft tissue pathology. It was attended by physicians from the UAE and Saudi Arabia and was presented by two expert speakers from Saudi Arabia: Dr. Abdulmohsen Alkushi and Dr. Hassan Huwait.

Pathology educational instagram account: path_gram_uaeu.
An interactive link that presents clinically encountered cases with emphasis on pathological findings and diagnosis

Original Peer-reviewed articles

Albawardi A, Almarzooqi S, Saraswathiamma D, Abdul-Kader HM, Souid AK,
Alfazari AS. (2015). The mTOR inhibitor sirolimus suppresses renal, hepatic, and cardiac tissue cellular respiration. Int J Physiol Pathophysiol Pharmacol, 20;7(1):54-60.

Al Hammadi S, Almarzooqi S, Abdul-Kader HM, Saraswathiamma D, Souid AK. (2015). The PI3K-delta Inhibitor Idelalisib Suppresses Liver and Lung Cellular Respiration. Int J Physiol Pathophysiol Pharmacol, 7(3):115-125.

Ali BH, Al-Salam S, Al Za'abi M, Al Balushi KA, AlMahruqi AS, Beegam S, Al-Lawatia I, Waly MI, Nemmar A. (2015). Renoprotective effects of gamma-aminobutyric acid on cisplatin-induced acute renal injury in rats. Basic Clin Pharmacol Toxicol, 116(1):62-8.

Almarzooqi SS, Alfazari AS, Abdul-Kader HM, Saraswathiamma D, Albawardi AS,
Souid AK (2015). In vitro effects of platinum compounds on renal cellular respiration in mice. Int J Clin Exp Pathol, 8(1):81-95.

Ben-Salem S, Nara S, Al-Shamsi AM, Valle D, Ali BR & Al-Gazali L. (2015). New Arab family with cerebral dysgenesis, neuropathy, ichthyosis and keratoderma syndrome suggests a possible founder effect for the c. 223delG mutation. Dermatol, 42:821-822.

Ben-Salem S, Al-Shamsi AM, John A, Ali BR, AL-Gazali L. (2015). A Novel Whole Exon Deletion in WWOX gene Causes Early Epilepsy, Intellectual Disability and Optic Atrophy. J Mol Neurosci, 56:17-23.

Ben-Salem S, Gleeson JG, Al-Shamsi AM, Islam B, Hertecant J, Ali BR, Al-Gazali L. (2015). Asparagine Synthetase Deficiency Detected by Whole Exome Sequencing Causes Congenital Microcephaly, Epileptic Encephalopathy and Psychomotor Delay. Metab Brain Dis, 30:687-694.

Ben-Salem S, Aljneibe MA, Khozaimy KM, Al-Kathiri KM, Alameri SS, Ali BR Al-Gazali L. (2015). A Novel Splice Site Deletion in the OFD1 Gene is responsible for Oral-Facial-Digital type 1 Syndrome in an Emirati Child. Hamdan Med J, 8:155–160.

Hashmi S, Al-Salam S. (2015). Acute myocardial infarction and myocardial ischemia-reperfusion injury: a comparison. Int J Clin Exp Pathol, 8(8):8786-96. eCollection 2015.

Hashmi S, Al-Salam S. (2015). Galectin-1: a biomarker of surgical stress in murine model of cardiac surgery. Int J Clin Exp Pathol, (6):7157-64. eCollection 2015.

Hashmi S, Al-Salam S. (2015). Galectin-3 is expressed in the myocardium very early post-myocardial infarction.Cardiovasc Pathol, 24(4):213-23.

John A, Kizhakkedath P, Al-Gazali L, Ali BR. (2015). Defective cellular trafficking of the Bone Morphogenetic Protein Receptor Type II by mutations underlying Familial Pulmonary Arterial Hypertension. Gene, 561:148-156.

Komara M, Al-Shamsi AM, Ben-Salem S, Ali BR and Al-Gazali L. (2015). A novel single nucleotide deletion (c.1020delA) in NSUN2 causes intellectual disability in an Emirati child. J Mol Neurosci, 57:393-399.

Mitropoulos K, Al Jaibeji H, Forero DA, Laissue P, Wonkam A, Lopez-Correa C, Mohamed Z, Chantratita W, Lee MT, Katsila T, Brand A, Ali BP, Patrinos GP. (2015). Success stories in genomic medicine from resource-limited countries. Hum Genomics, 9:11.

Mitropoulos K, Al-Jaibeji H, Forero DA, Laissue P, Wonkam A, Lopez-Correa C, Mohamed Z, Chantratita W, Michael Lee MT, Katsila T, Brand A, Ali BR*, Patrinos GP* (2015). Success stories in genomic medicine from resource-limited countries. Human Genomics, 9:1-7. *Joint senior authors

Moselhy H, Eapen V, Akawi NA, Younis A, Salih B, Othman AR, Yousef S, Clarke RA, Ali BR. (2015). Secondary association of PDLIM5 with Paranoid Schizophrenia in Emirati patients. Meta Gene, 5:135-139.

Milhem RM, Al-Gazali L, Ali BR. (2015). Improved plasma membrane expression of the trafficking defective P344R mutant of muscle, skeletal, receptor tyrosine kinase (MuSK) causing Congenital Myasthenic Syndrome. Int J Biochem Cell Biol, 60:119-129.

Nemmar A, Al-Salam S, Yuvaraju P, Beegam S, Ali BH. (2015). Emodin mitigates diesel exhaust particles-induced increase in airway resistance, inflammation and oxidative stress in mice. Respir Physiol Neurobiol. 215:51-7.

Books, Chapters, Reviews & Editorials

Fragoulakis V, Mitropoulou C, Williams MS, Patrinos GP. (2015). Economic Evaluation in Genomic Medicine. Elsevier/Academic Press, Burlington, CA, USA, ISBN 978-0128014974.

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Al-Salam S, Hashmi S. (2015). Role of galectin-3 in ischemia/reperfusion injury. Cardiology, 131:152-152.

Proceedings, Conferences, Invited Lectures, Websites & Others

Albawardi A. (2015). Second Emirates Surgical Pathology Conference-27th Annual Meeting of the Arab Division of the International Academy of Pathology (IAP-AD) Meeting, Dubai-UAE (Invited Speaker)

Albawardi A. (2015). American University Dubai. Middle East Studies Forum: Women in the UAE, Past & Present. Speakers: Dr. Saeeda Almarzooqi and Dr. Alia Albawardi from The Women's Museum in Dubai.

Albawardi A. (2015). "The Banff Classification, Challenges & Updates" MED Lab Arab Health Conference held in Dubai. (Invited Speaker)

Ali BR. (2015). Molecular and Cellular Basis of Monogenic Disorders in the UAE. First Clinical Research Symposium, Imperial College London Diabetes Center. Abu Dhabi, UAE. 1st October.

Ali BR. (2015). Genomic Medicine: The Molecular and Cellular Basis of Monogenic Disorders. Qatar Biomedical Research Institute, Doha, Qatar, 6th June.

Ali BR, Al-Gazali L, Milhem R. (2015). Is ER-Retention and Degradation the Most Common Cellular Mechanism Underlying Human Monogenic Disorders? Genomics of Rare Disease: Beyond the Exome. Cambridge, UK. 29th April-1st May.

Ali BR. (2015) Genomic Medicine and its Relevant to UAE: Genetics of Rare Single Gene Disorders in UAE. 6th RAK Medical and Health Sciences University Student Scientific Conference, Ras Al-Khaimah, UAE. 26th March.

Ali BR. (2015) Genomic Medicine and its Relevant to UAE. MEDLAB Molecular Diagnostic Meeting, Arab Health 2015, Dubai, UAE. 29th January.

Al-Jaibeji HS, Al-Gazali L, Ali BR. (2015). Genotypes Frequencies of rs9923231 and rs7294 SNPs in the VKORC1 gene among Emiratis and their Implications for Warfarin Dosage. The first UAE Graduate Students Research Conference, Abu-Dhabi, UAE. 22-24th March.

Almarzooqi S. (2015). Pathology Workup of Lung Cancer. Gulf Thoracic Congress 2015.

Almarzooqi S. (2015). A Tale of Cervical Neoplasia: Screening and Vaccination, 6th National Women's Health Conference: organized by Al Rahba Hospital, Intercontinental Hotel, Abu Dhabi, 21st November. (Invited speaker)

Almarzooqi S. (2015). 2nd Emirates Surgical Pathology Conference/27th Annual Meeting of the Arab Division of the International Academy of Pathology (IAP-AD) Meeting. Case presentation. (Invited speaker)

Al-Salam S. (2015). 20th World Congress on Heart Disease, Vancouver, 25th-27th July.

Al-Salam S. (2015). Update in Nephrology and Transplantation. Ras Alkhaimah, UAE. 16th-17th October.

Al-Salam S. (2015). Global Kidney Academy Master Class. Dubai, UAE. 9th-10th October.

Al-Salam S. (2015). 2nd Emirates Pathology Conference and 27th Annual meeting of Arab division of the international Academy of Pathology, Dubai, UAE. 25th-28th November.

Al-Salam S. (2015). Emirates Oncology Conference. Abu Dhabi, UAE. 19th-21st November.

Al-Salam S. (2015). UAEU Annual Research & Innovation Conference 2015. Al Ain, UAE. 24th-25th November.

Kizhakkedath P, John A, Milhem R M, Al-Gazali L, Ali BR. (2015). Is ER-Retention the Most Common Cellular Mechanism Underlying Human Monogenic Disorders? FASEB Science Research Conference on From Unfolded Proteins in the ER to Disease. Saxtons River, VT, USA. 14th-19th June.

Milhem R M, Al-Gazali L. Ali BR. (2015). Improved Plasma Membrane Expression of the Trafficking Defective P344R Mutant of Muscle, Skeletal, Receptor Tyrosine Kinase (MuSK) Causing Congenital Myasthenic Syndrome. The First UAE Graduate Students Research Conference, Abu-Dhabi, UAE. 22nd-24th March.

RESEARCH GRANTS

CMHS Research Grant

Drs A Albawardi (PI), S Almarzooqi, Prof AK Souid
Murine model for nephrotoxicity & cytoprotection. [2014-2015]

Prof G Patrinos (PI)
Application of next-generation sequencing to determine actionable pharmacogenomic biomarkers and haplotypes in oncology and cardiology among Emiratis. [2016-2018]

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

Profs BR Ali (PI), L Al Gazali
Further characterization of the cellular mechanisms underlying several disease-causing mutations in VLDL and LDL receptors (VLDLR and LDLR). [2014-2015]

Prof BR Ali (PI), Dr A Al Ghaferi
Establishing the pathogenicity of two novel ENO3 gene mutations in a family with suspected glycogen storage disorder. [2015]

Prof BR Ali (PI), Dr B Al Sawafi
Identification of the genetic causes of Intellectual disability and autism spectrum disorders in a consanguineous Emirati family. [2015]

CMHS Startup Grant

Drs A Albawardi, S Almarzooqi (PI), Prof AK Souid
In vitro assessment of antitumor activities. [2013-2016]

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

UAEU-UPAR Grant

Drs S Al-Salam (PI), S Hashmi.
Hypoxic signals in ischemic myocardium: Role of Galectin-1 and Galectin-3. [2012-2015]

Profs BR Ali (PI), L Al-Gazali
Whole-exome sequencing and homozygosity mapping analysis

of Emirati families with multiple Schizophrenic patients. [2015-2018]

Profs BR Ali (PI), L Al-Gazali
Whole-exome sequencing and homozygosity mapping analysis of Emirati families with multiple Schizophrenic patients. [2015-2018]

UAEU-Zayed Health Centre Interdisciplinary Grant

Drs S Al-Salam (PI), S Hashmi, Prof A Nemmar. Role of Galectin-3 in Ischemia/Reperfusion Injury. [2015-2018]

Profs BR Ali (PI), L Al-Gazali
Novel approaches to ameliorate the effects of mutations underlying lysosomal storage disorders in Emirati patients. [2014-2017]

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

Terry Fox Fund for Cancer Research

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

Al Jalila Foundation Seed Grant
Drs S Al-Salam, A Amin (PI)
Therapeutic effects of crocin against hepatocellular carcinoma: a preclinical study. [2014-2016]

CHMS Student Research Grant
Prof BR Ali (PI), Dr A Al Ghaferi

CHMS Student Research Grant
Prof BR Ali (PI), Dr B Al-Sawafi

2015

Pathology

Standing left to right:
Dr. B Ali, Prof M Agarwal, Dr. S Al-Salam, Ms. M Sudhadevi

Seated left to right:
Ms. D Saraswathiamma, Ms. K Al Shiaba, Dr. A Al Bawardi, Dr. S Al Marzooqi, Ms. A Mathew

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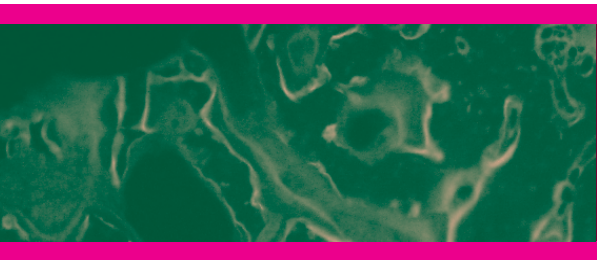

Department of Pharmacology & Therapeutics

Research Profile

Professor & Chair
Prof S Bastaki
Professors
Prof A Adem
Prof S Attoub
Prof M Oz
Associate Professor
Dr B Sadek
Assistant Professors
Dr R Mohanraj
Dr S Ojha
Dr F Yousuf
Teaching Assistant
Mr R A Beiram
Medical Research Specialists
Ms N Amir
Ms K Arafat
Mr S Dhanasekaran
Dr SM Nurulain
Mr A Shamsulislam
Medical Secretaries
Ms K Al Kaabi
Ms S Duncan
Central Facilities (Animal House)
Dr M H Ali
Mr M El Wasila
Mr M Shafiullah
Office Assistant
Mr S Alikutty

The Department of Pharmacology & Therapeutics has special interests in diabetes and degenerative diseases, neuroscience, clinical toxicology, gastroenterology and oncology. The research is done with state of the art equipment in purpose-built laboratories with good technical and other support.

Prof Salim Bastaki

Gastroenterology: Gastrointestinal diseases have increased in recent years. Our research is based on gastrointestinal secretion and the mechanism of action of proton pump inhibitors (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 PPIs, their use has declined owing to the potent anti-secretory and anti-ulcer activity of the PPIs. At present we are studying the new H3R antagonist on gastric acid and ulcer formation in the rat in vivo and in vitro. We have recently published the effect of receptor antagonist and PD-136450 on stress-induced gastric ulcer in rats and the healing rate of alcohol- and indomethacin-induced ulcers in the same rats.

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

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

Prof Abdu Adem

Diabetes: Mechanisms of Apoptotic Cell Death in Diabetes. In almost all multicellular organisms, cell suicide or apoptosis appears to play an important role in the maintenance of cellular homeostasis. Apoptosis is tightly regulated by a set of genes that either promote apoptosis or promote cell survival. Although a number of stimuli appear to trigger the process of apoptosis, there are two major signaling pathways of apoptosis: the death receptor pathway and the death receptor-independent or mitochondrial pathway. Mechanisms of apoptotic cell death are being studied in kidneys of an animal model of diabetes. The ultra structural features in the tubules seem to implicate apoptosis in the pathology of renal nephropathy. In addition, we have reported, for the first time, a significant loss of foot processes of podocytes (*) in the diabetic rat kidney (Fig. 1). These findings could contribute to the understanding of the pathophysiology 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 various central effects of the muscarinic drugs is difficult due to a lack of highly selective muscarinic agonists and antagonists. We, in collaboration with others, 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. Results from our lab have shown significant decrease of M4, but not of M1 receptors in the hippocampus of Alzheimer's patients compared to controls. Moreover, changes in these receptors have been reported by our group in adrenalectomized animal models which have been shown to have a selective loss of hippocampal neurons. Attempts to isolate and characterize M2-, M3-, and M5- selective toxins are in progress. Behavioral, biochemical and electrophysiological techniques are being used to understand the role of other neurotransmitters in diabetes, epilepsy, aggressive behavior, aging, and degenerative diseases.

