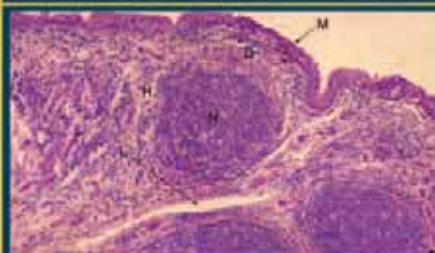
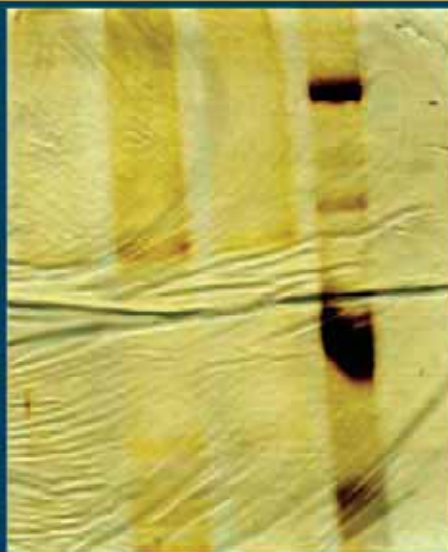
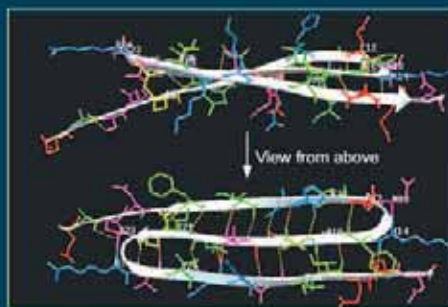




United Arab Emirates University
Faculty of Medicine and Health Sciences

Research Publications 2005 & Research Profiles





United Arab Emirates University
Faculty of Medicine and Health Sciences

Research Publications 2005 & Research Profiles

Office of the Associate Dean of Research

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Preface

This is the 15th yearly report on Research Publications and Research Profiles for the Faculty of Medicine & Health Sciences, United Arab Emirates University. This volume is a continuation of a series of annual reports, dating back to our first report in 1991.

As usual, every year, we also try to upgrade the quality of this directory and this year is no exception. We have continued to include the Departmental Profiles and the Reports from the Research Priority Groups. We also included short reports on the major conferences this year; the Neuroscience meeting and the 4th Scientific Conference for Medical Students in the GCC countries that was held in Muscat. Also included is a brief summary of the work performed by Karen Neves and Wim Lammers on the biomedical research publication record in the Emirates in the past years.

As always, it is a pleasure to thank those individuals, who have put this report together, to cater to the individual layouts and to consolidate all the sections into one book. Ms Shaikha Al Mazrouei and Mrs Ivanna Lizarriturri ably performed that work. Mr Rajagopalan, as always, took care of editing the initial departmental contribution and the communication between all parties. Mr Ashook took numerous pictures and Mr Mohamed Zaggar & Adnan Tahir took care of the translation.

Professor Wim Lammers
Editor

Professor M Lukic
Associate Dean for Research

Dean's Message

Dear Colleagues,

Once again it is my privilege to thank and commend our faculty and technical staff for a very high level of research productivity during the calendar year 2005. Thanks also to Wim Lammers for editing all of the diverse information about our grants and publications into a cohesive document that hopefully will enable the story of FMHS research efforts to be communicated effectively to all those with an interest. You, the reader, can assist us by telling us what you like and what you don't like as we strive continually to improve this annual report.

Grant sponsorship at FMHS involves a wide range of benefactors, without whom the research could not be conducted. Despite budgetary constraints, internal funding at FMHS and UAE University happily remains a priority, vital to the attraction and retention of high quality investigators. The valued contributions of external bodies such as Sheikh Hamdan Awards for Medical Science, Terry Fox Cancer Funds in Dubai and Abu Dhabi, UAE Red Crescent, Michael J Fox Foundation and the Wellcome Foundation are greatly appreciated.

Research Conferences on Diabetes and Neurosciences brought international scientists of great stature to Al Ain and were very well attended. Congratulations to the organisers! An important sequel to the Neurosciences meeting was a visit by International Brain Organisation President Professor Albert Aguayo who invited the organisers to apply for membership in this prestigious body. I am delighted to report that the application has been successful. We wish our Oncology Research Group equal success in planning their upcoming conference on Advances in Cancer.

The Master of Medical Science degree program has been accepted and should enhance research activities in both Medical Microbiology & Immunology and Pharmacology & Toxicology. Subsequent developments will hopefully include the extension of the MMedSc to include Neurosciences and Genetics which have great potential. Can a PhD program be far behind?

Student research remains a distinguishing feature of this Medical College. Our dedicated student body with their research mentors should be suitably proud of their considerable achievements. Whether 'basic science' or 'clinical', 'simple' or 'complex', the challenge of taking a research question and attempting its solution is a very special learning experience for a future physician.

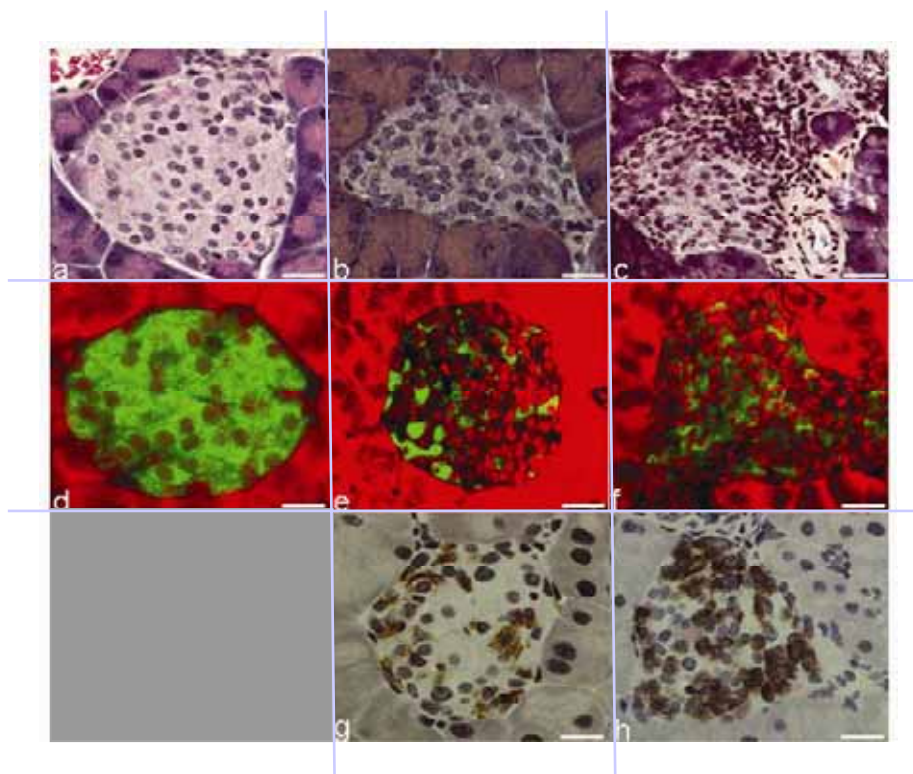
None of this would be possible without the dedicated commitment of UAE University Re-

search Affairs led by Dr. Maitha Al Shamsi and a great FMHS research administration team led by Professor Mio Lukic. Your efforts are warmly appreciated by all FMHS researchers!

It is the challenge of all good biomedical research to enhance the quality of patient care through improved diagnosis or better treatment. We must strive to enhance our clinical interface and to strengthen partnerships within and outside UAE if we are to achieve this objective. We welcome the growth of Harvard Medical International in Dubai and the recent arrival of Johns Hopkins International in Al Ain as potential allies in our research endeavours.

*S George Carruthers, MD
Dean*

Research Publications by Department



Department of Anatomy _____

Prof G Buzzell	Professor, Chairman	Mr A Gbewonyo	Technician (EM)
Prof R Padmanabhan	Professor	Mr W Wanniarachi	Technician (DR)
Prof E Adeghate	Professor	Mr RS Hameed	Technician
Prof S Karam	Professor	Ms K Parekh	Technician
Prof DE Lorke	Professor	Mr M Madathil	Technician
Dr E Mensah-Brown	Associate Professor	Ms A Rifaat	Technician
Dr S Shehab	Associate Professor	Ms L Ravindranathan	Secretary
Mr S Tariq	Technician (EM)	Ms S Lal	Secretary
Dr RR John	Technician	Ms H Ahmed	Administrative Assistant
		Mr TV Basheer	Office Assistant

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Seated: Afaf Rifaat, Soni Lal, Lakshmi Ravindranathan, Rony John.

Second row: Padmanabhan Rangaswami, Fatima Ismail, TV Basheer, Gerald Buzzell, Ernest Adeghate, Eric Mensah-Brown, Ibtisam Qassem. Third row: Sherif Karam, A Wanniarachi, RS Hameed, Armstrong Gbewonyo, Saeed Tariq, Safa Shehab, Mohammed Madathil. Photo taken April 11, 2005

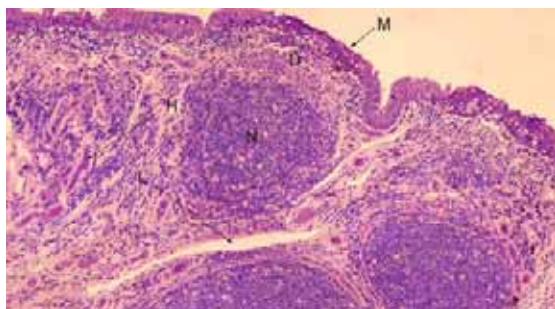
RESEARCH PROFILE

The Department of Anatomy pursues several lines of research in a variety of disciplines. We show considerable strength in the fields of neurobiology, cell renewal, teratology, diabetes, and the structure and function of glands.