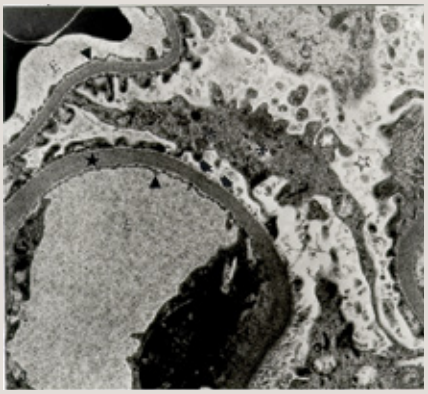

Figure 1. *Electron micrograph showing significant loss of foot processes of podocytes in the kidney of diabetic rat.*

Prof Murat Ahmet Oz

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

Prof Samir Attoub

Cancer Biology and Drug Discovery. Prof. Attoub has more than seventeen-year experience in cancer research, investigating different signaling pathways involved in breast, lung and colon cancer progression (apoptosis, proliferation, migration, invasion, angiogenesis and metastasis), including the JAK2/STAT3, PI3K/Akt/NFκB, NOTCH, and SMARCAD pathways as a driving force behind large numbers of tyrosine kinase and G-protein-coupled receptors. Prof. Attoub also has extensive experience in screening and development of news anti-cancer drugs and investigating the potential use RNA interference technology in cancer therapy.

Dr Rajesh Mohanraj

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

Dr Shreesh Ojha

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

Dr Bassem Shaban Sadek

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

The development of selective antagonists targeting central histamine H3 receptors enables the explanation of their physiological and pathophysiological functions, as the difficulty for developing satisfactory therapy of Alzheimer's disease (AD), Attention-Deficit HyperactivityDisorder (ADHAD), or drugs abuse (DA) lies in the complex pathophysiology of the disease. This involves numerous pathways that include deficiency in cholinergic neurotransmission, abnormalities of adrenergic, serotonergic and dopaminergic neurotransmission. Thus, the development of H3 receptor antagonists

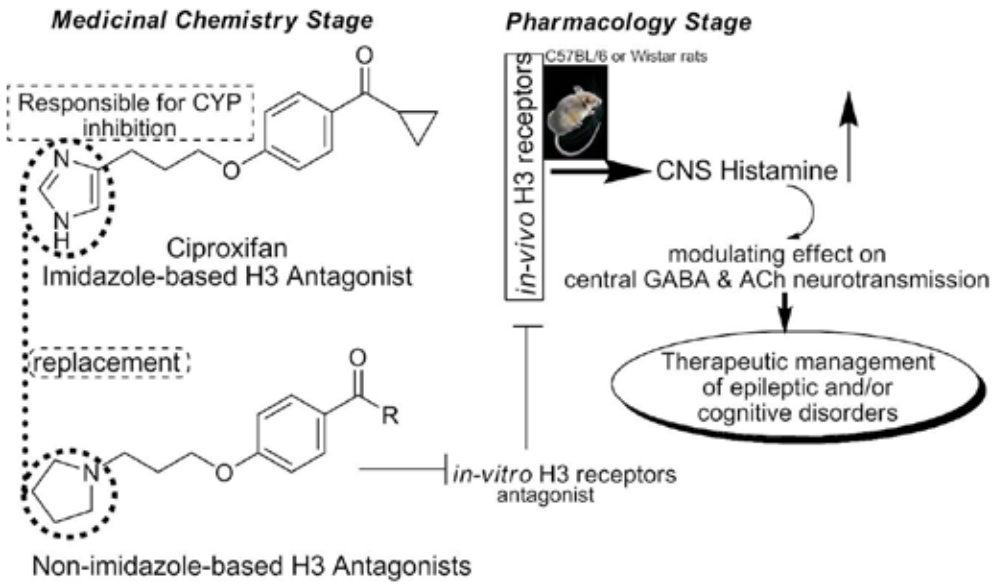

Figure 2. *Schematic representation of the various stages of drug design and development of potent and selective orally active histamine H3 receptor antagonists/inverse agonists.*

belonging to different chemical classes capable of penetrating into the CNS and modulating histaminergic neurotransmission in the central nervous system can positively affect the multi-neurotransmitter disorders, e.g. AD, ADHAD, or DA.

Research interest of Dr Bassem Shaban Sadek focuses on the structural development of those histamine H3 receptor antagonists targeting cognitive disorders. To this end, different chemical classes of antagonists, e.g. piperidine- and pyrrolidine-based antagonists are being synthesized and investigated for their in vitro antagonistic effect on human histamine H3 receptors (Fig. 2). Selected compounds with high in vitro antagonist activity will be further examined for their selectivity profile against a wide set of human G protein coupled receptors (GPCRs) expressed in different cell lines. Those most promising antagonists will be investigated for their in vivo modulating effects on epilepsy, memory impairment and drug addiction using different animal model systems (rats and mice). Such pharmacologic evaluation is a keystone in the development of future drugs of significant value in the therapeutic management of the aforementioned central disorders.

Dr Fakhreya Yousuf

Dr. Yousuf's 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 (VCI). VCI is a heterogeneous disease condition due to large and small vessel pathology. Small vessel disease with arteriolosclerosis secondary to hypertension and diabetes with white matter injury is the most common form. As the population increases in age, the incidence of vascular causes of dementia are 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, Dr. Yousuf 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 blood-brain-barrier (BBB) disruption and myelin breakdown. Memory impairment, as determined by Morris Water Maze (MWM), was evidenct 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-1α 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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Sadek B, Saad A, Schwed JS, Khan N, Subramanian D, Weizel L, Walter M, Stark H. (2015). Multiple targeting approach with histamine H3 receptor antagonists as novel and promising antiepileptic drugs. UAEU Annual Research and Innovation Conference, Al-Ain/UAE, Nov, 24-26. (Poster)

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RESEARCH GRANTS

CMHS Research Grants

Prof S Attoub [PI]
Impact of the combination of Frondoside A with Oxaliplatin or 5-fluorouracil in the treatment of colon cancer. (2014-2016)

Prof S Bastaki [PI]
Polymorphic N-acetyltransferase (NAT-2) and CYP1A2 phenotyping and genotyping of Emiratis. (2015-2016)

Dr B Sadek [PI]
Pro-cognitive evaluation of novel histamine H3 receptor antagonists belonging to non-imidazole class. (2015-2016)

Dr F Yousuf [PI]
Role of hypoxia on the tight junction proteins and the oligodendrocyte death in a rat novel model of vascular cognitive impairment. (2014- 2015)

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

Dr R Mohanraj [PI]
To investigate the effect of dimethyl fumarate on the diabetic retinal tissue injury. (2015-2016)

Dr S Ojha [PI]
To investigate the therapeutic potential of endocannabinoid system ligands in murine model of metabolic syndrome. (2014-2015)

UAEU UPAR Grant

Prof S Attoub [PI]
SMARCAD1 in breast cancer progression. (2015-2017)

Dr B Sadek [PI]
Pro-cognitive evaluation of novel histamine H3 receptor antagonists belonging to non-imidazole class. (2014-2016)

Dr S Ojha [PI]
To investigate the pharmacotherapeutic potential and underlying mechanism of phytocannabinoids in experimental model of cardiometabolic diseases. (2014-2017)

UAEU Centre-based Interdisciplinary Grant

Dr M Oz [PI]
Effects of monoterpenes on the function of serotonin-type 3 receptors of central nervous system. (2014-2015)

Internal Research Grant

Prof A Adem [PI]
Toxicological effects of pesticide exposure in agricultural workers in Al Ain, UAE. (2014-2016)

NRF Grant

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

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

Prof S Bastaki [PI]
Reproductive toxicology studies on a new antiepileptic compound H3R Ligand-3-(1H-imidazol-4-yl) propylpent-4-enylcarbamate in the mouse. (2013-2015)

Dr F Yousuf [PI]
Matrix metalloproteinases mediate death of oligodendrocytes with increase blood-brain barrier opening in chronic stroke. (2014-2015)

Prof M Oz [PI]
Effects of phytocannabinoids, cannabidiol, Δ9-tetrahydrocannabinol, on the function of serotonin-type 3 receptors of rat hippocampal neurons. (2015-2017)

Start-up Grants

Dr F Yousuf [PI]
Role of hypoxia in a rat model of vascular cognitive impairment. (2014- 2016)

Dr R Mohanraj [PI]
To identify the molecular mechanisms governing b4galT-V (LacCer synthase) regulation by hyperglycemia and to delineate the role of lactosylceramide (LacCer) in inducing retinal vascular inflammation: implications for the pathogenesis of diabetic retinopathy. (2013-2016)

2015

Pharmacology

Standing from Left to right: ***: K Kader, S Azimullah, S Dhanasekaran, N Hamadi, S Attoub, M H Ali, R Mohanraj, M Shafiullah.***

Seated left to right: ***N Amir, K Arafat, K Al Kaabi, F Yousuf, S Duncan, S Bastaki, A Adem, M Oz, S Ojha, B Sadek.***

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Department of Physiology

Research Profile

Professor & Chair:
Prof C Howarth
Professors:
Prof TE Adrian
Prof M Ljubisavljevic
Prof A Nemmar
Associate Professor:
Dr A Shmygol
Assistant Professor:
Dr SB Subramanya
Teaching Assistant:
Dr AS Kazim [abroad]
Medical Research Specialists:
Ms S Beegam
Mr J Oommen
Ms K Parekh
Mr A Qureshi
Ms B Stephen
Medical Research Technicians:
Ms Petrilla J
Ms Priya Y
Administrative Secretary:
Ms LA Aleissaee
Office Assistant:
Mr Saeed C

Members of the Department of Physiology have interests in neuroscience and physiology of the 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.

Prof Chris F Howarth

Cardiovascular function and diabetes. The major research focus of Prof. Howarth is diabetes mellitus and heart function and this work is carried out in the 'Electrophysiology Research Laboratory', a joint venture between Professor Howarth and Professor 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 ECG and other parameters in vivo (Fig. 1, opposite page). Video edge detection techniques are used to measure shortening and fluorescence photometry is used to measure intracellular Ca2+ in individual cardiac myocytes. Patch-clamp techniques are used to study membrane currents. Work in the Electrophysiology Research Laboratory is supported by technical staff, research assistants, undergraduate medical and bachelor's

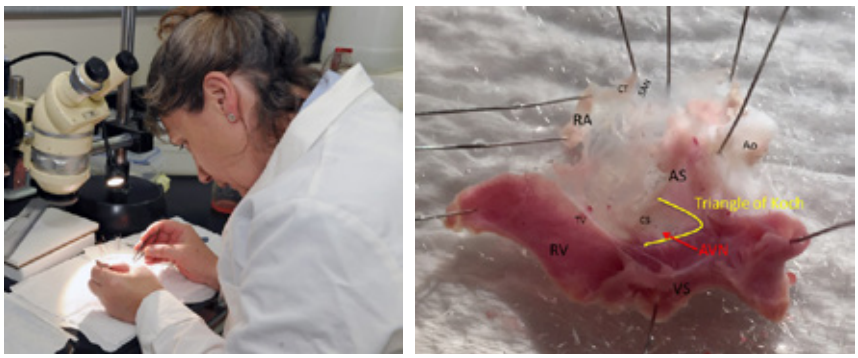

Figure 1. Dr Halina Dobrzynski (University of Manchester) dissecting atrioventricular node (left) and the atrioventricular node preparation (right).

students, masters, and doctoral students, and post-doctoral scientists from overseas laboratories who visit on a regular basis. Prof Howarth has ongoing collaborations with researchers in other departments at CMHS and various international research laboratories in the UK, Ukraine and other countries. Current projects include investigations of the effects of diabetes on atrioventricular node and sinoatrial node molecular biology and electrophysiology and the effects of diabetes on the electrophysiology of the failing heart. Work in the laboratory is generously supported by grants from Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences, National Research Foundation, United Arab Emirates University, College of Medicine & Health Sciences, LABCO a partner of Sigma-Aldrich and the Al Ain Equestrian, Shooting and Golf Club.

Prof M Ljubisavljevic

Basic Neurophysiology. The research activities of the Basic Neurophysiology Laboratory presently broadly focus on the 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 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) (Fig. 2) protocols on gene expression in diseases like stroke and chronic pain.

Experimental Clinical Neurophysiology. The experimental clinical neurophysiology projects in Prof. Ljubisavljevic use various Transcranial Magnetic Stimulation (TMS) techniques, and other classical Clinical neurophysiology methods (H and F wave and visual evoked potentials) to investigate mechanisms of human nervous system plasticity and the possibilities to remodel these processes in health and diseases. Prof. Ljubisavljevic primarily focuses on the organization and plasticity of cortical inhibitory and

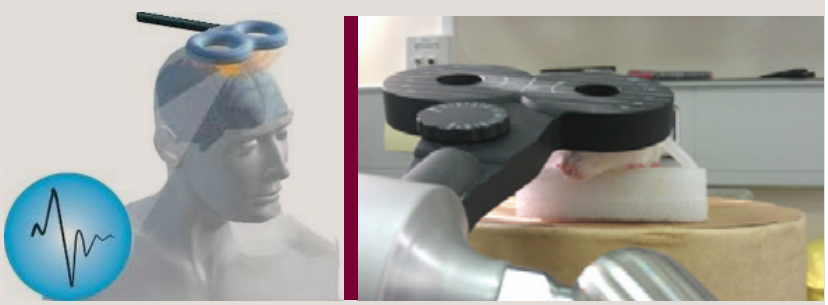

Figure 2. *The rat with stroke induced by middle cerebral artery temporary occlusion being stimulated by TMS and the schematic depiction of TMS stimulation in a human subject.*

excitatory pathways in the normal human motor cortex, and in movement disorders and chronic pain. Furthermore, he is interested in application of TMS and transcranial direct current stimulation (TDCs) in neurorehabilitation and treatment of movement disorders and chronic pain syndromes. Finally, his special interests over the years have been on cortical processes related to volition in exercise and fatigue. The work focuses on mechanisms associated with sensorimotor integration and maladaptive plasticity in central fatigue. His 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.

Prof A Nemmar

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. The laboratory of Prof Nemmar is studying mechanisms underlying the effects of air pollution on diabetes, hypertension and renal failure. They are also 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 Prof Nemmar's laboratory, they 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, TiO2, FeTiO2, carbon) and surface characteristics (iron coating, charge) are being investigated. These studies involve in vivo and in vitro investigations.

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

Prof Thomas E Adrian

Pancreatic cancer and cancer cachexia. The overall thrust of Prof Adrian's cancer program is elucidating the molecular mechanisms underlying the rapid growth and invasion of pancreatic cancer and in developing novel strategies to treat it. Prof. Adrian investigates various aspects of this cancer, including growth and differentiation signaling 0pathways, the role of the lipoxygenase pathways in tumor growth and escape from apoptosis, the interactions between pancreatic cancer cells and the pancreatic endocrine islet tissue, as well as the reasons for the severe metabolic disturbance and cachexia that accompany this devastating disease. With his collaborators, he has developed some novel therapeutic agents, one of which recently entered clinical trials. New anticancer 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, Prof Adrian and colleagues 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 cancer cells via the mitochondrial pathway. They 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. Recent studies show marked inhibitory effects of frondoside A in leukemia cells.

Little is currently known about the mechanisms of cancer cachexia, which is a major cause of morbidity and mortality in cancer patients. In collaboration with Prof Farouk Safi in the Department of Surgery and Dr Joel Malik at Weill Cornell Medical Collage in Qatar, Prof Adrian's Laboratory has been investigating early gene expression changes in skeletal muscle from patients with cancer cachexia. The studies were performed using next generation RNA sequencing (RNAseq) (Fig. 3). Early exciting findings show marked differences in gene expression. In silico analysis using the Kyoto Encyclopedia of Genes and Genomes identified grouping of genes with altered expression into different pathways (KEGG Pathways), particularly in expression of genes previously shown to be involved in various cardiomyopathies, including the ubiquitin protein degradation pathway, normal muscle contractile function, calcium signaling and metabolic pathways. These studies should shed light on the mechanisms of cachexia and pave the way for therapeutic intervention of this debilitating problem.

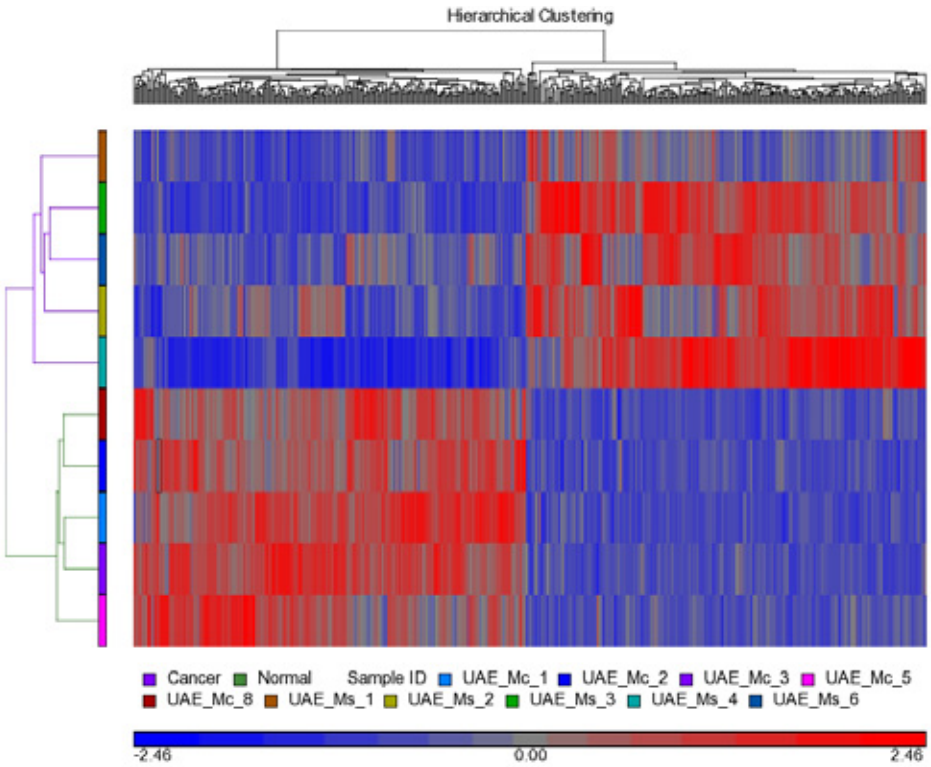

Figure 3. Heat map showing expression of individual genes (each vertical line represents an individual gene) in control patients (top panels) and patients with cancer cachexia (bottom panels). Increased gene expresison is denoted in red and reduced expresison denoted in blue.

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. Recent findings from these studies include dramatic reduction in expression of genes that encode for the crystallins (Cryaa, Cryab, Cryba4, Crybb2), lens fiber intrinsic protein 2, (LIM2) and the major intrinsic protein of lens fiber, which is an aquaporin in the retina and lens of diabetic animals (Fig. 4). Similar profiles were seen in both Zucker fatty and Goto

Kakizaki rats, which are two models of type 2 diabetes which is very common in the Gulf region. In contrast, increased expression of genes encoding osteopontin (Spp1), antileukoproteinase (Slp1), and the apoptosis-inducing protease, calpain were seen. Previous studies have linked the products of several of these genes with cataract formation and retinopathy.
In studies on dorsal root ganglia from diabetic rats, we have also seen marked changes in expression of genes involved in glutamate signaling These include marked reductions in expression of the genes that encode for the ionotropic glutamate (kainate type) receptors, GRIK3 (Fig. 5) and GRIK4. Pharmacological studies suggest that these receptors play a role in neuropathic pain.

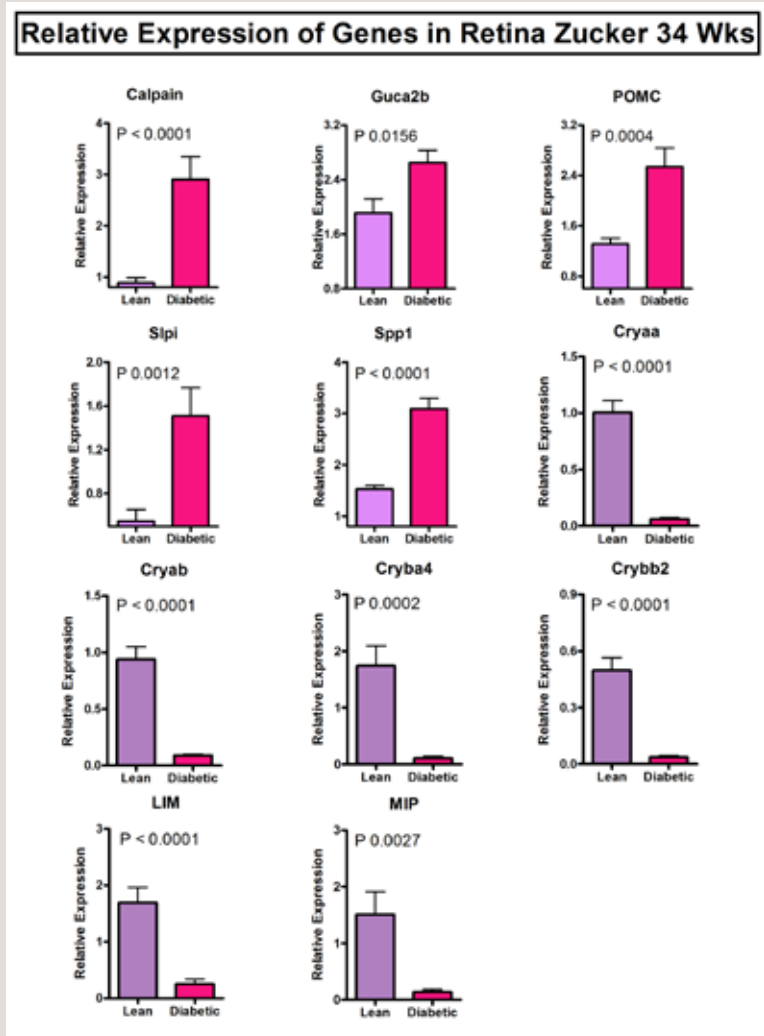

Figure 4. *Gene expression profile in the retina of lean and diabetic Zucker rats using fast real time RT-PCRs.*

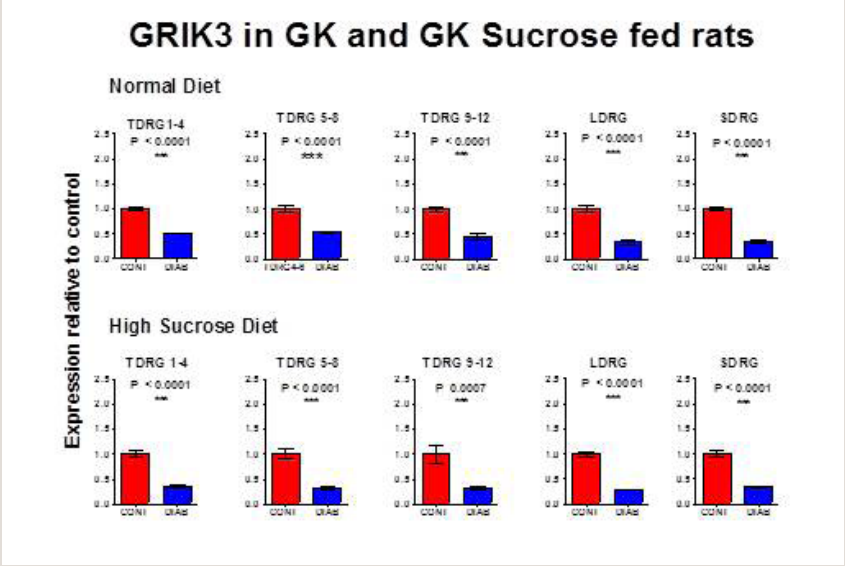

Figure 5. *Gene expression profile using fast real time RT-PCRs in GK rats fed a normal or high sucrose diet.*

Dr Tony Shmygol
Intracellular and organellar calcium dynamics.
Tony Shmygol's research focuses on elucidation of the mechanisms underlying the intracellular and organellar Ca2+ dynamics in mammalian cells with particular emphasis on voltage-gated and store-operated Ca2+ channels in smooth muscle. He is an expert in electrophysiology and live cell microscopy.

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

Dr Subramanya continues the work in the mapping area in collaboration with Prof. Lammers which has resulted in the first publication on "alcohol-induced impairment of intestine electrical activity" in digestive disease sciences and also "the location of pacemakers in the pregnant guinea pig and rats" published in American Journal of Regulatory and Integrative and Comparative Physiology.

He also has a track record of conducting research on water soluble vitamin transport in health disease. He is in the initial phase of establishing transport studies in the faculty. He has been successful in obtaining start up research funding from the university and also faculty grant at the CMHS. He is developing interdisciplinary collaboration within the college and is also in the process of collaborating at the international level.

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Al Haddad AHI, Al-Azwani EK, Mahamoud Y, Safi F, El Salhat H, Malek JA, Adrian TE. (2015). Next generation sequencing of the muscle and fat transcriptome in patients with cancer cachexia reveals novel mechanisms. J Cachexia Sarcopenia Muscle. 6: 13.

Hussain N, Parekh K, Mensah-Brown E, Howarth FC, Adrian T. (2015). Early gene expression changes in dorsal root ganglia of streptozotocin rat model of diabetic neuropathy SF1.3, UAE Graduate Research Conference, Abu Dhabi, UAE.

Iqbal T, Bidasee KR, Howarth F, Adeghate E, Singh J. (2015). Chronic type 1 diabetes mellitus induces structural changes, fibrosis and hypertrophy in the rat kidneys. Proc Physiol Soc 34 (2015) Physiology 2015 (Cardiff, UK) (2015) Proc Physiol Soc, 34, PC002.

Karim ZFA, Qureshi MA, Jayaprakash P, Parekh K, Oz M, Raza H, Adrian TE, Howarth FC. (2015). Different pattern of mRNA expression in sinoatrial node from streptozotocin-induced diabetic rat, Annual Research & Innovation Conference, UAEU.

Nemmar A, Al-Salam S, Yuvaraju P, Beegam S, Ali BH. (2015). Emodin mitigates diesel exhaust particles-induced increase in airway resistance, inflammation and oxidative stress in mice. European Respiratory Society Conference, Amsterdam, Netherlands.

Nemmar A, Al-Salam S, Yuvaraju P, Beegam S, Yasin J, Ali BH. (2015). Chronic pulmonary effects of nose-only water-pipe smoke (Shisha) exposure in mice. UAEU Annual Research and Innovation Conference, Al-Ain, UAE.

Salem K, Jacobson M, Shafiullah M, Oz M, Adeghate E, Howarth FC. (2015). Effects of pioglitazone on electrical conduction in the Goto-Kakizaki Type 2 diabetic rat hearty MF3.2, UAE Graduate Research Conference, Abu Dhabi, UAE.

Subramanya SB, Stephen B, Howarth FC, Lammers WJ. (2015). High resolution mapping reveals impairment of proximal colon spike potentials in the Goto-Kakizaki type 2 diabetic rat, Digestive Disease Week Conference, Walter E. Washington Convention Center, Washington, USA.

Proceedings, Conferences, Invited Lectures, Websites &Others

Al Haddad AHI, Al-Azwani EK, Mahamoud Y, Safi F, El Salhat H, Malek JA, Adrian TE. (2015).Whole Transcriptome Analysis in Muscle and Fat Biopsies from Patients with Cancer Cachexia Reveals Novel Mechanisms. World Congress on Cancer and Prevention Methods, Crowne Plaza Hotel, Dubai, August 27-29.

Al Haddad AHI, Parekh K, El-Salhat H, Safi F, Adrian TE. (2015). Identifying the Molecular Mechanisms of Early Cachexia Using Whole Transcriptome Sequencing in Muscle and Fat Biopsies from Cancer Patients. Fourth Emirates Oncology Conference, Emirates Palace Hotel, Abu Dhabi, November 19-21.

Al Haddad AHI, Parekh K, Al-Azwani EK, Mahamoud Y, Safi F, El Salhat H, Malek JA, Adrian TE. (2015). Using RNA-Sequencing in Muscle and Fat Biopsies from Cancer Patients with Early Cachexia Reveals Novel Mechanisms. Annual Research and Innovation Conference, United Arab Emirates University, November, 24-15.

Ferdous J, Raza H, Qureshi MA, Howarth FC. (2015). Spontaneous heart arte is reduced in streptozotocin-induced diabetic rat SF1.2, UAE Graduate Research Conference, Abu Dhabi, UAE.

Ferdous Z, Jayaprakash P, Parekh K, Qureshi MA, Adrian TE, Howarth FC. (2015). Alterations in expression of genes may partly underlie slow heart rate in streptozotocin-induced diabetic rat, P-04-04, 33rd Meeting of the European Section of ISHR, Bordeaux, France.

Howarth FC, Qureshi MA, Jayaprakash P, Parekh K, Oz M, Haider R, Thomas TE. (2015). Different pattern of mRNA expression in sinoatrial node from Goto-Kakizaki type 2 diabetic rat, Annual Research & Innovation Conference, UAEU.

Hussain N, Parekh K, Mensah-Brown E, Howarth FC, Adrian T. (2015). Early gene expression changes in dorsal root ganglia of streptozotocin rat model of diabetic neuropathy SF1.3, UAE Graduate Research Conference, Abu Dhabi, UAE

Iqbal T, Bidasee KR, Howarth F, Adeghate E, Singh J. (2015). Chronic type 1 diabetes mellitus induces structural changes, fibrosis and hypertrophy in the rat kidneys. PC002, Physiology 2015, Motorpoint Arena, Cardiff, Wales.

Karim ZFA, Qureshi MA, Jayaprakash P, Parekh K, Oz M, Raza H, Adrian TE, Howarth FC. (2015). Different pattern of mRNA expression in sinoatrial node from streptozotocin-induced diabetic rat, Annual Research & Innovation Conference, UAEU.

Ljubisavljevic MR, Maxood K, Oommen JJ, Szolics M, Filipovic S. (2015). Effects of bilateral prefrontal tDCS stimulation on motor performance in elderly subjects. 1st International Brain Stimulation Conference, Singapore.

Salem K, Jacobson M, Shafiullah M, Oz M, Adeghate E, Howarth FC. (2015). Effects of pioglitazone on electrical conduction in the Goto-Kakizaki Type 2 diabetic rat hearty MF3.2, UAE Graduate Research Conference, Abu Dhabi, UAE.

Subramanya SB, Stephen B, Howarth FC, Lammers WJ. (2015). High resolution mapping reveals impairment of proximal colon spike potentials in the Goto-Kakizaki type 2 diabetic rat, Digestive Disease Week Conference, Walter E. Washington Convention Center, Washington, USA.

RESEARCH GRANTS

CMHS New Research Grants

Profs FC Howarth [PI], E Adeghate, Drs M Jacobson, KA Salem Effects of pioglitazone, a thiazolidinedione anti-diabetic drug, on electrical conduction in the Goto-Kakizaki type 2 diabetic rat heart (2014-2015)

Profs C Howarth [PI], E Adeghate, Dr M Jacobson Electromechanical remodelling in the failing diabetic rat heart (2015-2016)

Prof TE Adrian [PI]

The effect of Frondoside A on inducing apoptosis in acute leukaemia. (2015-2016)

Prof TE Adrian [PI]
Licofelone a dual LOX/COX inhibitor for cancer.

Prof A Nemmar [PI], Ms P Yuvaraju, Ms S Beegam
Adverse respiratory effects of water pipe smoking in mice: Time-course study and influence of thymoquinone and curcumin. (2014-2015)

Dr O Bakouch [PI], Prof A Nemmar, M. Maaiz, Drs S Al Shamsi, A Al Dhanhani
The function of the glomerular filtration barrier in angiotensin-induced hypertension and STZ-induced diabetes. Experimental studies. (2014-2015)

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

CMHS Faculty Seed Grant

Dr S Subramanya [PI]
Origins and Patterns of Electrical Propagation in the isolated Rat Uterus during the course of Pregnancy

UAEU Center-based Interdisciplinary Research Grant

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

Profs YE Greish [PI], TE Adrian, A Amin
Targeting Pancreatic and Hepatic Cellular Carcinoma Stem Cells Utilizing a Novel Nanotechnology Approach. (2015-2017)

Prof A Nemmar [PI], Dr S Al-Salam, Prof BH Ali
Influence of long-term nose-only water-pipe smoking exposure on the development of emphysema in mice: mechanisms and therapeutic prospects. (2015-2017)

Drs S Al-Salam [PI], S Hashimi, Prof A Nemmar
Role of Galectin-3 in myocardial ischemia/reperfusion injury. (2015-2017)

UAEU Program for Advanced Research (UPAR) Grant

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

Prof A Nemmar [PI], Dr S Al-Salam, Prof BH Ali
The possible palliative effect of experimental exercise training with or without treatment with a natural anti-inflammatory. (2015-2017)

UAEU-Sultan Qaboos University Joint Collaboration Grant

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

UAEU National Research Foundation Grant

Prof M Ljubisavljevic [PI]
Long-term effects of noninvasive brain stimulation on food craving (Round 3)

Profs S Shehab [PI], M Ljubisavljevic
Neuropathic pain due to trauma and inflammation of the viscera

Profs YE Greish [PI], TE Adrian, A Amin.
Targeting Pancreatic and Hepatic Cellular Carcinoma Stem Cells Utilizing a Novel Nanotechnology Approach. (2015-2017)

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

Profs TE Adrian [PI], T Rizvi
Characterization of a new tumor suppressor gene. (2013- 2015)

Summer Undergraduate Research Experiences (SURE) Grant

Prof A Nemmar [PI]
Evaluation of the possible protective effects of emodin against particulate air pollution-induced impairment of vascular and cardiac homeostasis. (2014-2015)

Emirates Foundation

Profs TE Adrian [PI], JFB Morrison, A Perrin, Dr R Hennig
The expression of genes in neurons and the tissues they innervate during development of neuropathy in two animal models of type 2 diabetes and in human tissues. (Extension-2014)

Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences

Profs C Howarth [PI], M Oz, Dr KA Salem
Electrophysiological defects underlie electromechanical dysfunction in ventricular myocytes from type 2 diabetic heart. (2015-2018)

Profs TE Adrian [PI], E Mensah-Brown
TTMP in the Endocrine Pancreas. (2015-2017)

Terry Fox Fund for Cancer Research

Profs TE Adrian [PI], F Safi, Drs S Al Marzooqi, A Al Bawardi.
Isolation of human pancreatic and hepatic cancer stem cells and investigation of their eradication.