Prof. R. Padmanabhan's current research focuses on mechanisms of abnormal fetal development in two major areas: (1) Neural tube defects and (2) Maternal diabetes and fetal development. Neural tube research uses mouse models of exencephaly. Exencephaly is induced by maternal treatment with sodium valproate (VPA) or hyperthermia. VPA experiments are directed at the role of supplemental folate (FA) in prevention of exencephaly. Following successful prevention of VPA-induced exencephaly in a significant number of embryos, newer efforts are directed at effects of exogenous FA administered at critical stages of neural tube formation. Recent work in this direction indicates that FA action involves homocysteine. Maternal hyperhomocysteinemia augments VPA-induced exencephaly and supplemental FA substantially limits this augmentation. Additionally the ability of VPA as a neuroteratogen seems to be determined by the pH of the dosing solution. Maternal hyperthermia-induced exencephaly is associated with intense apoptosis in the neuroepithelium which involves mitochondrial damage as revealed by electron microscopy.

Recent work on maternal diabetes on embryonic development focuses on implantation failure in the STZ model of diabetes and the rescue role of exogenous alpha lipoic acid.

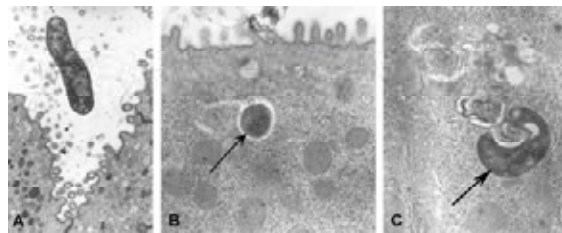
Prof. G Buzzell has continued to probe the structure and function of the nictitans gland and conjunctiva of the nictitating membrane of the dromedary camel. Recent studies have strongly suggested that the conjunctiva is a component of the mucosa-associated lymphoid tissues, with M-cells, lymphoid nodules, plasma cells, lymph capillaries, and high-endothelial venules.



Nictitans conjunctiva. D: diffuse lymphoid tissue; H: High endothelial venule; L: lymphatic, M: M-cells.

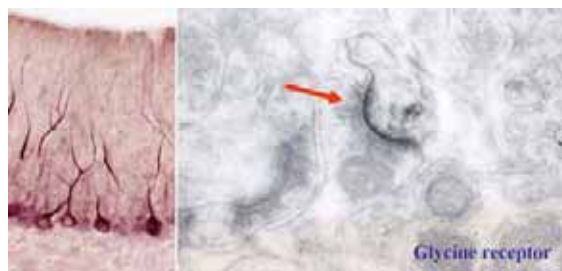
The nictitans gland produces at least one and possibly more than one glycoprotein secretions, as well as mucus which are secreted onto the conjunctival and corneal surfaces.

The aim of **Prof. SM Karam's** research focuses on some fundamental aspects of stem cell biology. The mouse gastric gland is used as a model system to study factors that control stem cell proliferation, differentiation and migration in health and disease (ulcer or cancer). Also, the epithelial cells of the rat mammary gland are investigated during carcinogenesis.



Electron micrographs showing *Helicobacter pylori* outside (A) and inside (B, C) gastric epithelial progenitor cells.

Prof. DE Lorke's main research activities are in the area of neuroembryology. He studies developmental changes in the expression of neurotransmitters (GABA, catecholamines), of receptors (glycine receptor, nicotinic acetylcholine receptor, NMDA receptor, estrogen receptor-related receptor) and of functional parameters (functional MRI, c-fos) in different brain regions (cerebral cortex, cerebellum, hippocampus, brain stem) of rodents and humans. Together with his collaborators in Hamburg, he has been able to show that the transcription factor Nkx6.1 is not only required for the early specification of cranial motoneuron progenitors, but also controls their migration and axonal pathfinding. He and his colleagues in Hong Kong have demonstrated that exposure to sound during early life profoundly alters transmitter expression in the aging auditory midbrain. He also analyses altered brain development in mutant mouse strains, including knock-out mice, and investigates, how the spinal cord of mutant mice reacts to injury.



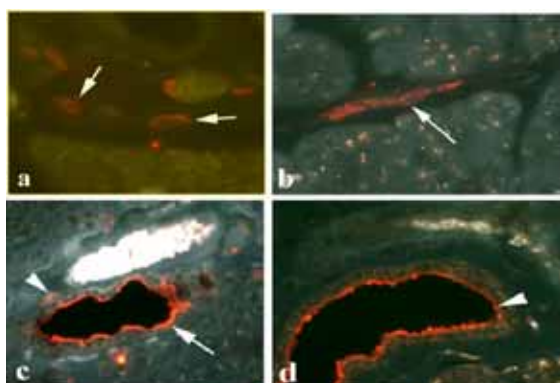
Expression of inhibitory glycine receptor in the murine cerebellar cortex at the light microscopical (left) and electron microscopical (right) level. Note immunoreactive synapse (arrow) next to unlabeled synapse.

In addition, he is involved in cooperative clinical research, performing experimental studies on the development, imaging and therapy of malignant tumours and on the morphological basis of injuries of the musculoskeletal system.

Dr. S Shehab studies the reorganisation of the neuronal circuitry in the dorsal horn of the spinal cord after peripheral nerve section. His findings do not support the notion that peripheral nerve section causes sprouting of either injured or adjacent uninjured primary afferents in the dorsal horn. He is currently investigating the pain pathways that are likely to be critical in the production of the neuropathic pain. He is also investigating the role of the basal ganglia in suppressing epileptic seizures. His recent findings showed that the subthalamic nucleus might not have critical role in suppressing tonic seizure. He is currently investigating whether high frequency stimulation of substantia nigra can produce anticonvulsant effects using an animal model of epilepsy.

Dr. E Mensah-Brown's research interests this year have been on the mechanisms underlying autoimmune type I diabetes using the model of multiple low doses of streptozotocin and the complications of diabetes of the urogenital system following a single large dose of STZ. Together with his collaborators in the Medical Microbiology and Immunology Department, they have shown for the first time the role of T cell derived interleukin 17 after the administration of IL-23 in type I autoimmune disease at the level of the target tissue, the pancreas. As in previous years Dr. Mensah-Brown has continued his studies on the experimental allergic encephalomyelitis in the DA and AO rats.

Prof. E Adeghate's major research interest is on the effect of pancreas transplantation on the metabolic parameters in experimental diabetes.



Immunofluorescence images of ghrelin- and GHS-R immunoreactivity in the lacrimal glands of normal and diabetic rats. Ghrelin is present in the periacinar and interlobular connective tissue cells and nerves (arrow) of the lacrimal glands of normal (a) and diabetic (b) rats. GHS-R is localized to the apical region of ductal cells (arrow, arrow head) of the lacrimal glands of both normal (c) and diabetic (d) rats. X400.

He also examines the role of neuropeptides on insulin and glucagon secretion from the pancreas, especially in diabetic condition. Recent results from his laboratory showed that ghrelin is present in the neural elements of the lacrimal gland of both normal and diabetic rats. In addition GHS-receptors are located in the lacrimal duct of both normal and diabetic rats. This observation showed that ghrelin may play a role in the modulation of lacrimal gland function.

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Shehab S, Spike R, Todd A. (2005). Evidence against sprouting of intact myelinated primary afferents of sciatic nerve following the injury of adjacent peripheral nerves in rats. *Emirates Medical Journal*, 23(Suppl 3):96-97.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES, ETC.

Buzzell, GR. (2005). A slide scanner to obtain images of stained sections for teaching histology. Asia-Pacific International Congress of Anatomy, Kuşadası, Turkey.

Buzzell, GR. (2005). The third eyelid conjunctiva and nictitans gland of the dromedary camel, *Camelus dromedarius*. Asia-Pacific International Congress of Anatomy, Kuşadası, Turkey.

Karam SM. (2005). New insights into the progenitors of gastric glands, The 10th International Proton Transport Conference, FASEB, San Diego, USA.

Karam SM. (2005). New insights into gastric epithelial stem cells. Sixth Annual UAE University Research Conference, Al Ain.

Lukic ML, Mensah-Brown E, Shahin A, Liew FY. (2005). ST-2-deficiency make resistant mice susceptible to the induction of MLD-STZ diabetes. The 8th meeting of the Immunology of Diabetes Society, Awaji Island, Japan

Mensah-Brown EPK, Morrison JKB. (2005). Histological and neurochemical studies on an animal model of type II diabetes. Sixth Annual UAE University Research Conference, Al Ain.

Mensah-Brown EPK, Shahin A, Al Hakim A, Lukic ML. (2005). IL-23 leads to diabetes after treatment with subdiabetogenic multiple doses of streptozotocin. The 8th meeting of the Immunology of Diabetes society, Awaji Island, Japan.

Padmanabhan R, Shafiullah M, Benedict S. (2005). Exogenous homocystine augments sodium valproate-induced exencephalus in the mouse. Sixth Annual UAE University Research Conference, Al Ain.