Al Jalila Foundation

Profs TE Adrian [PI], E Mensah-Brown, Dr H El Salhat
Studies on the Transcriptome of Patients with Cancer Cachexia. (2015-2017)

2015

Physiology

Standing:[from left to right]
Dr Sandeep BS, Prof M Ljubisavljevic, Prof A Nemmar, Dr A Shmygol, Mr P Rajagopalan, Mr J Oommen, Dr Balaji and Prof TE Adrian.

Seated: [from left to right]
Mr MA Qureshi, Ms NB Zaaba, Ms P Jayaprakash, Prof FC Howarth, Ms B Stephen, Ms S Beegam and Ms Priyadarshini.

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Department of Psychiatry and Behavioural Sciences

Research Profile

The Department of Psychiatry is involved in the following research areas:

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

- Mental adjustment to cancer and its relation to Anxiety and Depression among Oncology Patients at Tawam Hospital. (Dr. O. Osman, Dr. E. Emam)
- Prevalence of anxiety and depression among patients in the Primary Care. (Dr. Osman, Dr. A. Shamsan, F. Almogaddam)
- Affective and anxiety disorders in childhood and adolescence. (Dr. L. Amiri)
- Life satisfaction among older adults in UAE. (Dr. H. Moselhy)
- The association of mental disorders with unhealthy behaviours among adults in UAE. (Dr. H. Moselhy)
- Association of stress vulnerability, stress and work-related injuries in workplace settings. (Dr. H. Moselhy, S. Yousef)

Personality, psychosocial and trans-cultural aspects of physical illness

- Body image disturbance in outpatients undergoing bariatric surgery procedures. (Dr. O. Osman, E. Emam, F. Almogaddam)
- Behavioral, social and Functional morbidities among Bariatric Surgery patients in the UAE (Dr. O. T. Osman, E. Emam, F. Almogaddam, F. Torab)
- Depressive disorders as a risk factor in susceptibility to coronary heart disease. (Dr. H. Moselhy, S. Yousef)
- Relation of brain lesion and apathy, depression, cognition and daily function in stroke patients. (Dr. H. Moselhy, S. Yousef)

Cultural aspects of psychiatry

- A survey of Psychodermatology for Middle Eastern Dermatologists (Dr. OT OSMAN, F. Almugaddam)

Collaborative Research

- Adjustment to Mental Health problems Among Oncology Patients. Collaboration with Tawam Hospital psychiatry,

Professor and Chair:
Prof. HF Moselhy
Professors:
Prof. R Ghubash
Associate Professor:
Dr. OT Osman
Assistant Professors:
Dr. L Amiri
Dr. KA Aziz
Dr S Omer
Research Technicians:
Mr S Yousef
Ms. F Almogaddam
Senior Administrator:
Ms. A Al Shamsi

Psychology and Oncology services. (Dr. E.Emam, Dr. O. Osman)
- Cultural Aspects of Trauma and Recovery: A Joint partnership research project with Harvard Program on Refugee Trauma (HPRT) –Harvard Medical School and UAEU Global Health Institute (Dr. O. T. Osman, Dr. L. Nasir & Dr. R. Mollica,)
- Drug and Alcohol Abuse in the United Arab Emirates. A joint partnership with the National Rehabilitation Institute (NRC) in Abu Dhabi (Dr. O.T. Osman, A. El Kashef, I. Blair, Dr. T.C. Awe)
- Pattern of heroin use among Egyptian population: positive gate way hypothesis (H Moselhy)
- Family profile among drug user in Mansoura, Egypt (H Moselhy)
- The rate of HIV among Egyptian adults drug users (H Moselhy)
- Suicidal behavior and attitudes of Jordan's nursing students (S. Yousef, H Moselhy)
- Depression associates with factors influencing the carrier choice of Jordan's nursing students (S. Yousef, H Moselhy)
- DiAlert: a prevention program for overweight first degree relatives of type 2 diabetes patients: Emirate National -Community Based Trail (Dr. Juma Alkaabi, S. Yousef)
- Burnout among health care workers in the emirates of Abu Dhabi: Across-sectional study (H Moselhy, S. Yousef)
- Internet addiction among Intern doctors in Cairo University Hospital (H Moselhy)
- Developing novel model for clinic-biological patterns in depression from biosignal, biochemical and genetic measures. Partnership with Khalifa University (H Moselhy, S. Yousef)
- Sexual dysfunctions among opioid dependents and its correlation with level of sex hormones (Moselhy)
- Behavioral and emotional problems among young children in Abu Dhabi Emirate, UAE (Co-Investigator; PI Al-Mekaini L) (Amiri L)
- Psychiatric manifestations in children with inborn errors of metabolism (IEM), (Co-Investigator, PI Al-Jasmi F) (Amiri L)

Postgraduate Education and Training

- Arab Board Curricular development, credentialing and accreditation in General Psychiatry (Dr. O. Osman).
- Arab Board Curricular development in child & adolescent psychiatry (Dr. O. Osman)

Recent Translation, Development and Validation of Psychiatric Instruments for Use among Arabic Speaking Populations

- Mini-International Neuropsychiatric Interview (MINI) (Dr. O. Osman).

Biological Psychiatric Research

- Group IVA phospholipase A2: A potential marker for schizophrenia (Dr. H. Moselhy)
- Molecular genetic study of schizophrenia in Arab population (Dr. H. Moselhy)
- The Influence of A118G single nucleotide polymorphism of human Mu Opioid Receptor Gene and the MDR1 Gene in Egyptian patients with Tramadol Induced Seizure (H Moselhy)
- Frequency of C3435 of ABCB1 gene in patients with tramadol dependence (Moselhy)
- Whole-Exome Sequencing and Homozygosity Mapping Analysis of Emirati Families with Multiple Schizophrenic Patients (B Ali, H Moselhy)
- Radiologic findings on imaging studies among psychiatric inpatient Psychiatric population in the United Arab Emirates. (Dr. O. Osman, Dr. A. Muffadel)

Addiction Research

- Epidemiology and qualitative Characteristics of Smoking 'Midwakh; and other tobacco products in the UAE. A joint Partnership Collaborator with Abu Dhabi Health Authority (O.T. Osman)

Articles in peer-reviewed journals

Abdelazim S, Abolmagd SF, Abdalla H, Enaba DA, Elsheikh SM, Moselhy HF. (2015). Sexual Dysfunction and Sex Hormone Levels in Egyptian Opioid-Dependent Males. Am J of Pharm Health Research, 3:11. ISSN: 2321–3647(online).

El-Saadouni N , Aziz KA, El-Bahaey W, Elfotouh ZA, El-Shenawy F, Alboraie A, Shabayek H, El-Gabry DA, Moselhy HF.(2015). Dopamine Transporter Gene (SLC6A3) 3'UTR VNTRGenotype as a Marker for Subtypes of Bipolar Affective Disorder I in an Egyptian Sample. Am J Pharm Health Research 3:10. ISSN: 2321–3647(online).

Enaba D, Shalaby N, El-Baz H, Zahra A, Kishk N, Moselhy H.(2015). The Influence of A118G single nucleotide polymorphism of human Mu Opioid Receptor Gene and the MDR1 Gene in Egyptian patients with Tramadol Induced Seizure. Addict Disord and Their Treat, 14 (2): 105-112.

Ghanem Elhassani and Ossama Osman. Mental Health Profile In the United Arab Emirates (2015). BJPsych International, 12(3) p70-72.

Moselhy H, Eapen V, Akawi N, Younis A, Salih B, Othman A, Yousef S, Clarke R, Ali B.(2015). Secondary association of PDLIM5 with Paranoid Schizophrenia in Emirati patients. Journal of Meta Gene, 09/2015:5:135-139.

Moussa S, El Kholy M, Enaba D, Salem K, Ali A, Nasreldin M, Gabal M, Emad M, Moselhy H.(2015). Impact of political violence on mental health of school children in Egypt. JMH, ISSN:0963-8237.

Qassem, T., Khater, M.K., Emara, T., Tawfik, H.M., Rasheedy, D., Mohammedin, A.S., Tolba, M., Abdel-Aziz, K. (2015). Normative Data for Healthy Adults Performance on the Egyptian-Arabic Modified Addenbrooke's Cognitive Examination III (m-ACE-III). Middle East Current Psychiatry, 22:27–36.

Published Abstracts, Letters & Correspondence

Abdel-Aziz K, Aly El-Gabry D. (2015). The Neuropsychiatric Aspects of a Case of Exploding Head Syndrome. Royal College of Psychiatrists Annual meeting, Birmingham, June. (poster)

Aly El-Gabr D, Abdel-Aziz K. (2015). A Case of Hypochondriacal Disorder by proxy. Royal College of Psychiatrists Annual Meeting, Birmingham, June;. (Abstract & Poster)

Osman O, Almufadel A. (2015). Radiologic Findings Among Psychiatric Inpatients in the United Arab Emirates. 168th American Psychiatric Association Annual Meeting Toronto, Canada, May, 16-20. (2485).

Alhassani G, Osman O. (2015). Profile of Mental Health Laws in the United Arab Emirates. Presentation at the 168th American Psychiatric Association Annual Meeting Toronto, Canada, May 16-20, (2497).

Proceedings, Conferences, Invited Lectures, Websites & Others

Abdel-Aziz K. (2015). Neuropsychiatry of Traumatic Brain Injury. Al-Noor Hospital one-day symposium on the 'Interface between Psychiatry & Neurology', Abu Dhabi, UAE, May, 29. (Guest speaker)

Abdel-Aziz K. (2015). Early Intervention in Psychosis: What is the Evidence?. First Schizophrenia Forum, Abu Dhabi, UAE, November 20 (Gust Speaker).

Osman O. (2015). Therapeutic Interventions in Bipolar Disorder. Al-Noor Hospital symposium on the 'Interface between Psychiatry & Neurology', Abu Dhabi, UAE, May 29 (Gust Speaker).

Osman O. (2015). Neuropsychiatric disorders in Children. Second Annual Mental Health Campaign and Psychiatric conference organized by RAK Medical and Health Sciences University November 8 (Session Chair Panel Discussant)

Osman O. (2015). Management of Addictive Disorders. 3rd Child Mental & Behavioral Health Conference, Abu Dhabi, January, 24-28. (Session Chair Panel Discussant)

Osman O Emam E Almugaddam F Torab. Zoubeidi T. (2015). UAEU Annual Research Conference November, 24 (Presented by Dr. Zoubeei).

Osman O. (2015). Videogame Addiction advances in Assessment and Management. COG SCI Research series, The videogame Conference on Cognition, Simulation and Education. UAEU, CIT Bldg. March 24.

RESEARCH GRANTS

CMHS New Research Seed Grant
Drs. Abdel-Aziz K, (PI) S Karam, S Youssef.
Serum Ghrelin levels in Unipolar & Bipolar Disorder Patients versus Healthy controls.

UAE University Program for Advanced Research [UPAR]

Dr B Ali (PI), Prof H Moselhy
Whole-Exome Sequencing and Homozygosity Mapping Analysis of Emirati Families with Multiple Schizophrenic Patients. [2014-2017]

2015

Psychiatry

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Department of Radiology

Research Profile

All faculty members in the Department of Radiology focus on research in areas relevant to the nation's need, i.e., imaging in oncology, assessment and classification of genetic diseases and congenital malformations, neuro-imaging, thoracic imaging, imaging in infectious and cardio-vascular diseases, radio contrast media (RCM) and MRI contrast media research and basic radiological research, including animal studies, in collaboration with CMHS basic science departments and departments at other UAEU colleges and units.

Professor & Chair:
Prof RD Langer
Associate Professor:
Dr K FW N van Gorkom
Assistant Professors:
Dr KM Das
Dr T Al Mansour
Secretary:
Ms. KSM Al Kaabi

Prof. Ruth Langer's main research interest is in the field of new cross-sectional imaging modalities, such as dual-energy CT (DECT) and multi-slice computed tomography (MSCT). DECT has been recently assessed for renal stone disease and renal stone composition in the UAE (Fig. 1). Composition of renal stones in the UAE and in the Middle East is distinctive from renal stone composition in other parts of the world.

An additional field of her collaborative research interest is imaging in newborns and children with congenital malformations, skeletal dysplasias, and inborn errors of metabolism. These entities are of utmost interest in the UAE and also in the all GCC countries, due to the high prevalence of such disorders.

Prof. Langer's research interest comprises also basic research studies in radio contrast media (RCM) for CT examinations, and in gadolinium-bound contrast agents (GBCA) for MRI. The evaluation of nephrogenic systemic fibrosis (NSF), which may occur after the application of GBCA in patients with underlying renal and different other diseases, was evaluated in collaborative ani-

mal studies at the CMHS. Her research portfolio moreover includes animal studies on newly developed RCM and GBCA and their potential side effects.

She has been continuously a member of the Oncology Research Priority Group and of the Genetics Research Priority Group at the CMHS.

Dr. Klaus FW Neidl van Gorkom's main field of research and collaboration are in head and neck imaging, neuroimaging, molecular and cancer imaging. An ongoing long-term project is the local development of sophisticated neuroimaging, like fMRI, Tensor Imaging, MRI Spectroscopy (imaging in metabolic genetic diseases and tumors), perfusion-imaging (imaging for strokes and tumors), tensor imaging and functional MRI (for behavioral diseases and tumors) (Fig. 2 and 3). Dr. K. Neidl van Gorkom participates in the Neuroscience and the Cancer Research Priority Groups.

A new research project is the development of integrated interactive teaching applications for Medical Education in Radiology, providing content and reporting of the integrated learning outcome

Dr Karuna M Das' main field of interest is in the areas of cardiovascular and thoracic radiology. He has been involved in multiple research projects related to congenital heart disease and coronary heart disease. He was one of the pioneers in the studies of coronary stent analysis by computed tomography.

He has also special interest in chest radiology. In the years 2014-2015, he published several articles about the role of radiological investigations, and prediction of mortality of Middle East Respiratory Corona viruses (MERS CoV). Two typical chest radiographs are shown in Figs. 4 and 5: ground-glass opacities, peripherally located, were the most common abnormalities noted on chest radiographs in patients with MERS CoV. A higher chest radiographic score, together with a high number of medical co-morbidities and a higher age, was associated with a poor prognosis and higher mortality in patients infected with MERS CoV. Younger healthcare workers with few or no co-morbidities had a significantly higher survival rate after infection with MERS CoV.

Figure 1: *Axial DECT: right supra-vesical calculus, high-level calcium containing ureteral stone.*

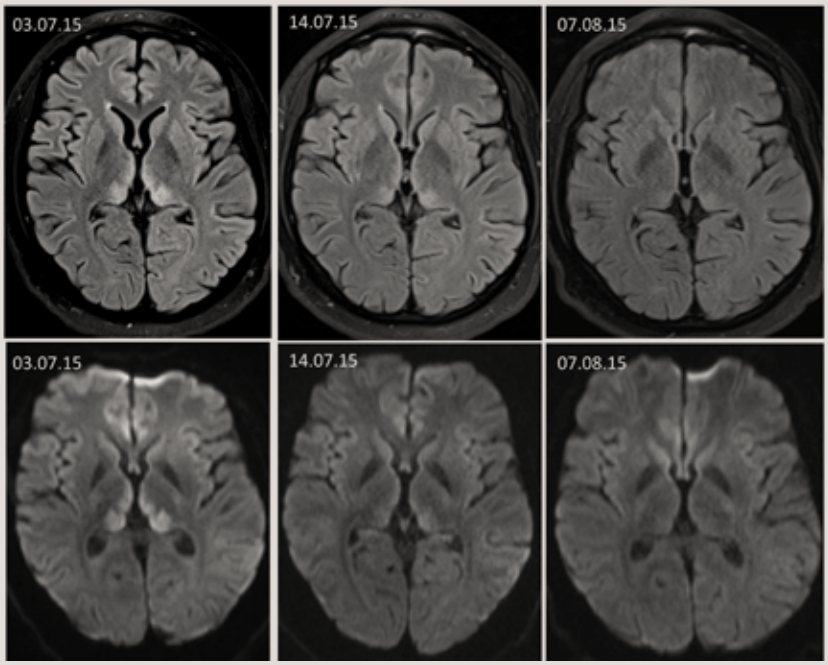

Figure 2: *Thiamin deficiency after gastric sleeve surgery for malignant obesity; upper row T2w TIRM MRI images, lower row DWI images. Left: admission with psychiatric range symptoms, typical pathologic changes in the thalamus (bright areas). Middle: after thiamin substitution improvement. Right: after 5 weeks thiamin substitution clinical reverse to normal neurologic and cognitive function, normal MRI.*

Figure 3: *Brittle bone in Carboanhydrase II deficiency. A: parenchymal calcifications. B: Radiograph: fracture of the pedicle of the 2nd vertebra. C and D: CT, fracture of the pedicle of the 2nd vertebra (see B).*

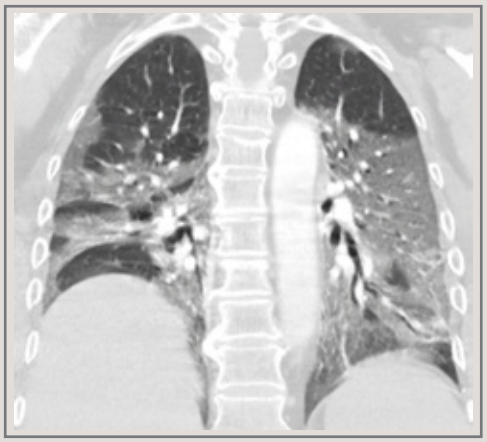

Figure 4: (left) *The frontal chest radiograph shows ill-defined ground glass type opacities along with consolidations in both lower lobes, accompanied by pleural effusions in a PCR-proven MERS-CoV patient.*

Figure 5: (rigt) *The coronal section of a chest CT shows bilateral ground glass type opacities in both lungs in a PCR-proven MERS-CoV patient.*

Articles in Peer-reviewed Journals

Neidl van Gorkom KF, Mahomoud NM, Labada F, Langer RD. (2015). Gadolinium deposition in tissuie after long-term IP GBCA injection in rats – in vitro studies. Europ J Radiol DOI 10.1594/ecr2015/C-0407

Das KM, Lee EY, Al Jawder SE, Enani MA, Singh R, Skakni L, Al-Nakshabandi N, AlDossari K, Larsson SG. (2015). Acute Middle East Respiratory Syndrome Coronavirus: Temporal Lung Changes Observed on the Chest Radiographs of 55 Patients. Am J Roentgenol, 205(3): W267-74. doi: 10.2214/AJR.15.14445.

Das KM, Lee EY, Enani MA, AlJawder SE, Singh R, Bashir S, Al-Nakshbandi N, AlDossari K, Larsson SG. (2015). CT correlation with outcomes in 15 patients with acute Middle East respiratory syndrome coronavirus. Am J Roentgenol, 204(4): 736-42. doi: 10.2214/AJR.14.13671.

Das KM, Lababidi H, Al Dandan S, Raja S, Sakkijha H, Al Zoum M, AlDosari K, Larsson SG. (2015). Computed tomography virtual bronchoscopy: normal variants, pitfalls, and spectrum of common and rare pathology. Can Assoc Radiol J, 66(1): 58-70.

Published Abstracts, Letters & Correspondence

Langer RD, Neidl van Gorkom K, Mahomoud NM, Labada F. (2015). Gadolinium Ablagerung im Gewebe nach Langzeit-intraperitonealer Gadolinium-Injektion bei Ratten – Ergebnisse von in vitro Messungen. Fortschr Roentgenstr 2015; 187: S 13.

Neidl van Gorkom KF, Mahomoud NM, Labada F, Langer RD. (2015). Gadolinium deposition in tissuie after long-term IP GBCA injection in rats – in vitro studies. EJR(S) Abstracts 2015.

Proceedings, Conferences, Invited lectures, Websites & Others

Das KM. (2015) Radiology in the Prognostic Significance of MERS CoV. 5th International Radiology Conference, Al Ain October 23-24, 2015.

Langer RD, Neidl van Gorkom KFW. (2015). Multislice CT (MSCT) in Patients with Abdominal Trauma. 5th International Radiology Conference, Al Ain, October 23-24, 2015.

RESEARCH GRANTS

SEHA Research Project

Drs A K Lutfi, JD Al Kotessh, Prof RD Langer et al. (2015). Predictors of response and complications following uterine artery embolization (UAE) of fibroids.

2015

Radiology

Standing left to right:
Dr. Karuna M Das, Prof. RD Langer, Dr. KFW Neidl van Gorkom.
(not included in the photo: Ms. Khaula Al Kaabi, Dr. Talib Al Mansour)

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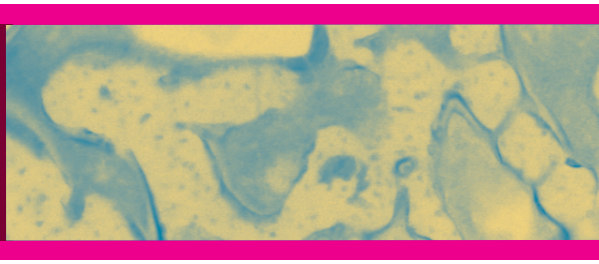
Department of Surgery



Research Profile

Faculty members in the department increased from four (1999) to twelve, seven of whom are UAE nationals (three being Teaching Assistants training overseas), with five previously advertised senior positions (breast/endocrine surgery, minimal access surgery, neurosurgery, orthopaedics and otorhinolaryngology) yet to be filled. All Faculty members have had consultant privileges at Tawam Hospital and Prof Branicki, Prof Abu Zidan and Dr Al Mahmoud have privileges at Al Ain Hospital. Prof Branicki has functioned as the Interim Head of the Surgical Institute (March 2013 to June 2015).

Professor & Chair
Prof FJ Branicki
Professors
Prof F Abu-Zidan
Prof F Hammad
Associate Professors
Dr F Torab
Dr Tahra AlMahmoud
Assistant Professors
Dr A Al Belooshi
Dr A Jawas
Dr S Al Thani
Dr Z Al Fardan
Teaching Assistants
Dr Essa Al Essa
Dr Mohamed Ali Al Ali
Dr. Khalid Al Awadhi
Research Support
Mr Loay Lubbad
Administrative Support
Ms Z Al Nasser
Mr C Aboobacker

Professor Frank Branicki
Clinical interests include the management of gastrointestinal bleeding, peptic ulcer and benign and malignant gastroduodenal disease in particular as well as acute care surgery and trauma management. Principal practice is in the management of esophago-gastric cancers. He has been an instructor for 65 Advanced Trauma Life Support (ATLS) courses, most as course director with involvement also in Advanced Trauma Care for Nurses (ATCN). These activities have generated data for presentation and publication. Collaboration with the late Dr 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 has served as the

Chair of the Undergraduate Medical Curriculum Committee (2010-2015) and Director of the Final Integrated Examination for undergraduates on completion of training. In November 2013, he acted as host for the inaugural UK overseas Joint Surgical Colleges Fellowship Examination (JSCFE) held in Al Ain and examined postgraduates for this exam in Siri Lanka in 2014. These have been professional activities in 54 countries including promulgation of ATLS to four countries which have since established their own courses (Syria, Oman, Egypt and Iran). In 2015, Prof Branicki presented invited lectures in Dubai, Mansoura (Egypt) and Khartoum (Sudan), and was a member of the International Scientific Committee for the 11th International Gastric Cancer Congress, held in Sao Paulo (Brazil).

In September 2010, he was the recipient of the Distinguished Performance Award at the College and received the University Chancellor's Inaugural Award for Institutional Excellence in the Category of Distinguished Employee in the Supervisory Field-Academic as well as the UAE University Award for Excellence in Service.

Prof Fikri Abu Zidan

In 2015, Prof Fikri Abu-Zidan continued his focused research activities in the areas of trauma management, injury prevention, 'point-of-care' critical care ultrasound (POCUS), and acute care surgery. He was effectively leading the Trauma Research Group of the CMHS till September 2013 when this transitioned to Dr Ali Jawas, Department of Surgery (CMHS).

Collaborative work continued with the Departments of Community Medicine (CMHS), and Departments of Surgery, Critical Care, and Orthopedics at Al Ain, and Al Rahba Hospitals. In 2015, Professor Abu-Zidan published 21 papers in international refereed Journals, supervised 16 abstracts, and gave 21 invited lectures in international conferences. At present, he is studying methods of trauma training, biomechanics of injury, methods of injury prevention, and 'point-of-care' ultrasound (POCUS). He collaborates with international researchers in Sweden, Italy, and the United Kingdom.

Prof Abu-Zidan serves at present as the Statistical Consultant for World Society of Emergency Surgery and the World Journal of Emergency Surgery and is the Statistical Editor for Hamdan Medical Journal. He has recently analyzed data from a global multi-centric study of more than 5500 patients, stemming from 132 hospitals and 54 countries to validate a new score for severity of sepsis (WSES sepsis severity score, Sartelli et al 2015). This new score is proving to be accurate and very useful in clinical practicel. In 2015, Prof Abu-Zidan established and conducted a two day 'hands on' Workshop for Medical Writing and another on 'Clinical reasoning for acute care physicians and surgeons'.

Prof Fayez Hammad

Prof Fayez Hammad has clinical interests in minimally invasive surgery for renal stone disease and oncology in particular. He is the founding program director for the residency training program in Urology which is currently under the auspices of HAAD (Health Authority of Abu Dhabi). In collaboration with Dr Sandeep and Prof Wim Lammers, Prof Hammad continued his work on 'slow wave conduction disturbances proximal and distal to ileal end-to-end anastomosis following ileocystoplasty'. The initial results were presented at the Annual Meeting of the American Urological Association in New Orleans, May 2015. In the field of electrical propagation, a review article "Electrical propagation in the renal pelvis, ureter and bladder" was published in Acta Physioliologica in 2015.

In collaboration with Dr Hasan Elbiss, Department of Obstetrics and Gynecology, Prof. Hammad also published in 2015 (BMC Urol) a study related to the incidence of prolapse in UAE women. This work on the social impact and healthcare seeking behavior of among women with symptoms of genital prolapse in the UAE is still ongoing with an abstract accepted for the American Urological Association (AUA) Annual

Meeting to be held in San Diego, in May 2016. In collaboration with Dr Omran Bakoush from the Department of Internal Medicine, Prof. Hammad has completed a major study investigating the effect of Diabetes Mellitus on the recovery of kidney function following ureteric obstruction. This involved serial measurements of hemodynamic status, tubular renal function and glomerular permeability for up to 30 days following reversible 24-hr unilateral ureteric obstruction in normal and diabetic rats. In addition these researchers have finished a study on the glomerular size in late streptozotocin-induced diabetes in rats, the data were recently published in Physiological Reports 2015.

In the Department of Surgery Research Lab, Prof Hammad has finished a major study on the reno-protective effects of aliskiren in a rat model of ischemia reperfusion injury, generating a second abstract accepted for the AUA meeting in San Diego.

Ongoing laboratory studies in the Department of Surgery Research Lab include the following projects: a) the effects of Alda-1 and thymoquinone on kidney function following renal ischemia-reperfusion injury in the rat b) the protective effects of Caryophyllene against renal dysfunction following ischemia-reperfusion injury in the rat and c) the effect of epigallocatechin-3-gallate on renal function in reversible unilateral ureteric obstruction. All the experimental studies are performed in collaboration with Dr. Loay Lubbad, Research Assistant in the Department of Surgery.

Associate Professor Fawaz Chikh Torab

Members of the department and colleagues at CMHS and our affiliated teaching hospitals have mourned with the family of Dr Fawaz Torab, whose sudden death in September 2015 was a tragic loss at such a young age. He was much admired and respected for his contributions to the development of Minimally Invasive and Bariatric (weight reduction) surgery in the UAE. Previously President of the Society for Laparo-Endoscopic Surgery, he was to be the officiating President of a conjoint meeting of the Society with the Mediterranean and Middle East Surgical Association (MMESA) which took place in Dubai in November 2015.

Dr Torab was appointed Associate Editor of the Journal of Minimally Invasive Surgical Science in 2012. In 2013, he was a founding member of the Gulf Obesity Surgery Society being elected as General Secretary, becoming Vice President in 2014. He was elected in 2013 as the President of the Emirates Society of the Laparoscopic-Endoscopic Surgery (ESLES) which functions under the umbrella of the Emirates Medical Association and the president of a successful annual ESLES conference that was held in October 2014 in Al Ain. He was the 'Founder', and was President of the Obesity and Metabolic Surgery Interest Group in the UAE (OMSIG) until 2014. 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. Dr Fawaz and the UAE team of OMSIG won the bid to host the world conference of IFSO in 2018 in Dubai.

His contributions as Chair of the Al Ain Medical District (AAMD) Human Research Ethics Committee (HREC) for many years had earlier been recognized by presentation of an award by the CMHS administration. This committee includes members from Tawam and Al Ain Hospitals in addition to Primary Health Care, Preventive Medicine, Zayed Military Hospital, Al Noor Hospital and Oasis Hospital. All research projects performed on human subjects or in a health institution in AAMD are reviewed and


ضوابط لتراخيص أطباء وجراحي جراحات السمنة في الإمارات

علاج مرضى السكري بعمليات تحويل مجرى المعدة

approved by this committee. His efforts on renewal of acceptance with the Federal Wide Assurance authorities in the USA were successful. This facilitates any research project carried out in collaboration with researchers in the USA. He also held membership of the Research Ethics Board of UAEU.

Dr Fawaz had been a member of the Scientific Committee for the Sheikh Hamdan Awards since 2006 and a member of the Higher Committee of Research at the Ministry of Health since 2010. He was awarded by the Undersecretary of the Ministry of Health, UAE in May 2013 in appreciation for his contribution for the establishment of bariatric surgery in the UAE.

His clinical interests were in acute care surgery, particularly pancreatitis and abdominal sepsis. A prospectively collected large database relating to bariatricl procedures he performed was accrued and Dr Fawaz pioneered, in the UAE, the use of single incision laparoscopic surgery (SILS) for various procedures.

For his contributions to laparoscopic surgery in the country and his collaboration with other regional societies, he was awarded the Honorary Minimal Invasive Surgery Fellowship of the Indian Society of Minimal Invasive Surgery in November 2014. For many years, he had 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 included clinical outcomes of primary and revisional bariatric surgery and single port procedures, experimental models of peritoneal sepsis, and experimental studies of treatment of breast cancer. In 2015, he made significant contributions with presentations nationally and at overseas meetings.

In collaboration with Prof Basel Ramadi, Chair of Medical Microbiology and Immunology (CMHS), and oncologists at Tawam Hospital, a patent has been submitted in the USA, through the UAEU for a potential new treatment strategy with studies of the effect of Manuka honey, alone or in combination with standard chemotherapy, on inhibition of proliferation and viability of an estrogen receptor-negative breast cancer cell line. Dr Fawaz was a firm friend and mentored many young aspiring surgeon, and is sorely missed.

Assistant Professor Ali Jawas

Assistant Professor Ali Jawas successfully completed residency training in General Surgery at the University of Toronto in 2004 and was appointed Assistant Professor in December 2004. Following his basic training in Vascular Surgery, he has also completed a fellowship in Toronto and rejoined us in Al Ain in October 2005. He is actively involved in the provision of vascular services in Tawam Hospital. Previously the Program Director for our Integrated General Surgery Residency Training Program, Asst Prof Jawas was appointed by the Arab Board for Medical Specialization, Damascus, Syria as their representative for General Surgery training in the United Arab Emirates. He has been a member of the Evaluation Committee for surgical training programs in different emirates. Dr. Jawas organized written examinations for the board (June, November 2014) at CMHS in General Surgery, Orthopedics, Urology and Neurosurgery, in addition, he is involved in clinical examinations. He was an Executive Board Member of the Scientific and Organizing Committee of a Hemostasis and Thrombosis Congress which took place in Dubai in 2015. Also a member of the Executive Committee of the Gulf Vascular Surgery Society, Dr Jawas was involved in the preparations for

the Bahrain International Vascular Symposium which took place in 2015. A member of the General Surgery Residency Program Advisory Committee (ACGME accredited program), he is currently Head of Trauma Research Priority Group at CMHS. He acts as a reviewer for malpractice and medical liability cases for HAAD and Dubai Health Authority.

Dr. Jawas' 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". Another compelling area of interest is vascular trauma. As an instructor he previously participated in teaching many Advanced Trauma Life Support (ATLS) Courses of the American College of Surgeons. Publication of the first article on the epidemiology of vascular trauma following road traffic collisions in the UAE was followed by articles on "Management of war related vascular injuries: experience from the Gulf War" and a "Management algorithm for blunt renal artery occlusion in multiple trauma patients". In 2013, following election, he accepted the leadership of the Trauma Group at CMHS, UAE.