Padmanabhan R, Shafiullah M, Tariq S, Noura M. (2005). Neural Tube Defects (NTD): A Mouse Model of Hyperthermia-Induced Exencephaly. Sixth Annual UAE University Research Conference, Al Ain.

Shehab SAS. (2005). Inhibition of subthalamic nucleus with muscimol does not suppress tonic seizures in the maximal electroshock model of epilepsy. Sixth Annual UAE University Research Conference, Al Ain.

RESEARCH GRANTS 2005

FMHS Grants

Prof E Adeghate (PI), Mr Hameed RS.

Pattern of distribution and effect of orexins and their receptors in pancreatic islet cells of normal and diabetic rats.

Profs GR Buzzell (PI), Conlon JM.

Nictitans glands of the camel.

Prof SM Karam (PI)

Role of trefoil factor I in the development of gastric glands.

Prof R Padmanabhan (PI)

Neural tube defects-Effects of L-carnitine supplementation on valproic acid (VPA)-induced exencephaly in mouse embryos.

UAE University Grants 2005

Prof GR Buzzell (PI)

Studies on orbital glands in the dromedary camel.

Prof SM Karam (PI)

Does cigarette smoke affect stem cell dynamics in the stomach.

Prof R Padmanabhan (PI)

Studies on developmental toxicity of Topiramate in the mouse.

Terry Fox Research Grants 2005

Prof SM Karam (PI)

Studies on normal & cancerous gastric epithelial cells

Hamdan Award Medical Research Grant 2005

Profs R Padmanabhan (PI), Abdulrazzaq YM, Dr Bastaki SM

Reproductive toxicologic studies on topiramate in the mouse

Prof ML Lukic (PI), Dr EPK Mensah-Brown, Mr A Shahin, Dr M Al Shamsi

Role of Galectin-3 in the induction of inflammatory autoimmunity: an analysis of experimentally induced type-I diabetes.

Other Grants

Prof SM Karam

Travel grant – International Union of Physiological Sciences, FASEB, USA.

Department of Biochemistry

Prof J M Conlon	Chairman, Professor	Dr M Patel	Senior Laboratory Tech.
Dr H Raza	Professor	Ms M Panteva	Senior Laboratory Tech.
Dr S Galadari	Associate Professor	Mr M Qureshi	Laboratory Technician
Dr O M El-Agnaf	Associate Professor	Ms E Rahman	Laboratory Technician
Dr A H Al-Marzouqi	Assistant Professor	Mr A Qader	Laboratory Assistant
Dr F Mustafa	Assistant Professor	Ms N Al-Gafari	Laboratory Technician
Dr M J Fernandez	Teacher Outside Faculty	Ms M John	Laboratory Technician
Cabezudo		Ms G Jenaibi	Secretary
Dr M T Al-Ali	Adjunct Assistant Professor	Mr TV Basheer	Office Assistant

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Standing left to right: S. Galadari, J.M. Conlon, A. Qader, O.M.A. El-Agnaf, H. Raza, A.H. Al-Marzouqi.
Seated left to right: M. Patel, M. Panteva, A. John, M. Fernandez-Cabezudo, F. Mustafa, M. Qureshi, T.V. Basheer

The year 2005 has seen more stability and less turnover of the members of the Biochemistry Department than in previous years. Dr Farah Mustafa, who has worked as a volunteer for several years in the Department of Medical Microbiology at F.M.H.S., was appointed to the position of Assistant Professor. Professor Kate Hammond has returned to the University of Witwatersrand, South Africa.

RESEARCH PROFILE

Molecular toxicology and chemical carcinogenesis (Prof. H. Raza)

Research Interest: My research is focused on oxidative stress, drug metabolism, diabetes and cancer etiology and pathology using animal, cell culture and molecular models. I have developed international collaborations in these areas and plan visit University of Pennsylvania, Philadelphia, USA to complete research projects there in this summer. I am also investigating the preventive effects of dietary antioxidants on oxidative stress related molecular complications in cancer cells.

Research Highlights: In our recent publications, we demonstrated how cellular compartmentalization affects and regulates oxidative stress related metabolism and complications in cells including in cancer cells. We have also demonstrated that mitochondrial redox and respiratory functions are playing a key role in oxidative stress-related complications. Identification of novel mechanisms of mitochondrial oxidative stress and antioxidant defense metabolism is the main highlight of our research. My recent collaboration with Dr Ralf Morgenstern at the Karolinska Institute has resulted in a comprehensive publication relating to bioinformatics and phylogenetic evolution of microsomal glutathione S-transferase and the MAPEG family of enzymes involved in oxidative stress.

Molecular pathways governing T lymphocyte activation and function (Dr. M.J. Fernandez-Cabezudo)

The activation of T lymphocytes involves a complex array of protein-protein interactions that culminate in the induction of specific functions. Key players in this pathway are a group of Src-family tyrosine kinases. The dominant tyrosine kinase in T cells is Lck. We are interested in studying the mechanism by which Lck regulates T cell function. Overexpression of Lck is associated with development of T cell lymphomas, whereas Lck deficiency leads to cell arrest and death.

Research Highlights: Previous studies performed in our laboratory demonstrated that the absence of Lck results in cell cycle arrest and apoptosis in non-transformed T lymphocytes. During this year, we characterized the molecular mechanism responsible for this programmed cell death. The induction of apoptosis takes place via the intrinsic cell death pathway and is associated with the release of cytochrome C from the mitochondria and activation of caspases 9 and 3. Subsequently, this leads to DNA damage and the activation and stabilization of the tumor suppressor p53. We also observed that Lck-deficient T cells expressed significantly reduced levels of Bcl-2, but the same amount of Bax protein, a pro-apoptotic mediator. It seems that lack of Lck in T cells has a detrimental impact on mitochondrial integrity in a Bax-independent manner.

Mechanisms of transcriptional regulation by chromatin-modifying complexes (Dr. A. H. Al-Marzouqi)

The overall goal of my research is to understand the basic concepts of how genes are controlled and how that affects cancer development. Our genome is under the control of multiple mechanisms. One of them is the control of the packaging of the DNA in our cells and involves the chromatin remodeling (protein) complexes. Defaults in these proteins lead to the development of cancers such as leukemias and lymphomas and some others. These protein complexes have been found to interact with some known tumor suppressors and oncogenic proteins showing that the chromatin remodeling is important for cell regulation. We have been studying interactions between these modifying complexes to understand its implications in the regulation of genes, which might lead to cancer formation. These findings might be used to help cure some types of cancers in the future.

Research highlights. 1. Determination that the Swi2/Snf2 bromodomain is not required for activity of the SWI/SNF complex on unmodified nucleosomes.
2. The Swi2/Snf2 bromodomain is important for the remodeling and octamer transfer activities of the SWI/SNF complex on SAGA-acetylated nucleosomes.
3. The Swi2/Snf2 bromodomain is partially required for the displacement of SAGA bound to acetylated nucleosomes

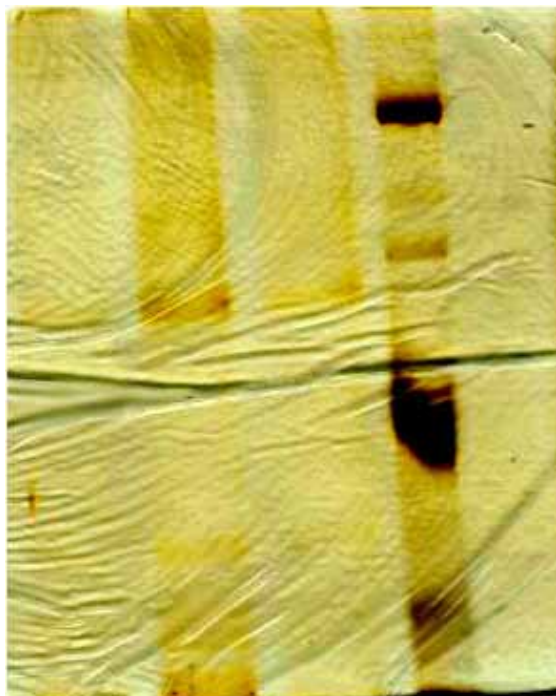
Cellular regulation and signal transduction pathways in health & disease (Dr. S. Galadari)

Normal cellular function is dependent upon an array of intracellular communication pathways. Cells need to receive signals and send signals, and in that way they communicate with one another

and with their environment at the molecular level. This is achieved by an intricate network of enzymatically regulated biochemical signal pathways prone to regulation by specific messages. If one or more of these enzymes are abrogated or over subscribed, then disease is set. Indeed, this is what happens at the molecular level of diseases such as cancer, where normal cell growth runs out of control due to over subscription of the growth signaling pathway that results following deregulated activity of some enzymes in that pathway, thus leading to tumor formation.

The Cell Signaling Laboratory is engaged in identification and characterization of these enzymes that regulate these signal pathways, a pre-requisite to the development of therapeutics. Therefore, once the enzyme is identified, purified and its mechanism of action is characterized, specific drugs can then be developed in order to cure and correct the disease caused by that step in the pathway.

Research Highlights: We are using biochemical techniques to characterize neutral ceramidase enzyme which is responsible for the breakdown of ceramide and production of sphingosine, and sphingosine-1 phosphate. Moreover, we are investigating the role of different signaling molecules in environmental stress response.