Assistant Professor Tahra AlMahmoud
Promoted to Associate Professor in June 2013, Dr Al Mahmoud completed residency training in Ophthalmology at McGill University, Montreal. Fellowship training in Ottawa was concerned with diseases of the anterior chamber of the eye, and a fellowship in Uveitis at McGill was undertaken. Together with colleagues in Canada, she was involved in collaborative clinical research comparing clinical outcomes of various refractive procedures such as Advanced Corneal Surface Ablation and Femtosecond Thin-Flap LASIK. Dr AlMahmoud also has an ongoing interest in Medical Education and, in collaboration with other members of the Medical Education Research Group at CMHS, is conducting several research studies. In 2015 she presented some of these data with four posters in Dubai and in Al Ain at the UAEU Innovations in Research conference . In addition, Dr AlMahmoud is planning to continue her collaborations with the Department of Ophthalmology at Al Ain and Tawam Hospitals and has published 'A code of conduct and professionalism for residents in training.'

Assistant Professor Saeed Al Thani
Assistant Professor Saeed Al Thani completed Residency Training in Orthopedics at the University of Toronto and was appointed Assistant Professor in July 2004. Following fellowship training in 'sports injuries, hand and joint replacement surgery' at the same institution in Toronto, he rejoined the CMHS in Al Ain in January 2006 and has been able to establish a busy Sports Injuries Clinic and surgical practice in Tawam Hospital.

Dr Al Thani is President of the Emirates Orthopedic Society, Chairperson of UAE AO Chapter, and Vice President of the National Sports Medicine Committee. He is a member of World Orthopaedic Alliance and has been a member of the Scientific Committee of the Combined 33rd SICOT and 17th PanArab Orthopaedic Association meeting, hosting an Orthopaedic World Conference. Assist Prof Al Thani also holds membership of the Arab Board Examination/Licensing Committee and has been actively involved in teaching postgraduate orthopaedic surgery courses in Oman, the UAE and Switzerland. Assist. Prof Al Thani has interests in platelet rich plasma in tendinopathy management, functional outcome studies following rotator cuff repair and cruciate ligament reconstruction. He is also involved in establishing a National Total Joint Replacement Registry.

Assistant Professor Ali Abbas Al Beloushi
Assistant Professor Ali Al Belooshi completed his residency training in Toronto (Orthopaedic Surgery) after having been appointed as an Assistant Professor in 2007. He undertook an extended period of subspecialty fellowship training in lower limb arthoplasty, including revisional surgery and is actively participating in elective and emergency clinical services at Tawam Hospital. Since 2009, he has been the Coordinator for the Junior Surgical Clerkship, relinquishing this responsibility to Asst Professor Ali Jawas in June 2014.
He participated with two presentations in the International Congress for Joint Reconstruction (ICJR) meeting 2013 in Dubai. He was chairperson for the hip and knee arthroplasty section of the 2nd Emirates International Orthopedic

Congress held in Dubai with oversight of the scientific program with more than 70 local and international speakers. Asst. Prof Al Belooshi has completed an MBA and is also the Chair of the Malpractice Committee in Orthopedic Surgery for the Dubai Health Care Authority and Head of the Orthopedic 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, a Breast Reconstruction Fellowship training including experience in microvascular, surgery. Appointed Assistant Professor, he returned to the CMHS in August 2008 and is actively participating in clinical services at Tawam Hospital. Dr Al-Fardan's main interest areas are wound healing and clinical outcomes of reconstructive surgery. His principal clinical practice involves breast reconstruction and hand surgery. Dr Al-Fardan is a co-founder and academic officer for the 'Hand Surgery Club, UAE' and co-founder of the 'Abu Dhabi Plastic Surgery Club'. He has also conducted workshops for injectable fillers in GCC countries as well as being an active faculty member of AO-trauma Middle East which conducts hand surgery workshops countrywide, and an active member of the Canadian Society of Plastic Surgery. 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 presented lectures and co-chaired sessions in both Dubai and Abu Dhabi in 2015.

Assistant Professor Mohamad Al Ali
Previously appointed as a Teaching Assistant in the Department, Dr Ali undertook a short term period of training in Toronto for three months in 2007. Subsequently he completed residency training in Otorhinolaryngology at the Sahlgrenasks University Hospital, Sweden, where he undertook Fellowship training in Rhinology, recently returning to the department for definitive clinical practice.

Dr Essa Aleassa
A senior medical laboratory specialist, Mr Loay Lubbad took up appointment in the department in May 2008 and is much involved, in particular, with experimental studies of smooth muscle function conducted by Prof. Hammad.

Skills and Procedural Training
In April 2004, the department hosted inaugural back-to-back Provider and Instructor courses in the UAE for the Advanced Trauma Life Support (ATLS) with four invited faculty and staff from Canada and the USA. These courses are training Emirati graduates and others in trauma care and will help reduce the burden of permanent disabilities and mortality from motor vehicle crashes. In March 2008, CMHS was the site for inauguration of the Advanced Trauma Provider Course for Nurses (ATCN) in the UAE. These activities run in concert with ATLS courses and are made possible with the enthusiastic participation of instructors from Al Ain and Tawam Hospitals. The department has hosted more than 40 courses since 2004.

With the support of Faculty Administration, it was possible to establish a Clinical Skills and Procedural Training Centre which is a multidis-

ciplinary venture to foster training for undergraduates and particularly residents in a variety of clinical disciplines. The late Assoc Prof Fawaz Torab was the Director of the Center with basic and advanced laparoscopic courses planned in collaboration with industry who have strongly supported the project financially. Both FAST and ATLS courses are accommodated, as need be, and also courses in laparoscopic gynecological surgery and fetal ultrasonography. FAST trainers include cardiologists, nephrologists, obstetrician/ gynecologists, radiologists and surgeons. This initiative has been made possible with donations from instrument and equipment manufacturers. A number of interns and residents in the General Surgery training program have successfully completed ATLS, FAST and laparoscopic training courses.

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AlMahmoud T, Kulkarni SV, Priest D, Taylor SEJ, Mintsioulis G, Jackson WB. Long Term Visual and Refractive Outcomes Following Surface Ablation Techniques in a Large population for Myopia Correction. UAEU Annual Research and Innovation Conference 2015. November, 2015. http://conferences.uaeu.ac.ae/aric/en/.

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AlMahmoud T, Sharif E. Prolonged transient neutropenia in patients treated with adalimumab and methotrexate for Uveitis. SRC-POS-1078. 6th Annual SEHA Research Conference: December. Abu Dhabi, UAE.

AlMahmoud T, Shen Y, Adiguzel E, Cohen M, Wallerstein A. Ocular Response Analyzer Distributions of Keratoconus Match Index and Keratoconus Match Probabilites in Normal, Suspect, and Keratoconic Eyes. Poster 456. Abstract book Pg 215. American Academy of Ophthalmology (AAO) Annual Meeting. November 2015. Las Vegas. USA.

AlMahmoud T, Sherif H, Deschenes J. Adalimumab and Acute Acquired Incomitant Esotropia in a Patient Treated For Uveitis. Poster. Emirates Society of Ophthalmology | ESO Congress 2015. http://eso-congress.org/. December 2015. Dubai, UAE.

AlMahmoud T. Orbital cellulitis masking endogenous endophthalmitis in an immunocompetent patient. 6th Annual SEHA Research Conference: December. Abu Dhabi, UAE.

AlMahmoud T. Treatment of uveitis during pregnancy. The Emirates Society of Ophthalmology | ESO Congress 2015. http://eso-congress.org/. December 2015. Dubai, UAE.

AlMahmoud T. Wallerstein A, Adiguzel E, Cohen M. Visual outcomes and changes in asphericity and higher order aberrations following aspheric LASIK. Poster. The Emirates Society of Ophthalmology | ESO Congress 2015. http://eso-congress.org/. December 2015. Dubai, UAE.

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Branicki FJ. Management of Esophageal Cancer. 14th Middle East Surgery Conference. Arab Health. Dubai, UAE. January 2015.

Branicki FJ. Management of Early Complications of Gastroduodenal surgery. 40th Annual Meeting of the Sudan Association of Surgeons. Khartoum. Sudan. February 2015.

Branicki FJ. Management of Esophageal Cancer. 40th Annual Meeting of the Sudan Association of Surgeons. Khartoum, Sudan. February 2015.

Branicki FJ. Subspecialization in Surgical Practice: a Case for Risk Reduction. 40th Annual Meeting of the Sudan Association of Surgeons. Khartoum, Sudan. February 2015.

Hammad FT, Bakoush O, Lubbad L The effect of diabetes mellitus on the recovery of renal dysfunction following reversal of 24-hr unilateral ureteral obstruction in the rat. United Arab Emirates University Annual Research & Innovation Conference, Al Ain, November, 2015

Hammad FT, Lammers WJ, Rietbergen JBW, Stephen B, Lubbad L. Slow wave conduction disturbances proximal and distal to ileal end-to-end anastomosis following ileocystoplasty. American Urological Association Annual Meeting, New Orleans, LA, USA, May 2015.

Hammad FT, Lammers WJ, Rietbergen JBW, Stephen B, Lubbad L. The Disturbances of Slow Wave Conduction Proximal and Distal to the Ileal End-To-End Anastomosis Following Ileocystoplasty. United Arab Emirates University Annual Research & Innovation Conference, Al Ain, November, 2015.

Hammad FT. Approach to Obstructive Uropathy, Family Medicine Residency Program, Academic Day, Ambulatory Heath Services, Al Ain, 27 May 2015.

Hammad FT. The Role of Laparoscopy in Upper Urinary Tract. The 15th Mediterranean & Middle Eastern Endoscopic Surgery Association Congress / The 6th Emirates Society of laparo-Endoscopic Surgeon Congress. Dubai, United Arab F..Branicki. Emirates, November 2015.

Quinlan-Davidson S, AlMahmoud T, Shenouda G, Evans M, Mansour M, Edelstein C, Pond G, P.Stat, Deschênes J. Visual Acuity Outcome for Radioactive Iodine-125 Plaque Placement for Choroidal Melanoma. The Emirates Society of Ophthalmology | ESO Congress 2015. http://eso-congress.org/. December 2015. Dubai, UAE.

RESEARCH GRANTS

Grivna M, Abu Zidan, et al. Prevention of pediatric home-related injuries: A randomized controlled trial.

CMHS Research Grant

Hammad FT [PI], Lubbad L
The effect of Arabic Gum on the renal dysfunction in the obstructed kidney in the rat

F T Hammad [PI]
The outcome and complications of PCNL personal Audit. Tawam Hospital, Al Ain, UAE.

2015

Surgery

Standing left to right:
Mr Cherukunnummal Aboobacker, Prof Fikri Abu-Zidan, Prof Fayez Hammad, Dr. Saeed Al Thani, Dr. Ali Jawas, Dr Fawaz Torab

Seated left to right:
Dr. Zuhair Al Fardan, Dr. Tahra AlMahmoud, Prof Frank Branicki

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Research Priority Groups

Diabetes and Cardiovascular

Genetics and Development

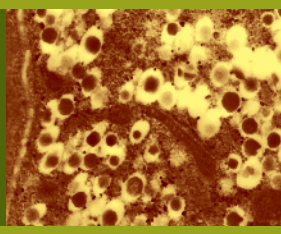
Immunology and Immunoregulation

Neurosciences

Oncology

Trauma

Diabetes and Cardiovascular Research Priority Group



Introduction
The Diabetes and Cardiovascular Research Priority Group is one of the major research priority groups at the College of Medicine & Health Sciences (CMHS). The group has a long association with the Al Ain Diabetes Research Group, Emirates Diabetes Society and the Emirates Endocrine Society.

Objectives
The aims of the group are broad and include, but are not limited to the following:
- Facilitate diabetes and cardiovascular research in the CMHS and the United Arab Emirates University (UAEU) at large.
- Enhance basic and clinical research capabilities of established diabetes investigators.
- Act as a channel for research funding.
- Act as a resource for new faculty members and for those who may want to start research in diabetes/cardiovascular diseases.
- Present scientific research at national and international scientific conferences
- Publish scientific research in national and international scientific journals.
- Cooperate and liaise with local, national or international agency with similar research interests.
- Train post-doctoral, doctoral, master's and bachelor's degree students.
- Act as a resource unit on diabetes mellitus and cardiovascular diseases.

Recent Activities
20th Annual Workshop on Diabetes Mellitus and Endocrine disorders
The DCRG organized a one-day Conference on "Diabetes Mellitus and Endocrine Disorders" on Saturday, March 21st, 2015 at the CMHS, UAEU. The Conference was well attended by physicians and health care professionals from across the country.

The symposium covered different areas of diabetes including:
- Update on the Management of Diabetes Mellitus by Prof. Hussein Saadi, Consultant Endocrinologist, Chief of the Department of Medicine, Cleveland Clinic, Abu Dhabi.

Group Members

Group Leader:
Dr Juma Al Kaabi

Members:
Prof Abdu Adem
Prof Chris Howarth
Prof Fatma Al Maskari
Prof Thomas Adrian
Prof M Agarwal
Prof El-Sadig Kazzam
Prof Salah Gariballa
Prof Ernest Adeghate
Dr Syed Mehboob Ali Shah
Dr Rajesh Mohanraj

In addition to the core members, many investigators within the CMHS are interested in experimental and clinical diabetes mellitus.

- Management of Diabetes Mellitus In Pregnancy by Dr. Bachar Afandi, Consultant Endocrinologist, Tawam Hospital, Al Ain
- The Management of Type 1 Diabetes. Impact of Science and Technology by Dr. Walid Kaplan, Consultant Pediatric Endocrinologist. Tawam Hospital
- Does drug treatment of pre and old diabetic patients' works? Time to rethink by Prof. Salah Gariballa Professor of Medicine, Chair, Department of Internal Medicine – CMHS
- Update of Obesity Management by Dr. Juma Al Kaabi, Associate Professor of Medicine & Consultant Endocrinologist, CMHS, Al Ain

Workshops on the use of insulin pumps were also conducted to familiarize nursing staff with this new technology.

Themes of research conducted by the group include the following:

- Neuropeptides and neurotransmitters in diabetes mellitus
- Trace elements in diabetes mellitus
- Immunology of diabetes mellitus
- Clinical pharmacology of diabetes mellitus
- Insulin and glucagon secretion in health and disease
- Effects of diabetes mellitus on cardiac electrophysiology and 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

Scientific Collaborations

Local

- Al Ain Diabetes Research Group
- Emirates Diabetes Society (Emirates Medical Association)
- Tawam and Jimi Hospitals, Al Ain, UAE
- Neuroscience Research Group, CMHS,UAEU.
- Faculty of Science, UAEU
- Faculty of Engineering, UAEU

International

- University of Manchester, UK
- James Cook University, Queensland, Australia
- University of Bristol, UK
- University of Leeds, UK
- University of Central Lancashire, UK
- Karolinska Institut, Sweden
- Semmelweis University, Hungary
- University of Pecs, Hungary
- University of Nebraska Medical Centre, Omaha, USA

Publications and Grants

During 2015, members published a large number of papers in international scientific peer reviewed journals and acquired grants from a variety of sources.

PhD Program

Several members of the group are involved in postgraduate studies teaching and student's supervision. Prospective PhD and MSc students are encouraged to contact of the research group. Some PhD scholarships and fellowships are available to prospective students.

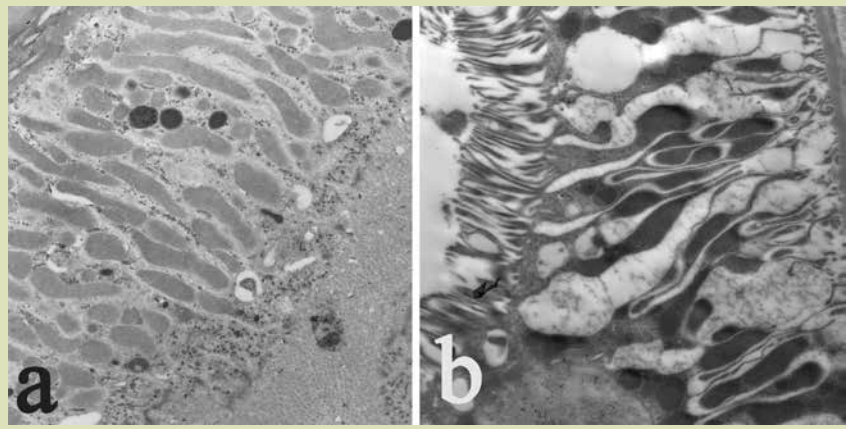
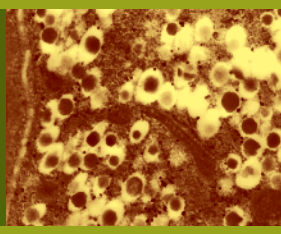


Figure. *Electron micrographs showing the proximal convoluted tubules (PCT) of normal (A) and diabetic (B) rats, 2 months after the onset of diabetes mellitus. Note that the intense vacuolirization of the PCT in diabetic rats. Magnification: X7000.*

Genetics and Development Research Priority Group



Introduction
Consanguineous marriages are prevalent in the UAE population and therefore recessively inherited single gene disorders occur more frequently in the UAE than in other populations. So far, over 200 recessive disorders have been reported. In addition, the incidence of multifactorial diseases such as type 2 diabetes, obesity, hypertension, 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 as a result of improved health care systems. The increase in the prevalence of multifactorial diseases also suggest genetic predisposition to those diseases due to the rapid changes in lifestyle, including diet.