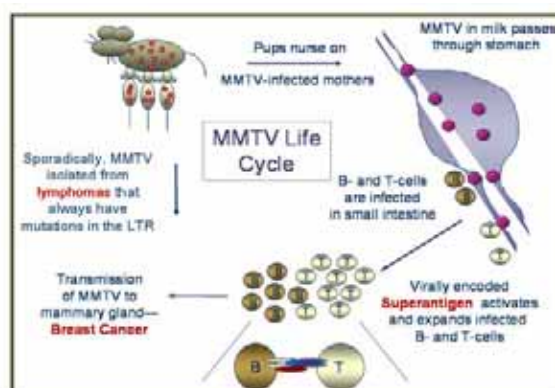
Silver staining of ceramidase protein in cell culture.

Molecular basis of pathogenesis and novel gene-based therapies (Dr. F. Mustafa)

My research interest lies in the area of molecular basis of disease and development of innovative

approaches to therapy. Towards this end, I have extensively used retroviruses as model systems. Retroviruses are well-known pathogens that cause debilitating diseases such as immunodeficiency syndromes and a variety of cancers in both man and animals. Our recent focus has been on studying the fundamentals of retroviral RNA packaging into the virus particle and how this process can be exploited to develop better vectors for gene delivery into mammalian cells. These studies have resulted in the mapping of the packaging determinants of some important retroviruses such as Mason-Pfizer monkey virus (MPMV) and feline immunodeficiency virus (FIV). In my new role as an independent investigator, I would like to extend these studies to identify the packaging determinants of mouse mammary tumor virus (MMTV) since MMTV represents a retrovirus with a very different assembly process than those displayed by the type C retroviruses such as FIV or its human and simian counterparts, HIV and SIV. Additionally, I would like to investigate how MMTV can be used as a model system to study tumor development and progression for both breast cancer and leukemia, two very different cancers caused by the same virus, and how these processes could be modified by steroids and their antagonists as possible future therapeutics. Finally, I would like to extend the experience gained from these studies to other non-viral disorders, such as the neurodegenerative disorder Alzheimer's, to study the molecular basis of its pathogenesis.

Research Highlights: Last year, the focus of research was on characterizing the nature of the packaging signal of FIV. FIV is one of the choicest viral vector systems being studied for use in delivery of therapeutic genes in human gene therapy.



Life cycle of the mouse mammary tumor virus (MMTV), a retrovirus that causes both breast cancer and leukemia in mice. The milk-borne route depicts the "exogenous" transmission of the virus from the mother to the child, while the virus can also be transmitted via the germ line as an "endogenous" virus (figure adapted from J. P. Dudley, University of Texas at Austin, USA).

Several specific regions of FIV have been mapped as potential packaging determinants, but it has not been clear which regions served as the core packaging determinant. Using a systematic analysis of the various FIV packaging determinants mapped, our work has shown that FIV has a bipartite packaging signal that serves as the core determinant. We have further shown that a large stem-loop within this region may serve as the principle packaging determinant at the structural level. Studies are in progress to confirm these findings.

Protein Misfolding and Neurodegenerative Diseases (Dr. O. M. A. El-Agnaf)

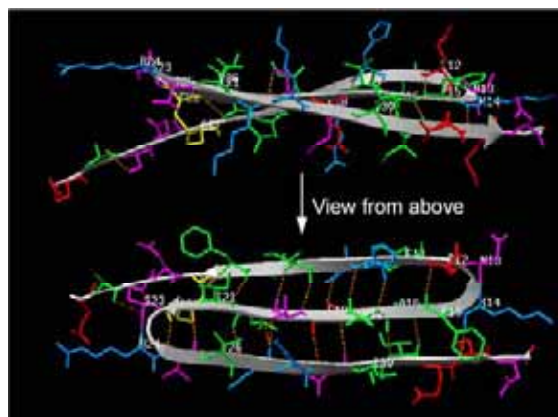
Pathological studies in human neurodegenerative diseases such as Alzheimer's disease (AD), Parkinson's disease (PD), dementia with Lewy bodies (DLB), the prion dementias (e.g. mad cow disease and its equivalent, CJD, in humans), British dementia and Huntington's disease, have revealed abundant protein deposits ('amyloid') in the affected neurones. There is now substantial evidence from molecular genetics, transgenic animal and the biochemical studies to suggest that the conversion of these amyloid proteins from soluble monomers to aggregated, insoluble forms in the brain is a key event in the pathogenesis of these diseases. This led us to hypothesize that small molecules that can block and/or reverse amyloid protein aggregation, particularly in its early stages, would provide an attractive therapeutic approach for targeting the underlying disease progression of neurodegenerative disease.

Our research is concerned with the mechanism of formation and deposition of protein aggregates in these various diseases, and on the potential relationship between protein aggregation, neurodegeneration and cell loss. We are also very interested in novel approaches to improved diagnosis and therapy of these diseases. A further aspect of our research is the development of novel techniques for detecting amyloid aggregates, particularly in their early stages.

We are assessing these methods for the detection of aggregated forms of Ab and α -synuclein in CSF and plasma samples from AD, PD and DLB patients as an aid to diagnosis of these diseases. Our work also involved in the development of peptide and non-peptide inhibitors of amyloid aggregation and toxicity as potential novel therapeutics for these neurodegenerative diseases.

Research highlights: We have recently developed a novel ELISA assay that specifically recognizes the oligomeric species of α -synuclein and we used this

ELISA for high-throughput screening for inhibitors of α -synuclein oligomerization as potential novel drugs for PD, prior to evaluation in rodent or nonhuman primate models of PD. Using this ELISA we identified the antibiotic rolitetracycline and its derivatives as potent inhibitors of α -synuclein oligomerization. Furthermore, our efforts in searching for novel drug for PD have led to the recent development of the first peptide-based inhibitors of α -synuclein aggregation and neurotoxicity.



A molecular model of amyloid peptide ABri implicated in British dementia. Secondary structure predictions, β -strand register and β -turn predictions, place ABri in a three stranded β -sheet conformation connected by type I β -turns.

Peptide-based antimicrobial agents (Prof. J.M. Conlon)

The emergence of pathogenic microorganisms with resistance to commonly used antibiotics has necessitated a search for new sources of antimicrobial drugs. Bactericidal and fungicidal peptides synthesized in granular glands in the skins of certain frogs represent a promising source of such potential therapeutic agents. Peptides from a wide range of frog species are under investigation and synthetic analogues of the naturally occurring peptides with increased antimicrobial potency but with decreased toxicity towards mammalian cells are being studied.

Research Highlights: During the breeding season of the mountain chicken frog *Leptodactylus fallax*, fighting between males results in the emergence of dominant animals that subsequently attract females to nesting sites. A peptide, termed Leptodactylus Aggression-Stimulating Peptide (LASP), was isolated from norepinephrine-stimulated skin secretions from male specimens of *L. fallax* that was not present in skin secretions obtained from females.

The primary structure of the peptide was established as: Gly-Leu-Trp-Asp-Asp-Leu-Lys-Ala-Ala-Ala-Lys-Lys-Val-Val-Ser-Ser-Leu-Ala-Ser-Ala-Ala-Ile-Glu-Lys-Leu.NH₂. LASP had no pheromone-like action on females but had a chemoattractive effect on males and stimulated aggressive behav-

ious, such as rearing and leaping. It is suggested that this peptide may play an important role in initiating the competitive male-male interactions that are associated with the onset of reproductive behavior in *L. fallax*. An antimicrobial peptide, termed fallaxin, was also isolated from skin secretions of both male and female frogs.



The Sumo wrestlers of the amphibian world Typical aggressive rearing behavior of male specimens of the mountain chicken frog *Leptodactylus fallax* during the breeding season.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

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BOOKS, CHAPTERS, REVIEWS, EDITORIALS

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PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Hassan AH, Prochasson P, Workman JL. (2005). The Swi2/Snf2 bromodomain is required for the functional activity of SWI/SNF on acetylated nucleosomes. *Bio-science2005*, Glasgow, Scotland.

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Galadari S. (2005). What is cancer and why study it? Higher Colleges of Technology, Abu Dhabi Women's College, Abu Dhabi, UAE

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Ghazawi A, Mustafa F, Jayanth J, Phillips PS, Ali J, Rizvi TA. (2005). Relative Contribution of Sequences at the 5' and 3' end of the FIV Genome Towards RNA Packaging. Annual Retrovirus Meeting of the Cold Spring Harbor Laboratory, New York, U.S.A.

Iwamuro S, Ohnuma A, Yamaguchi K, Kawasaki H, Conlon JM. (2005). Expression of temporin antimicrobial peptide genes in the skin of metamorphosing larvae and induction by thyroid hormone in the Japanese mountain brown frog *Rana ornativentris*. Proceedings of the 15th International Congress of Comparative Endocrinology, Boston, U.S.A.

LeMevel JC, Mimassi N, Lancien F, Mabin D, Conlon JM. (2005). Cardiovascular actions of the stress-related neurohormonal peptides CRF and urotensin-I in the trout *Oncorhynchus mykiss*. Proceedings of the 15th International Congress of Comparative Endocrinology, Boston, U.S.A.

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Raza H, Prabu SK, Avadhani NG. (2005). Increased reactive oxygen species production and metabolic alterations in mitochondria of experimental diabetic rat tissues. Proceedings of the 44th Annual Meeting of Society of Toxicology, New Orleans, U.S.A.

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Skovgaard N, Galli G, Conlon JM, Taylor EW, Wang T. (2005). Regulation of pulmonary blood flows in reptiles. Comparative Biochemistry and Physiology 141A: S192

RESEARCH GRANTS - 2005

FMHS New Research Grant 2005

Dr AH Al-Marzouqi.

Functional analysis of the chromatin-remodelling complex SWI/SNF

Prof JM Conlon (PI), Dr T Pal, Dr S Galadari
Design of protease-resistant antimicrobial peptides that are active against the human pathogen, *Proteus mirabilis*..

Dr OMA El-Agnaf (PI). (2005-2007).
Pathfinder study on α -synuclein in plasma as a biomarker for Parkinson's disease and related disorders.
Dr MJ Fernandez-Cabezudo.

Biochemical analysis of phagocytosis regulation by Toll-like receptors: possible role of intracellularly-expressed cytokines.

Dr F Mustafa

Development of fluorescent *in situ* hybridization (FISH) assays for the characterization of muscarinic receptor subtypes.

Prof H Raza (PI), Ms A John.

Reactive Oxygen Species in cell signaling and pathophysiology: Role of mitochondrial respiratory chain and NAD (P) H oxidase.

UAE University Grants 2005

Dr AH Al-Marzouqi

Binding of modified nucleosomes to chromatin-remodeling complexes"

Drs AH Al-Marzouqi (PI), T Rizvi, A Al-Marzouqi
Anti-cancer activities of indigenous UAE herbs extracted by supercritical carbon dioxide: from identification to mechanism of action.

Dr OMA El-Agnaf

Investigation of the neurotoxicity of alpha-synuclein.

Terry Fox Fund for Cancer Research Grant 2005

Dr AH Al-Marzouqi(PI), Dr T Rizvi

Analyzing the functional interaction of the SWI/SNF chromatin-remodeling complex with histone acetyltransferases and histone deacetylases and their link to cancer.

Drs OMA El-Agnaf (PI), SG Aswad, F Torab (2006-2009).
Synucleins as biomarkers and potential targets for intervention in cancer progression.

Dr S Galadari

What is the role of human neutral ceramidase in cancer?

Prof H Raza (PI), Ms A John.

Role of oxidative stress in etiology, pathology and prevention of chemical carcinogenesis: Use of cell culture models for the induction of metabolic defence.

Hamdan Award for Medical Research 2005

Dr S Galadari

Biochemical and Cell Biological Characterization of the Human Neutral Ceramidase.

Michael J. Fox Foundation for Parkinson's Research, USA 2005

Dr OMA El-Agnaf (PI), Profs JM Conlon, A Adem (2006-2009)
Development of Lewy bodies MRI imaging agents for the early diagnosis of Parkinson's disease and related disorders.

Dr OMA El-Agnaf (PI), Dr MG Schlossmacher (2006-2008).
Quantification of plasma alpha-synuclein a biomarker for Parkinson's disease.

Department of Community Medicine

Dr F Al-Maskari¹	Acting Chair, Assistant Professor	Dr M El Sadig	Academic and Research Administrator
Prof N Nagelkerke	Professor	Mr SV Shinelal	Technician (Nurse)
Dr P Barss	Associate Professor	Mr H El Agab	Technician (Statistician)
Dr R Bernsen³	Associate Professor	Ms A Kaljee	Medical Secretary
Dr J Al-Mutawa	Assistant Professor	Mr M Jamal	Office Assistant
Dr M Grivna	Assistant Professor		
Dr J Schneider⁴	Assistant Professor		

¹ Dr F Al-Maskari was appointed Acting Chair of Community Medicine with effect of 1 September 2005.

² Prof R Reed (Chair of Family Medicine) was Acting Chair of Community Medicine from 10 October 2004 to 31 August 2005.

³ Dr R Bernsen joined the Department on 1 November 2005.

⁴ Dr J Schneider joined the Department on 24 September 2005.

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Community Medicine Faculty and Staff.

Back row (left to right): Mr Jamal CK, Dr Peter Barss, Dr Michal Grivna, Prof Nico Nagelkerke, and Mr Shinelal.

Front row (left to right): Dr Mohammed El Sadig, Dr Jamal Al Mutawa, Ms Arlene Kaljee, Dr Fatma Al Maskari (Acting Chair), Dr Roos Bernsen, and Dr John Schneider.

RESEARCH PROFILE

The Department of Community Medicine has a mission to train health professionals to protect and improve the health of the population of the United Arab Emirates, with special reference to the vulnerable. The World Federation for Medical Education's goal for medical education is the improved health of all peoples.

A key element in achieving our department's mission and in contributing to the World Federation's goal is providing good information about the main threats to health, particularly lifestyle-related chronic diseases, injury, and infectious diseases. Research methodologies are drawn from epidemiology, public health, occupational Health and biostatistics, with emphasis on areas of special need in the UAE. The following research areas were covered for the UAE:

General Public Health Research: Surveys for infectious diseases included HIV/AIDS prevention, and occupational blood-borne diseases. Health surveys to assess awareness about breast cancer, breast and other infant feeding, antenatal care, school hygiene, premarital screening, oral contraceptives, alternative medicine, folic acid intake during pregnancy, smoking hazards, healthy diet and physical activity. Health care administration research included patients' satisfaction with primary health care services, perinatal services, and doctor-patient relationship.

Chronic Diseases Prevention Research: Incidence, prevalence and risk factors analysis of asthma, obesity, osteoporosis, anemia, ischemic heart disease, stroke, hypertension, diabetes mellitus and DM complications.

Injury Prevention Research: Incidence and risk factor research of school related traffic injury, home injury, road crashes and use of safety belts, and drowning.

Occupational Health Research: Incidence, risk factors analysis and control of occupational eye injury, sharp and needle-stick injury, occupational asthma, occupational lung diseases, noise related disorders among exposed workers and control of air quality.

Biostatistics: Statistical advice to FMHS and GHAS members.

RESEARCH INTERESTS OF FACULTY AND STAFF (Alphabetical)

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

medicine. She is currently involved in research aiming to determine prevalence of DM complications among patients in Al-Ain. She recently received the best Oral Presentation Award at the First International Conference for the Study of Diabetes, held in Dubai during February 2005.

Dr Jamal Al-Mutawa: Public health physician specialized in preventive medicine, public health and environmental health with focus on infection control and hygiene including hospital hygiene. He is also interested in ozone, oxygen therapy, and complementary medicine.

Dr Peter Barss: Public health specialist physician and scientist with special expertise in prevention of unintentional injuries such as drowning, traffic, and home injury. His main research in the UAE has focused on drowning surveillance and prevention, prevention of school traffic injuries by assessing environmental risk factors in the school traffic environment, home safety, smoking prevention, HIV/AIDS, and mortality reporting. Dr. Barss collaborates internationally with the Canadian Red Cross and other organizations for national water safety and drowning prevention. Dr. Barss was the lead examiner for a PhD examination at the Department of Social Medicine, Karolinska Institute, Stockholm, Sweden, during 2005.

Dr Roos Bernsen: Epidemiologist and Biostatistician with special interest in allergy and asthma. She provided consultations to the Research Department of the Erasmus Medical Center of the University of Rotterdam in the Netherlands for many years before joining FMHS, and conducted studies in the Netherlands on risk factors for childhood asthma and allergy. She is organizing related studies in the UAE.

Dr Mohamed El-Sadig: Epidemiologist and health economist, with special interest in traffic safety and non-communicable diseases. He is currently coordinating a collaborative research project with Monash University Accident Research Center (MUARC) and co-investigating several safety research projects in collaboration with stakeholders in the UAE.

Dr Michal Grivna: Public health specialist physician with a special interest in child injury control, school and community safety, bicycle-related and playground injuries and more recently school traffic safety, trauma registration and HIV/AIDS prevention in the UAE. A founding member of the European Child Safety Alliance and the Centre for Childhood Injury Epidemiology and Prevention in the Czech Republic. Dr. Grivna is a leading figure

in the promotion and implementation of “WHO – Safe Community Programs”.

Prof Nico Nagelkerke: Senior Biostatistician with a special interest in statistical methodology and infectious disease modeling. Prof. Nagelkerke has provided input in biostatistics to a number of projects which resulted in peer reviewed publications during 2005. He is collaborating with the Department of Preventive medicine on a study on tuberculosis.

Dr John Schneider: Occupational health physician, and a fellow of the Australasian Faculty of Occupational Medicine and the Royal Australasian College of Physicians. His main research interests are occupational rehabilitation, organization and planning of occupational health services in rural and remote work sites, work in hot environments, and impairment assessment at the workplace. He commenced work in the Department of Community Medicine, at the UAE University in September, 2005.

Visiting Professors Collaborating with Departmental Research during 2005: Dr Chris Frampton, Biostatistics, New Zealand; Dr Maja Ganczak, HIV/AIDS and occupational injuries of health care workers, Poland.

ACADEMIC COLLABORATION WITHIN AND OUTSIDE THE UAE UNIVERSITY

The Department collaborated on clinical research issues and worked closely with the Ministry of Health, particularly the Preventive Medicine Department of Al Ain, on projects assessing infectious diseases, including HIV/AIDS, chronic diseases, injury, mortality reporting and death certification, and occupational health. In addition, the Department has established academic and community service relations with the department of Medical services of ADCO-Abu Dhabi. This has resulted in training opportunities for students in occupational health. The Department also provides academic input to the UAEU Masters program of Environmental Sciences, the Arab Board Residency Programs, Medical Laboratory Technology (MLT) Masters Degree and various CME programs within and outside Al-Ain District.