The mission of the Genetics and Development Research Priority Group is to provide the highest quality research into the basis of genetic diseases prevalent in UAE, 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) seek new approaches to the 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.

Scientific Collaborations
Local collaborations
Ministry of Health
School Health Authorities
Sheikh Hamdan Awards for Medical Sciences
Center for Arab Genomic Studies
Central Veterinary Research Laboratory

Regional collaborations
Sultan Qaboos University, Muscat, Sultanate of Oman
King Faisal Specialist Hospital and Research Center, Saudi Arabia
Weill Cornell Medical College, Doha, Qatar
Arabian Gulf University, Kingdom of Bahrain

Group Members

Group Leader:
Dr Starling Emerald

Members:
Prof Bassam R. Ali
Prof Lihadh Al-Gazali
Prof Yousef M. Abdulrazzaq
Prof Thomas E. Adrian
Prof Keith Bagnall
Prof Salim Bastaki
Prof Sehamuddin Galadari
Prof Ruth Langer
Prof Hassib Narchi
Prof Tahir A. Rizvi
Prof Abdul-Kader Souid
Dr Fatima Al-Jasmi
Dr Ahmad Hassan Al Marzouqi
Dr Suhail Al-Salam
Dr Samir Attoub
Dr Srdjan Denic
Dr Eyad Elkord
Dr Sami Shaban

International collaborations
International Clearing House for Birth Defect Monitoring System [member]
Harvard University, USA
University of California, San Diego
Cambridge University, UK
Birmingham University, UK
University of Salford, UK
University of Manchester, UK
Imperial College London, UK
University College London Medical School, UK
National Human Genome Research Institute
National Institute of Health, Bethesda, USA
Institute of Human Genetics, Erlangen, Germany
Mount Sinai School of Medicine, New York, USA
Telethon Institute of Genetics and Medicine
Naples, Italy
UT Southwestern Medical Center at Dallas, USA
Institute fur Medizinische Genetik, Berlin, Germany
Cincinnati Children's Hospital, OH, USA
University of Ottawa, Canada
Medical University of South Carolina, Charleston, South Carolina

Publications and Grants
Please refer to the list of publications and grants for individual members of the group in their respective departments.

PhD Program
Several members of the group are involved in postgraduate studies teaching and student's supervision. Prospective PhD and MSc students are encouraged to contact the above research group leader and members in advance. Some PhD scholarships and fellowships are available to prospective students.

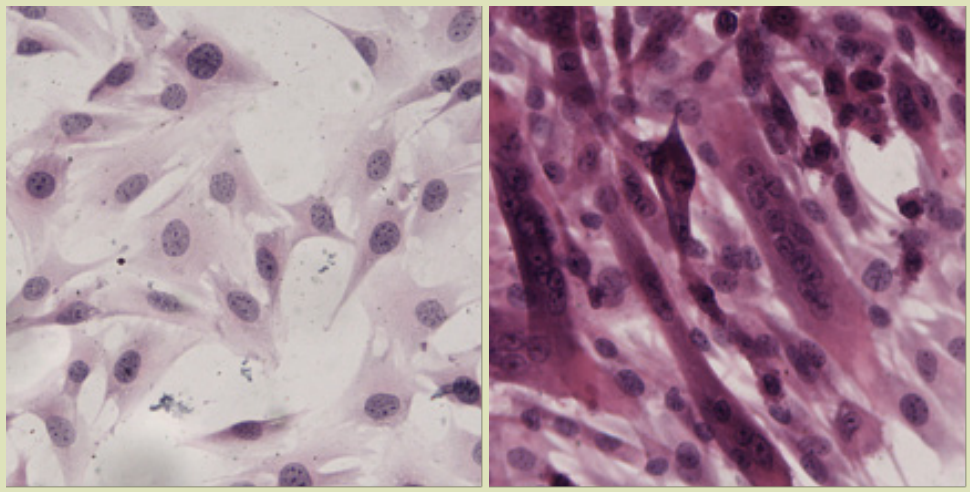
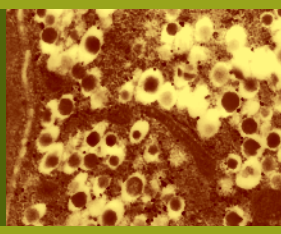


Figure. *Satellite cells undergoing differentiation*

The Immunoregulation and Infection Research Priority Group



Introduction

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 2015 the group hosted the following research seminars:

"Pulmonary Non-tuberculous Mycobacteria" by Dr. Mohammed al Houqani, Department of Internal Medicine, CMHS, UAEU. 3 February, 2015.

"Gene-environment Interactions and Host Immune Response to Malaria Infection" by Dr. Youssef Idaghdour, New York University Abu Dhabi. 2 March, 2015.

"Molecular Mechanism of Clostridium perfringens Spore Germination" by Professor Mahfuruz Sarker, Oregon State University, USA. 7 April, 2015.

"The ins and outs of Epstein-Barr virus small RNAs" by Dr. Gulfaraz Khan, Department of Medical Microbiology and Immunology, CMHS, UAEU. 25 May, 2015.

"Recent developments in antimicrobial resistance" by Professor Neil Woodford, Head, Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) Reference Unit, Public Health England, Honorary Professor of Imperial College, Queen Mary University of London and University College London, UK. 23 June, 2015.

Group Leader:
Dr. Agnes Sonnevend

Members:
Prof Basel al-Ramadi
Prof Eric Mensah-Brown
Prof Tahir Rizvi
Prof Tibor Pal
Dr Adri Prinsloo
Dr Ahmed Al Qahtani
Dr Ahmed Deemas al Suwaidi
Dr Eyad Elkord
Dr Farah Mustafa
Dr Fawaz Torab
Dr Gulfaraz Khan
Dr Maria Cabezudo
Dr Maryam Al-Shamsi
Dr Mohammed al Houqani
Dr Suhail A Al-Salam
Dr Suleiman Al Hammadi
Dr Zakeya Al Rasbi

"The role of B cells and their preclinical infiltration to the CNS in spontaneous relapsing-remitting experimental autoimmune encephalomyelitis mice" by Dr Zakeya al Rasbi, Department of Medical Microbiology and Immunology, CMHS, UAEU. 12 October, 2015.

"Of bugs and drugs – No easy prescription" by Dr Rayhan Hashmey, Deputy Chief Medical Officer, Consultant Infectious Diseases, Chair of Academic Affairs Tawam Hospital, Al Ain. 7 December, 2015.

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.

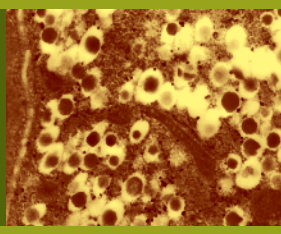
Publications and Grants

Members of the group published altogether 26 PubMed-listed publications and obtained scores of grants in 2015. Detailed list of publications and grants of each IIRPG member can be found under their respective CMHS departments.

PhD Program

Several members of the group are involved in postgraduate studies teaching and student's supervision. Prospective PhD and MSc students are encouraged to contact the above research group leader and members in advance. Some PhD scholarships and fellowships are available to prospective students.

Neuroscience Research Priority Group



Introduction
The UAE University Neuroscience Group was officially formed in 2006 by a decree from the Vice Chancellor of the UAE University.

The group consists of basic scientists and clinicians with a common interest in the nervous system. The primary goal of the group is to strengthen collaborative research ties between its members and promote neuroscience research in the UAE and the region. The group develops educational programs at the UAE University that lead to higher degrees in Neuroscience, organizes seminars, congresses and workshops, and participates in scientific activities of other groups in the field of neuroscience. Moreover, the group develops educational programs, provides professional development activities, information and educational resources for neuroscientists at all stages of their careers in the UAE and the region.

Major Achievements in 2015
In the year 2015, the members of the group presented several abstracts in national and international meetings and a number of publications have resulted from their research activities. Several members of the group received major research grants from local and international bodies, including Michael J. Fox Foundation for Parkinson Disease Research, USA, Sheikh Hamdan Award for Medical Sciences, Emirates Foundation, and several CMHS & UAE University Research Grants.

Scientific Collaborations
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 and abroad.

UAE:
Al Ain Hospital, Al Ain
Tawam Hospital, Al Ain
Central Veterinary Research Laboratory, Dubai
Centre for Arab Genomic Study, Dubai
College of Science, UAEU
Hamdan Award for Medical Sciences, Dubai
Zayed University, Dubai

Group Members

Group Leader:
Prof Abdu Adem

Core Members:
Prof Milos Ljubisavljevic
Dr Murat Oz
Dr Ossama Osman

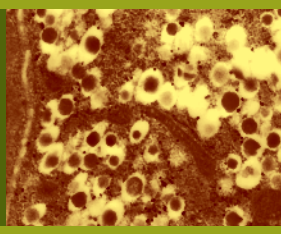
Members:
Prof Omer Al Agnaf
Prof Basel Al Ramadi
Prof Bassam Ali
Prof Chris Howarth
Prof Eric Mensah-Brown
Prof Ernest Adeghate
Prof Hamdy Moselhy
Prof Johann Braun
Prof Lihadh Al-Gazali
Prof Safa Shehab
Prof Salim Bastaki
Prof Ruth Langer
Dr Fakhreya Yousuf Hussain Mohammad
Dr Ahmed Al Marzouqi
Dr Bassem Shaban Sadek
Dr Fadwa El-Mughairibi
Dr Klaus van Gorkom
Dr Leena Amiri
Dr Maria Cabezudo
Dr Md Emdadul Haque
Dr Suhail Al Salam
Dr Rajesh Mohanraj
Dr Shreesh Ojha
Dr Gulfaraz Khan
Dr Karim Abdul Aziz
Dr Sami Ahmed Omer

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

Publications and Grants
Please refer to the list of publications and grants for individual members of the group in their respective departments.

PhD Program
Several members of the group are involved in postgraduate studies teaching and student's supervision. Prospective PhD and MSc students are encouraged to contact the above research group leader and members in advance. Some PhD scholarships and fellowships are available to prospective students.

Oncology Research Priority Group



Introduction

The Oncology Research Group (ORG) comprises colleagues at the College of Medicine & Health Sciences and the College of Sciences at UAE University, and the Abu Dhabi Health Authority (HAAD), who share an interest in oncology research. The Chair of this group is Dr Suhail Al-Salam, the Vice-Chair is Prof Frank Branicki, and Treasurer is Dr Farah Mustafa. Dr Mohammed Jaloudi, Chair of Oncology at Tawam Hospital is the Deputy Chair.

Objectives

- To promote cancer research – being a catalyst for research activity
- To create a forum for collaboration between faculty members, basic scientists and colleagues in clinical disciplines in 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 HAAD regarding cancer issues of national interest, such as breast cancer screening, cervical cancer screening, risk factors, etc.
- 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 the local and national levels
- To promote quality control in the management of patients with cancer

Scientific Activities

- Members of the group presented their work at many local and international conferences
- ORG members participated in the 4th Emirates Oncology

Group Members

Group Leader:
Dr Suhail Al-Salam

Members:
Prof Frank Branicki
Prof Amr Amin
Prof Basel Ramadi
Prof Haider Raza
Prof Ruth Langer
Prof Samir Attoub
Prof Sherif Karam
Prof Srdjan Denic
Prof Tahir Rizvi
Prof Thomas Edward Adrian
Dr Ahmed Al-Marzouqi
Dr Asma Al-Menhali
Dr Eyad Elkord
Dr Farah Mustafa
Dr Gulfaraz Khan
Dr Hassan Jaffar
Dr Inaam Bashir Hassain
Dr Maria Cabezudo
Dr Mohammed Jaloudi
Dr Nasreen Al-Khawaja
Dr Osman Mustafa
Dr Rabah Iratni

Conference which was held in Abu Dhabi during the period November 19-21, 2015.

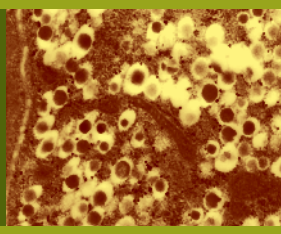
Publications and Grants

During 2015, members of ORG published 36 papers in international peer-reviewed journals and received a total of 35 research grants. Please refer to the list of publications and grants for individual members of the group in their respective departments.

PhD Program

Several members of the group are involved in postgraduate studies teaching and student's supervision. Prospective PhD and MSc students are encouraged to contact the above research group leader and members in advance. Some PhD scholarships and fellowships are available to prospective students.

Trauma Research Priority Group



Mission
Our mission is to promote and perform research and education of a high international standard in the field of trauma so as to improve patient care.

Summary
During 2015, the Trauma Group has made major contributions in trauma education and research both nationally and internationally. The members of the Trauma Group published 19 papers related to trauma in international refereed journals, and presented 38 abstracts and invited lectures at national and international meetings. Prof Abu-Zidan and Dr Hefny conducted an invited full-day Medical Writing Workshop for Emergency Medicine residents of Malaysia as part of the 4th International Clinical Conference on Emergency Medicine 2015, Kuala Lumpur. A shorter version of this workshop was conducted by Prof Abu-Zidan during the 6th SEHA Research Conference, December 2015, in Abu Dhabi.

Major achievements of the Trauma Research Priority Group in 2015 included:

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 2400 doctors have taken the Provider Course to date countrywide in UAE. We have been encouraged by the increasing support and popularity of ATLS in the UAE and the region. A greater awareness of the value of ATLS for enhancement of the early management of severe trauma is more evident in our setting.

2. ***Point-of-Care Ultrasound Training:*** We have noticed increasing support and popularity for "Point-of-Care" ultrasound in clinical practice in our setting. Professor Abu-Zidan takes special interest in teaching medical students practical skills on performing the E-FAST for detection of intra-peritoneal, pleural fluid, pericardiac fluid, and pneumothorax (Fig. 1). This assures transfer of knowledge learned to the new generation. The Rapid Ultrasound in Shocked patients (RUSH) protocol is used routinely in our clinical practice.

Group Leader:
Dr Ali Jawas

Core Members:
College of Medicine and Health Sciences
Prof Fikri Abu-Zidan
Prof Frank Branicki
Prof Michael Grivna
Prof Fayez Hammad
Prof Elsadig Kazzam
Dr Sami Shaban
Dr Mohamed Sadig

Al Rahba Hospital, Abu Dhabi
Dr Masoud Bashir
Dr Ashraf Hefny

Tawam Hospital
Dr Abdel Norueldin
Dr Masoud ur Rahman

Al Ain Hospital
Dr Mohammad Kamal Idris
Dr Saleh Abdel-Kader

National Ambulance
Dr Hani Eid

3. ***Medical Writing Workshop:*** It was deemed important to teach young researchers medical writing skills. Prof Abu-Zidan developed a two day hands on workshop on medical writing. This course could be shortened to a full day or half day course as needed. The course was first launched in Kuala Lumpur, Malaysia by invitation and was very successful (Fig. 2). Prof Fikri Abu-Zidan taught a shorter version of the course by invitation during the 6th SEHA Research Conference, December 2015, in Abu Dhabi, UAE.

4. ***Workshop on Clinical Reasoning:*** Prof Abu-Zidan developed a workshop on clinical reasoning that targeted acute care surgeons and emergency physicians. It included theories of clinical reasoning and its applications, methods of teaching clinical reasoning for clinicians followed by practical examples demonstrating its value. It was first run at the College of Medicine and Health Sciences at UAE University on June 2015.

5. ***Validation of WSES Sepsis Severity Score:*** Prof Abu-Zidan has made major contribution to a recently published global study of more than 4500 patients worldwide. As the statistical consultant of the World Society of Emergency Surgery, he analyzed data from 132 hospitals and 54 countries to validate a new score for severity of sepsis (WSES Sepsis Severity Score, Sartelli et al 2015). This new score turned out to be very accurate and practical. A prospective study is being conducted in Al-Ain Hospital to compare our local data with the global data.