The Department provides scientific input to the UAEU collaborative Road Safety Research Centre (RTTSRC) which undertakes collaborative research with agencies within and outside the UAE.

Members of the Department presented three types of two-day research workshops for faculty, staff, and members of Preventive Medicine De-

partment, including Data Management for Survey Research, Injury Epidemiology, and Biostatistics.

RESEARCH TRAINING

An essential function of training in community medicine is field research on target populations to assess incidence, prevalence, and risk factors for health, disease, and injury. The department research training benefits final year and second year medical students, as well as residents in Family and Community medicine. The faculty members of the department invest considerable effort in supervision of field research projects of five senior clerkship groups every year. The following include the medical student and residency research projects for 2005, each of which included a scientific research report, oral presentation to faculty and students. Many research projects were also presented by students at the university research conference as oral presentations, and at local, regional and international conferences as posters and presentations.

SENIOR CLERKSHIP RESEARCH PROJECTS

Al Dhaheri WS, Al Falasi NM, Al Jenaibi SM. (2005). Knowledge, attitude and practice of swaddling in Al Ain, UAE. Supervisors: Al Maskari F (Principal), Barss P, Grivna M.

Al Mazrooei RAMS, Bedwawi AOA, Al-Ghathithi NK, Al Ali LEK. (2005). Prevalence of type A behaviour and stress coping strategies among FMHS medical students in Al Ain, UAE. Al Maskari F (Principal), Grivna M, Frampton C.

Al Mazroui MS, Al Muhairy MA, Al Naqbi MM. (2005). Knowledge, attitude and practice towards avian flu among farm workers. Supervisors: Al Maskari F (Principal), Al Mutawa J, Grivna M, Nagelkerke N.

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1) Al Hashemi A, Al Kaabi A, Al Kuwaiti H. (2005). The prevalence of overweight among youth and its associated risk factors in Al Ain City, UAE (2005). Supervisors: Al Mutawa J (Principal), Mukhini L.

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Barss P. (2005). Drowning and Other Water-Related Injury Fatalities in Canada: An Analysis of the Circumstances and Trends of Water-Related Fatalities in Canada in 1991-2000. Ottawa, ON: The Canadian Red Cross Society (also published in French), 1-42.

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Health Sciences, Medical Statistics at a Glance, Statistics at Square One, and Statistics at Square Two. Authors: JW Kuzma & SE Bohnenblust, A Petrie & C Sabin, TDV Swinscow & MJ Campbell, MJ Campbell. *Emirates Med J*, 23:87-89.

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Al Bana A, Al-Saadi A, Al-Badwawi S (FMHS students), Al-Maskari F, Frampton C. (2005). Prevalence of Conduct Disorder among Juvenile Delinquency Centers in the UAE. The 3rd Scientific Conference for Medical Students, Kuwait, January.

Al Kindi A, Al Badawy A, Al-Ameri N, Nuwayhid I. Assessment of occupational noise exposure among smith workers in Al Ain industrial area (Sanaiya) (2005). Al Ain, United Arab Emirates: UAE University Annual Research Conference, May.

Al Marshda A, Al-Marzouqi A, Al-Kuwaiti N, Ganczak M, Barss P. (2005). Attitudes, practices and exposures for needlesticks and other sharps injuries among health-care workers in emergency departments of government hospitals in United Arab Emirates. Bergen, Norway. 14th International Safe Communities Conference June.

Al Marzouqi O, Al-Blooshi H, Al-Bannai A, Al-Awadhi M, Nuwayhid I. (2005). Knowledge, attitude and practice of construction workers toward prevention of heat-related illnesses in Al Ain district, United Arab Emirates. UAE University Annual Research Conference, May.

Al Maskari F, El-Sadig M. (2005). Prevalence of complications among diabetic patients in Al-Ain Medical Dis-

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Schneider J. (2005). Early Intervention in Workplace Rehabilitation. CRS Health Services Australia Forum, Mackay, Australia, September 2005.

Schneider J. (2005). Equipment Improvement and Injury Prevention in Bull Riding. Asian Conference on Occupational Health, Wellington, New Zealand, May 2005.

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RESEARCH GRANTS

FMHS New Grant 2005

Drs J Al-Mutawa (PI), M El-Sadig., J Joseph, MN Smith, H Ahmed. The Prevalence of Respiratory Symptoms and Lung Function Impairment among sewage Workers, Al-Ain, UAE.

Prof N Nagelkerke (PI), Dr M Sheek-Hussein, Prof S Dissanayake.

The role of sexually transmitted agents in the pathogenesis of tuberculosis. (Seed Money Grant)

Drs J Schneider (PI), G Bates, M El-Sadig. Hydration Status and Fatigue Levels of Outdoor Manual Workers. FMHS, UAE University. (Seed Money Grant)

UAEU Grant 2005

Drs F Abu-Zidan, (PI), S Shaban, K Lunsjo, P Barss, M Grivna.

Establishment of a National UAE Trauma Registry.

Drs P Barss (PI), M Grivna, F Al-Maskari. Knowledge of Swimming and Water Safety, and Frequency of Exposure to Aquatic Hazards, among High School Students in Al Ain, UAE.

Drs M Grivna, (PI), P Barss, F Al-Maskari, M El-Sadig. School-Related Traffic Injuries in Al Ain, UAE – Incidence and Environmental Risk Factors.

Others

Drs V Benešová, (PI), M Grivna. (2004-2006).

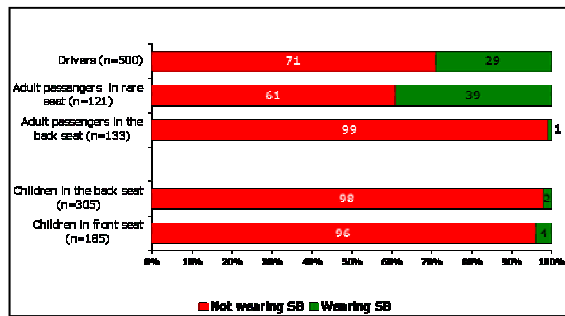
The injuries in children at home and recreation, implications for prevention. Research Grant Agency - Ministry of Health, Czech Republic (IGA MZ č. NR 8229-3).

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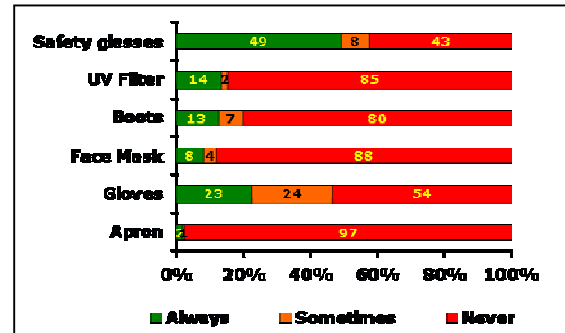
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Drs M Grivna (PI), P Barss (CI), F Al Maskari (CI), M El-Sadig (CI).

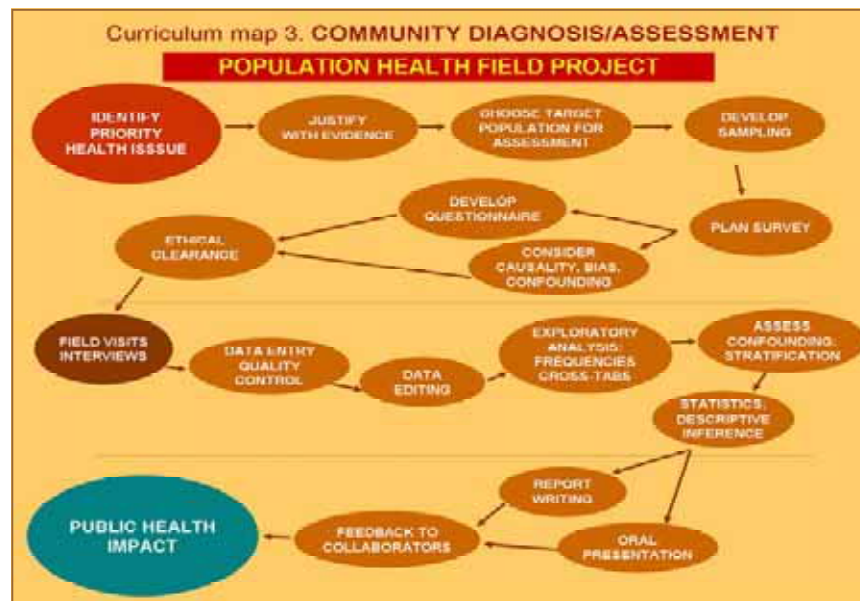
School-related traffic injuries in Al Ain, UAE – incidence and environmental risk factors.



Car Safety Restraint Survey by Prevalence of Wearing of Seatbelts by Car Occupants
 Al-Ain, United Arab Emirates, 2003-2004 (n=500 cars)



Radiator & Exhaust Repairers by Use of Safety Equipment
 Al Ain, United Arab Emirates, 2003 (n=110)



Department of Internal Medicine_____

Prof M G Nicholls	Professor and Chairman	Dr A Shehab	Teaching Assistant
Prof M Ellis	Professor	Dr A A Melaih	Teaching Assistant
Prof E N Obineche	Professor	Dr A Al-Dhanhani	Teaching Assistant
Dr I Galadari	Associate Professor	Dr S Al-Karam	Teaching Assistant
Dr E E Kazzam	Associate Professor	Dr H Galadari	Teaching Assistant
Dr W Conca	Associate Professor	Dr G Al Mansouri	Teaching Assistant
Dr S Gariballa	Associate Professor	Dr M Al Houqani	Teaching Assistant
Dr I Hassan	Associate Professor	Dr S Benedict	Senior Technician
Dr H Saadi	Associate Professor	Dr A M Abdulle	General Technician
Dr S Denic	Assistant Professor	Mr J Yasin	Technician
Dr J Joseph	Assistant Professor	Mr A Alessa	Research Nurse
Dr J Al Kaabi	Assistant Professor	Ms M Kutty	Research Nurse
Dr S Al Suwaidi	Assistant Professor	Ms S Al Marar	Research Assistant
		Mr H Hassan	Administrative Assistant
		Ms R John	Secretary
		Ms S Ogilvie	Secretary

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*Back row, left to right: Dr S Gariballa, Mr H Hassan, Mr Abubaker, Mr Srinivas
Middle row, left to right: Ms M Kutty, Ms R John, Ms S Ogilvie, Dr J Alkaabi, Dr A M Abdulle,
Dr E Kazzam, Mr A Al-Essa, Dr W Conca, Mr J Yasin, Dr S Benedict
Front row, left to right: Dr I Hassan, Dr I Galadari, Dr S Alsowaidi, Dr J Joseph, Professor M G Nicholls,
Professor E N Obineche, Dr H Saadi, Dr S Denic, Professor M Ellis*

This Department has been highly active in the three fields of Teaching, Research and Clinical Duties through 2005.

The following staff joined us in 2005:

Dr I Hassan,
Consultant Haematologist / Internist
Dr J Alkaabi,
Consultant Endocrinologist / Internist
Dr S Alsowaidi,
Consultant Allergologist / Internist.

In relation to Teaching Assistants, we had seven in 2005, six carrying out their Internship Programmes in USA and Canada, and one finishing his Post-graduate Programme in the United Kingdom. They are as follows:

Dr A Shehab	Teaching Assistant (UK)-due to return in early 2006
Dr A Al Melaih	Teaching Assistant (Canada)
Dr A Al-Dhanhani	Teaching Assistant (Canada)
Dr S Al-Karam	Teaching Assistant (Canada)
Dr H Galadari	Teaching Assistant (USA)
Dr G Al Mansoori	Teaching Assistant (Canada)
Dr M Al Houqani	Teaching Assistant (Canada)

Dr Sheela Benedict and our two Technical Assistants (Mr Javed Yasin and Dr A M Abdulle) have been enmeshed in the research activities of various faculty within and outside the Department. Their workload increases steadily with time. Dr Abdulle obtained his PhD from the University of Central Lancashire in early 2005. Mr A Al-Essa joined us as Research Nurse in 2005. Ms M Kutty joined us, funded by an external grant, in 2005.

Ms Sheena Ogilvie and Ms Reena John continue to provide secretarial services and Mr Hisham Hassan vital general services for the Department.

The Departmental laboratory is located on the 3rd floor and research interests and publications covered in 2005 were:

<i>genetics</i>	<i>vasoactive peptides</i>
<i>Dermatology</i>	<i>diabetes</i>
<i>Cytokines</i>	<i>hypertension</i>
<i>cancer</i>	<i>osteoporosis</i>
<i>infections, including fungi</i>	<i>cardiovascular disease</i>
<i>lipids</i>	<i>chronic renal failure</i>
<i>pleural disorders</i>	<i>rheumatic disease</i>

The Department members published 22 papers in peer-reviewed journals, 6 book chapters and reviews, 3 abstracts and 23 conference presentations. Twelve clinical grants are held.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Abu-Zidan FM, Dittrich K, Czechowski JJ, Kazzam E. (2005). Establishment of a course for Focused Assessment Sonography for Trauma. *Saudi Med J*, 6:264-70.

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Denic S, Nicholls MG. (2005). Incestuous gene in consanguinophilia and incest: Toward a consilience theory of incest taboo. *Medical Hypotheses*. Epub.

Ellis M, al-Ramadi B, Hedstrom U, et al. (2005). Significance of the CC chemokine rantes in patients with hematological malignancy: results from a prospective observational study. *Br J Haematol*, 128:482-9.

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Galadari I. (2005). Psoriasis, a fresh look. *Clinics Dermatology J*, 23:491-502.

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Lindqvist P, Henein M, Mörner S, Waldenström A, Kazzam E. (2005). Regional and Global Right Ventricular Function in Healthy. Individuals Umeå General Population Heart Study. *Echocardiography*, 4:305-314.

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Lindqvist P, Caidahl K, Neuman-Andersen G, Rantanpää-Dahlqvist S, Waldenström A, Kazzam E. (2005). Right Ventricular Diastolic Disturbance in Patients with Systemic Sclerosis. *Chest*, 128:755-63.

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Gariballa SE. (2005). Vitamin and mineral supplements for preventing infections. *British Medical Journal*, 331:304-5.

Gariballa SE, Sinclair AJ. (2005). Nutrition, Disease & Ageing. In Geissler & Powers (eds). *Human Nutrition*, 11th Edition. Elsevier Science, 16:321-36.

Obineche EN. (2005). Chapter in "Glomerular Diseases". Membrano-proliferative glomerulonephritis. Publisher: Janssen-Cilag pp 305-29.

Obineche EN, Abdu A. (2005). Update in diabetic nephropathy (Review). *International Journal of Diabetes and Metabolism*, 13:1.

Saadi H, Dawodu A. (2005). Vitamin D deficiency in Arabian women and children: Time for action. In: Kinger I, Laura V (eds): *Trends in lifestyle and health research*, 163-174. Nova Science Publishers.

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Fotheringham J, Jackson K, Kersh R, Gariballa SE. (2005). Refeeding Syndrome: Life-threatening, underdiagnosed but treatable. *Quarterly Journal of Medicine*, 98(4):318-9.

Obineche EN, Chandranath I, Benedict S, Adem A, Pathan J. (2005). Atrial natriuretic peptide (ANP) receptor changes in streptozotocin induced long term diabetic rat kidneys. *American Journal of Kidney Diseases*, 45:4 pg 41.

Saadi HF, Al-Suhaili AI, Mohammadiyah M, Reed R, Agarwal M, Benedict S. (2005). Bone mineral density of Arabian women: Relation to anthropometric and lifestyle factors and to vitamin D status. *Bone* 36 (2005) S 358-9

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Adem A, Saleh AM, Vijayasathya C, Galadari S, Chandranath SI, Patel M, Ahmed I, Obineche EN. (2005). Experimental diabetic nephropathy-evidence for multiple apoptotic pathways. 1st International Conference of the Gulf Group for the Study of Diabetes. Dubai International Convention Centre, UAE.

Denic S, Frampton C. (2005). Consanguinity affects selection of alpha thalassemia genotypes and the size of populations under selection pressure from malaria. 3rd Qatar International Medical Congress. Doha, Qatar.

Denic S. (2005). Parental consanguinity and self-reported Diabetes Mellitus. 6th Annual UAE University Research Conference, Al Ain, UAE.

Denic S, Saadi H. (2005). Consanguinity protects against diabetes mellitus. 1st International Conference of the Gulf Group for the Study of Diabetes. Dubai, UAE.

Ellis M. (2005). Treatment options for Invasive Aspergillosis. Finish Haematology Association, Helsinki.

Ellis M. (2005). Association between the serum chemokine RANTES, platelets and infection in patients with haematological malignancy. 6th Annual UAE University Research Conference, Al Ain, UAE.

Ellis M. (2005). Changes in the leucocyte trafficking chemokine RANTES in patients with haematological malignancy. International Conference on Emerging Infectious Diseases, Al Ain, UAE.

Ellis M. (2005). New insights into the management of invasive fungal infections. Kuwait University, Kuwait.

Ellis M. (2005). The role of azoles in managing invasive fungal infections. Kuwait Institute for Medical Specialization, Kuwait.

Gariballa S. (2005). Nutrition and ageing. Nutritional Medicine, University of Surrey, UK.

Gariballa S. (2005). Nutrition and prevention of stroke. Clinical Nutrition, MSc, Human Nutrition, Sheffield, UK.

Gariballa S. (2005). A randomised, double blind, placebo-controlled trial of the effects of energy, protein and micro-nutrient supplementation in hospitalised patients. Nutrition Society. Telford, UK.

Gariballa S. (2005). Antioxidant supplementation mitigates oxidative damage after acute ischaemic stroke. Fourth European Congress on Nutrition and Health. Toulouse, France.

Gariballa S. (2005). Validation of dietary records kept by older people in hospital and the community. Fourth European Congress on Nutrition and Health. Toulouse, France.

Gariballa S. (2005). Energy expenditure during acute illness. Fourth European Congress on Nutrition and Health. Toulouse, France.

Gariballa S. (2005). Antioxidant and B-group vitamins supplementation after acute ischaemic stroke. Oral presentation. 3rd Congress of European Union Medicinal Society. Vienna, Austria.