Figure 1: *Prof Abu-Zidan is taking interest in teaching medical students practical skills of performing bedside Extended Focused Assessment Sonography of Trauma (EFAST) using a portable Point-of-Care Ultrasound (POCUS) machine as part of their learning experience.*

Figure 2: *Dr Asharf Hefny supervising a practical exercise of the Emergency Medicine residents at the Medical Writing Workshop conducted in Kuala, Lumpur, Malaysia, October 2015.*

Figure 3: *The Trauma Group was established in 2001. The diagram represents the publications and presentations related to trauma that were written or presented by the members of the Trauma Group, UAE University over the last 15 years.*

Publications and Grants

In 2015, the group published 19 papers related to trauma in international refereed journals and obtained numerous grants. Both quality and quantity of research has improved. Overall, the group has presented 38 abstracts and oral presentations at national and international meetings in 2015 (Fig. 3). Details of these publications and presentations are to be found in the relevant departmental reports (Department of Surgery, and Department of Community Medicine).

International Recognition

- Prof Grivna supervised a one year visit of a Fulbright scholar (2014-2015).
- Prof Grivna became a mentor for WHO Violence and Injury Prevention Program (Geneva, Switzerland) in August 2015.
- Prof Grivna was elected as a board member for WHO International Safe Community Network and became the first International Certifier for Safe Community Program from GCC (November 2015).
- Prof Abu-Zidan and Dr Hefny were invited as international speakers at the 4th International Clinical Conference on Emergency Medicine 2015, Kuala Lumpur, Malaysia.

Media coverage

Emirates News Agency SEHA Conference discusses more research papers on healthcare outcomes. December 17, 2015. *https://www.wam.ae/en/news/general/1395289347849.html*

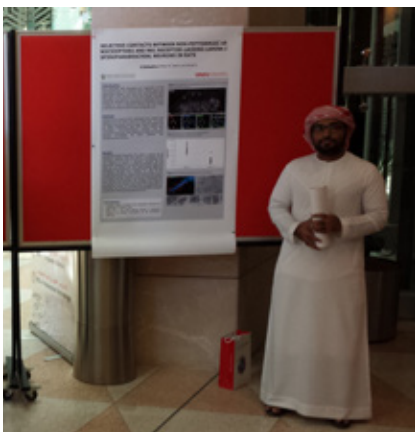
Medical Student Research

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 informed about the research interests of faculty and the special interest research groups. Planning and design of research projects, research ethics, research project funding and biostatistics are also introduced.

Opportunities for extracurricular research include laboratory attachments, summer research projects and the Dr Ali Mosawi Scholarship 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 more than 40 students were involved in research activities during the summer of 2015. The Dr Ali Mosawi Scholarship program provides opportunities for undergraduate and postgraduate students to visit UK Research Laboratories and Health Organizations. In 2015, we had 8 students in the UK at the Umea Heart Center, Luton and Dunstable University Hospital School of Clinical and Experimental Medicine, University of Birmingham and the University of Glasgow. We also had a student visit the University of Virginia, USA.

The 9th International Scientific Conference for Medical Students in the GCC Countries was held in Al Ain, December 26-30, 2014. The conference was attended by more than 1300 delegates from around 20 countries. Keynote speakers included Professor Adeeba Kamarlzaman (University of Malaysia), Professor Linda Samuelson (Michigan State University) and Dr Mohamed Al Olama (Rashid Hospital, Dubai). The program also included 36 oral and 147 poster presentations, 18 workshops, a medical exhibition and a variety of exciting social events. Abstracts from the conference have been published in Hamdan Medical Journal and can be accessed from the link below:
http://hamdanjournal.org/



Impact Factor

Impact Factors

Journal	Impact Factor
ACCESS Health	-
Lancet	45.217
Nat Geneti	29.352
J Clin Invest	13.215
Exp Med	12.515
Am J Hum Genet	10.931
Nat Commun	10.742
Biol Psychiat	10.255
Semin Cancer Biol	9.330
Brain	9.196
Nucleic Acids Res	9.112
BJPsych Int	7.991
Arthritis Rheum	7.764
Antioxid Redox Signal	7.407
J Cachexia Sarcopenia Muscle	7.315
Intensive Care Med	7.214
Chem Commun (Camb)	6.834
Am J Clin Nutr	6.770
Oncotarget	6.359
Mol Ther	6.227
Epidemiol	6.196
Crit Rev Microbiol	6.020
Free Radic Biol Med	5.736
Medicine	5.723
Clin Sci	5.598
Expert Opin Inv Drug	5.528
Pediatrics	5.473
J Cereb Blood F Met	5.407
J Antimicrob Chemother	5.313
Expert Opin Ther Tar	5.139
Sci Rep	5.078
Neurobiol Dis	4.856
Arthrit Care Res	4.713
J Urol	4.471
Int J Nanomed	4.383
Acta Physiol (Oxf)	4.382
Recent Pat Anticancer Drug Discov	4.295

Journal	Impact Factor
Osteoporos Int	4.169
Int J Biochem Cell Biol	4.046
Atherosclerosis	3.994
Bone	3.973
Alternat Med	3.833
J Nat Prod	3.798
Apoptosis	3.685
Neurotox Res	3.538
Curr Cancer Drug Tar	3.522
Cell Calcium	3.513
Am J Transl Res	3.402
J Inherit Metab Dis	3.365
Neuroscience	3.357
Am J Physiol	3.280
Valu Health Reg	3.279
PLoS One	3.234
Comp Neurol	3.225
J Comp Neurol	3.225
J Gen Virol	3.183
Diabetic Med	3.115
Drug Des Devel Ther	3.028
J Epidemiol	3.020
Appl Toxicol	2.982
Curr Vasc Pharmcol	2.966
Pancreas	2.959
Nutrition	2.926
Trends Cardiovasc Med	2.906
Cell Physiol Biochem	2.875
Food Funct	2.791
Acta Orthop	2.771
J Atheroscler Thromb	2.733
Am J Roentgenol	2.731
Pediatr Infect Dis J	2.723
Exp Mol Pathol	2.706
BMC Neurosci	2.665
World J Surg	2.642
Metab Brain Dis	2.638

Journal	Impact Factor
Eur J Pub Health	2.591
J Biomech	2.582
Digest Dis Sci	2.550
Eur J Pharmacol	2.532
Asian Pac J Cancer Prev	2.514
Sleep Breath	2.482
Mol Cell Biochem	2.393
Europ J Radiol	2.593
World J Gastroenterol	2.787
J Dermatol	2.354
J Mol Neurosci	2.343
Cardiovasc Pathol	2.336
Int J Infect Dis	2.330
BMC Public Health	2.264
Virol J	2.181
Exp Biol Med (Maywood)	2.165
Am J Med Genet	2.159
Int J Physiol Pathophysiol Pharmacol	2.154
Gene	2.138
Injury	2.137
Drug Dev Ind Pharm	2.101
BMJ Open	2.063
Appl Immunohistochem MM	2.059
BMC Neurol	2.040
Stat Med	2.037
Scand J Clin Lab Invest	2.009
Eur J Pediatr	1.983
Respir Physiol Neurobiol	1.971
BMC Urol	1.937
J Women's Health Care	1.896
Evid Based Complement Alternat Med	1.880
BMC Cardiovasc Disord	1.878
Lipids	1.854
Int J Clin Exp Pathol	1.783
S Afr Med J	1.712
Dermatology	1.685

Journal	Impact Factor
Physiol Res	1.487
Public Health	1.475
J Perinat Med	1.425
Pharm Biol	1.337
Photodermatol Photoimmunol Photomed	1.295
Prim Care Diabetes	1.289
Traffic Inj Prev	1.286
Int J Clin Exp Med	1.277
Can J Surg	1.267
Asia Pac J Public Health	1.111
World J Emerg Surg	1.062
Pediatr Surg Int	1.061
Int J Clin Pharm	1.044
J Cosmet Dermatol	1.000
Angiology	0.992
Eur Rev Med Pharmacol Sci	0.988
J Pediatr Urol	0.898
Pediatr Int Child Health	0.871
Anatol J Cardiol	0.775
Obes Res Clinc Pract	0.697
Sci Prog	0.667
Saudi Med J	0.588
Can Assoc Radiol	0.584
Ulus Travma Acil Cerrahi Derg	0.379
Int Surg	0.248
Hong Kong J Emerg Med	0.154
Addict Disord and Their Treat	-
AIDS (PLWHA)	-
Am J Pharm Health Res	-
Am J Pharm Health	-
Arch Bone Jt Surg	-
BMCSports SCI Med Rehab	-
BMJ Case Rep	-
Clin Exp Res Cardiol	-
Clin Pharmacol Toxicol	-
Edu Health	-

Journal	Impact Factor
Egypt. JMH	-
Elife	-
Evid Based Complement	-
Exp Res Cardiol	-
Front Immunol	-
Hamdan Med J	-
Hum Genomics	-
Int J Diabetes Metabol	-
Int J Inj Contr Saf Promot	-
J Ayub Med Coll Abbottabad	-
J Clin Exp Oncol	-
J Diabetes Metab Disord Control	-
J Grad Med Educ	-
J Inherit Metab Dis Rep	-
J King Saud U – Science	-
J Med Diabetes Control	-
J Meta Gene	-
J Young Pharm	-
JAMA Oncol	-
Meta Gene	-
Middle East Current Psychiatry	-
Obstet Gynaecol Res	-
Perinat Med	-
Pharmacol Ther	-
Physiol Pathophysiol Pharmacol	-
Physiol Rep	-
Proc Physiol Soc	-
Research Trends: Curr Top in Pharmacol	-
SM J Hepat Res Treat	-
SM Vaccine	-
Toxicol Rep	-
Toxicol Ind Health	-
Turk J Emerg Med	-
World J Methodol	-

مقدمة المحرر

هذا هو التقرير السنوي الخامس والعشرين عن نشر البحوث وملامح بحوث كلية الطب والعلوم الصحية بجامعة الإمارات العربية المتحدة. و يعتبر هذا العدد بمثابة جزء من سلسلة متواصلة من التقارير البحثية السنوية التي يعود تاريخها منذ أول تقرير لنا سنة 1991.

و كما جرت العادة في كل عام فقد حاولنا تطوير والحفاظ على جودة هذا المجلد وواصلنا إدراج ملامح عن الأقسام والتقارير الواردة من مجموعات الأولوية البحثية، بما في ذلك تقرير عن البحث العلمي لطلبة الطب. في نهاية هذا المجلد أرفقنا قائمة تضم المجلات التي قمنا بنشرها وعوامل تأثيرها. حافظنا في هذا المجلد على التصميم الذي قمنا باستخدامه سابقا، حيث تم تصميمه من قبل قسم الإعلام المرئي وحظي على الموافقة العامة، وفي هذا الإصدار تم اتباع التصميم الذي ينص على أسلوب موحد والتناسق في استخدام العناصر البصرية، حيث يتميز هذا التصميم بسهولة تحديد الفصول والأقسام وفئات النص.

يسرني أن اتوجه بالشكر والثناء للمساعدين الاداريين والادارات وفريق الإنتاج على جهودهم واتوجه بالشكر الخاص للسيد راجا جوبالان على جهوده في مرحلة تحرير المساهمات الأولية للإدارات والتواصل مع جميع الأعضاء خلال 12 سنة ماضية، حيث نودعه الان بعد قضاء فترة 27 سنة في خدمة كلية الطب. كما اتوجه بعميق الشكر للآنسة وفاء الشامسي على مثابرتها ونهجها لطريقة السيد جوبالان المتمثلة في التواصل مع جميع الاعضاء وتنفيذ المهام بروح الحماس في هذه السنة. واشكر السيدة إيفانا مصممة الجرافيك التي بذلت مجهودا في تصميم المجلد، ، بالاضافة الى السيد اشوك لمساهمته بتوفيرالصورالفواتوغرافية، والآنسة العنود الجابري للمشاركة والقيام بدورالترجمة.

جزيل الشكرالى جميع المساهمين في هذا الإصدار واشكر بالأخص أعضاء الهيئة التدريسية.

الدكتورة فرح مصطفى
المحررة

مقدمة مساعد العميد لشؤون البحث العلمي و الدراسات العليا

قدم التقرير السنوي للمنشورات البحثية بكلية الطب والعلوم الصحية على مر السنين صورة واضحة عن الاسهامات البحثية والمنشورات لكلية الطب التي ساهمت في تعزيز سمعة جامعة الامارات العربية المتحدة باعتبارها احدى الجامعات البحثية الرائدة في دولة الامارات والمنطقة.

تم اتاحة المزيد من الفرص البحثية من خلال العديد من المنح لتقديم الدعم ليس فقط لأعضاء هيئة التدريس، ولكن ايضا لطلبة الطب في المرحلة الجامعية والدراسات العليا. وعلى الرغم من التأخير بسبب اعمال الصيانة الجارية في المختبرات والمكاتب فقد تمكن الباحثون من تأمين عدد جيد من المنح الخارجيه و الداخليه ايضا، حيث ان تأمين هذه المنح ساعد الباحثين في الحفاظ على مستوى الانتاجية ومنحت مكافأت للذين تم نشر ابحاثهم في افضل المجلات العالمبة.

أود ان اعبر عن شكري لمكتب نائب مدير الجامعة للبحوث والدراسات العليا ومدير البحوث والمشاريع على تقديم الدعم المتواصل نحو توفير مصادر التمويل التي لا تقدر بثمن والمزيد من الدعم للتعاون في مجال البحوث الدولية.

شهد هذا العام انجازات كبيرة واختتم برحيل احدى المشاركيين في اصدار هذا المجلد السنوي طوال 12 سنة ماضية وهو السيد راجاغوبالان. أود ان أغتنم هذه الفرصة لأشكره واشكر جميع المساهمين في في هذا المجلد والأسهامات البحثية بكلية الطب والعلوم الصحية. وارغب ان اعبر عن شكري للأستاذ الدكتور باجنال محرر هذا التقرير في السنة الماضية والدكتوره فرح مصطفى التي تولت هذه المهمه في هذه السنة.
يسرني ان اعبر عن خالص تقديري للأستاذ الدكتور دينيس تيمبلتون عميد الكلية على دعمه الكبير وجهوده في خدمة الكلية ورئاسة لجنة اخلاقيات البحوث الانسانية.

الدكتورة/ مريم الشامسي
مساعد العميد للبحوث والدراسات العليا

كلمة العميد

زملائي الاعزاء

يسعدني أن أقدم التقرير السنوي لملامح بحوث وإسهامات كلية الطب والعلوم الصحية التى قام بها الباحثين عام 2015.

تحتفظ كلية الطب والعلوم الصحية بقيادتها ضمن اعضاء الهيئة التدريسية الباحثين في الدولة وجميع انحاء المنطقة. حققت كلية الطب والعلوم الصحية نجاحا بفضل اعضاء الهيئة التدريسية الموهوبين، وعلاقات بحثية انتاجية بالتعاون مع الكليات الاخرى في الجامعة والجامعات الاخرى وجهات صناعية ومؤسسات الرعاية الصحية في جميع انحاء الدولة والمنطقة. نحن نفخر بتأسيس علاقات تعاونية مع جامعات خارجية تساهم في تمكين علاقات بحثية بالإضافة الى تفعيل مهمتنا التعليمية والتي تهدف الى تبادل الطلبة وأعضاء الهيئة التدريسية.

وباعتبار كلية الطب والعلوم الصحية إحدى التسع كليات في جامعة الإمارات فهي الكلية الاولى التي تسهم في إجمالي النتائج البحثية للجامعة حيث خصصت مراكز بحثية في ابوظبي ودبي والشارقة. ونتمنى لزملائنا كل التوفيق في هذه المراكز البحثية.

اعرب عن جزيل امتناني لجميع طلبة الطب والدراسات العليا الذين لم يساهموا فقط في التقرير السنوي للإسهامات البحثية بل على البيئة التعليمية التي تعم الكلية. بالإضافة الى المتدربين العاملين في الكلية والذين يساهموا في التقدم العلمي والثقافي لتعزيز مستقبل الأمة.

يسرني أن أعبر عن شكري الخاص إلى الدكتورة فرح مصطفى والدكتورة مريم الشامسي على تفانيهم والعمل الجاد في تحرير التقرير السنوي لملامح بحوث وإسهامات كلية الطب والعلوم الصحية.

وأثني على جميع الطلبة والفنيين وموظفي الدعم الأكاديمي وأعضاء الهيئة التدريسية الذين ساهموا في إنتاج البحوث الطبية ونشرها في هذا التقرير السنوي.

إن نجاح الكلية يتحقق بفضل فريق عمل مخلص ومنتج.

الأستاذ الدكتور/ دينيس تيمبلتون
عميد كلية الطب والعلوم الصحية

المحتويات

كلمة العميد

مقدمة مساعد العميد لشؤون البحث العلمي و الدراسات العليا

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2015
المنشورات العلمية و الاهتمامات البحثية

مكتب مساعد العميد لشؤون البحث العلمي و الدراسات العليا