Joseph J, Benedict S, Joseph M, Al-Ramadi B. (2005). Transforming growth factor beta-1 may up regulate interferon gamma production by peripheral blood mononuclear cells from asthmatics and normal controls. FOCIS Federation of Clinical Immunology Societies, 5th Annual Meeting. Boston, USA.

Obineche EN, Adeghate E, Chandranath IS, Benedict S, Fahim M, Adem A. (2005). Atrial natriuretic peptide and its receptors in the rat kidneys: Effect of longterm diabetes mellitus. 6th Annual UAE University Research Conference. Al Ain, UAE.

Obineche EN, Adem A, Chandranath SI, Saleh AM, Vijayasathya C, Galadari S, Patel M, Ahmed I. (2005). Apoptosis in experimental diabetic nephropathy. 3rd World Congress of Nephrology (WCN). Singapore. Nephrology, Vol 10 Supplement.

Obineche E, Abdulle A, Pathan J, Gillett M, Bokhari A, Abouchacra S, Benedict S, Adem A. (2005). Increased homocysteine levels as a possible risk factor for hypertension in the United Arab Emirates. 38th Annual Meeting of the American Society of Nephrology. JASN Supplement.

Saadi H, Dawodu A. (2005). Hypovitaminosis D in Arabian women and children: Time for action. Pan Arab Endocrinology 6th Annual Meeting. Alexandria, Egypt.

Saadi H. (2005). Emirates Diabetes Society: Diabetes Update. Lecture on Classification, Screening and Diagnosis of Diabetes and Workshop coordinator. Dubai.

RESEARCH GRANTS 2005

Hamdan Award Medical Research Grant

Dr S Denic (PI). (2004-2006).

Effect of consanguinity on the spread and prevalence of gene mutations of common hemoglobinopathies and other red blood cell disorders: a computer simulation study.

Drs S Denic, M Awad (PI). (2004-2006).

Validity and reliability of a disease-specific questionnaire module (the EORTC QLQ C30) in assessing quality of life of cancer patients in an Arab population.

Dr H Saadi (PI). (2004-2005).

Prevention and treatment of vitamin D deficiency in Arabian women: Efficacy of high dose vitamin D supplementation.

Terry Fox Cancer Research Grant 2005

Drs S Denic, M Awad (PI). (2005).

Quality of life three months and one year after first treatment for early stage breast cancer in Arab patients: Influence of treatment and patient characteristics.

Others

Prof M Ellis (PI).

Prospective randomized clinical trial of a standard dose (3mg/kg/day) of AmBisome versus an intermittent high dose (10mg/kg/day day 1, 5mg days 3 and 6) in febrile neutropenia.

Prof M Ellis (PI).

Study of bacteremia in haematological malignancy.

Prof M Ellis (PI).

A comparative study of two antifungal agents (caspofungin, ambisome) in managing invasive fungal infections and febrile neutropenia.

Dr S Gariballa (2005-2008).

Diet and immunity.

Food Standard Agency.

Dr S Gariballa (2005-2006).

Nutrition and quality of life.

NHS/RD.

Dr S Gariballa. (2005-2007).

Determinants of quality of life in the community.

Department of Health.

Dr H Saadi (PI).

A national survey of the prevalence of diabetes and its complications in the United Arab Emirates-A Pilot Study.

UAE University and Red Crescent.

Dr H Saadi (2005).

A double-blind, multicenter study to assess the LDL-C lowering of combination tablets Ezetimibe/Simvastatin (10mg/20mg) and Ezetimibe/Simvastatin (10mg/40mg) compared to Atorvastatin 20mg in patients with type 2 diabetes. Study Site Co-ordinator.

Merck & Co, Inc.

Dr W Conca

The response of the cellular immune system in young Emirati women lacking vitamin D3. UAE University Seed Grant.

Department of Medical Microbiology and Immunology

Prof M Lukic	Professor, Chairman	Mr A Shahin	Senior Technician
Prof N Nowotny	Professor	Dr E Zilahi	Senior Technician
Prof S Dissanayake	Professor	Mr A Al Haj	General Technician
Dr B al-Ramadi	Professor	Mr M K Jahabar	Assistant senior Technician
Dr T Pal	Associate Professor	Mr H Hasasna	General Technician
Dr T Rizvi	Associate Professor	Ms G Bashir	Assistant Technician
Dr M B Al Shamsi	Assistant Professor	Ms G Dawood	Secretary
Dr P Jumaa	Assistant Professor	Ms N J S Al Dhafri	Secretary
Mr A Usmani	Chief Technician	Mr M H Majeed	Office Assistant

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Seated: Professor M L Lukic (Chairman), Pretty Susan Philip, Nawal Juma, Maureen Dawood, Erika Zilahi, Preethi Jayanth, Senarath Dissanayake,

Standing: Jahabar Ali, Allen Shahin, Ahmed El-Haj, Ahmed Al-Hakim, Tibor Pal, Basel al-Ramadi, Tahir Rizvi, Hashik Majeed

RESEARCH PROFILE

As in the previous years the development of national research and teaching staff and introduction of medical students to biomedical research was high priority. Dr. Mariam Al-Shamsi is pursuing her postdoctoral training in the Center of Experimental Rheumatology and WHO Collaborating Center for Molecular Biology and Novel Therapeutic Strategies for Rheumatic Diseases at the University of Zurich, while Mr. Ahmed Al Qahtani is working on his Ph.D. thesis at the University of California, Irvine. Both of them have published their work in international journals and presented at major scientific meetings.

Several groups of medical students were involved in departmental research and students working in Dr. Tahir Rizvi's laboratory were particularly successful in obtaining awards at the GCC, UAEU Research Conference and FMHS research meetings

The integration of graduate students in departmental research activities was also significant; two candidates in molecular bacteriology and virology have finalized and defended their excellent thesis work which was followed by the first authored or co-authored publications in relevant journals.

Members of the department have had a very productive year in terms of number and quality of publications. Professor N. Nowotny and colleagues organized highly successful International Meeting on Emerging Infections with participation of major researchers in the field.

Dr Rizvi in collaboration with colleagues from University of Cambridge obtained highly competitive Wellcome Trust Grant. Professor Ramadi obtained major Terry Fox Grant and Professor Lukic Interdisciplinary UAE Grant. Dr. Rizvi and Professors Dissanayake and Lukic are holders of Sheikh Hamdan Award Grants. Professor Nowotny and Dr Pal were involved in GCC collaborative research and have finalized successfully their project with ADCO Environmental Program.

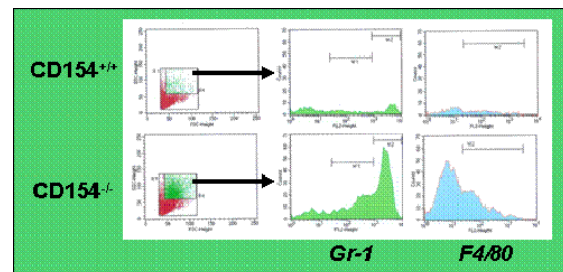
As the outcome of research activities in 2005, members of the department have accepted papers in the major international journals in the field such as Journal of Immunology, European Journal of Immunology, Journal of Virology, Emerging Infections, etc. Members of the department were also invited to contribute to review articles to the distinguished international publications and journals.

The departmental research greatly benefited from competent and dedicated technical and secretarial staff and continuous contribution by volunteer

research associate Dr Agnes Sonnevend. In addition, the contributions of grants supported research assistants; Mr Ahmed Al-Hakim, Mr Arshad Khan, Mr Azim Ulla, Ms. Preethi Jayanth, and Ms. Pretty Susan Philip are greatly appreciated.

Research interests of the departmental laboratories are as follows:

Over the preceding year, studies in **Professor Basel al-Ramadi's** laboratory were conducted along 2 main themes. The first involved the detailed characterization of the nature of the immunodeficiency caused by the loss of CD40-CD154 interactions in deficient experimental animals. The work was particularly centred on the consequences of this deficiency on resistance to intracellular bacterial infections. The findings demonstrated a fundamental role for the CD40-CD154 pathway in both innate and adaptive immune responses. Moreover, our work provided strong evidence for the requirement for CD154 molecule in memory immune responses to experimental *Salmonella* infections. The great majority of these studies have now been completed and part of the work has already been written up and published. The second main project in the lab concerned the development of novel immunotherapeutic modalities in the treatment of cancer. The approach we are studying makes use of the immunopotentiating properties of cytokine-expressing *Salmonella* organisms, previously described by our laboratory. Thus far, an animal tumor model has been established and several *Salmonella* strains have been investigated for their efficacy in inhibiting or retarding tumor growth. Our findings to date indicate that *Salmonella* strains expressing IL-2 or TNF- α are far superior in their capacity to retard tumor growth and enhance overall animal survival. It is expected that this line of studies will continue in our laboratory for several more years.



Delayed resolution of splenomegaly in *Salmonella*-infected CD154-deficient mice.

On day 90 post infection, wild-type (CD154^{+/+}) mice have completely resolved the infection (top panel). In contrast, CD154-deficient (CD154^{-/-}) mice exhibit significant splenomegaly, which is associated with a build-up in granulocytes (stain positive with Gr-1 antibody) and macrophages (stain positive with F4/80 antibody). (Published in al-Ramadi et al, J. Immunol. 176:496, 2006).

Professor Senarath Dissanayake's main research interests are in 2 broad areas:

1. Immunomodulation by parasitic glycans and development of immunotherapeutic agents
2. Molecular epidemiology of mycobacterial infections.

Immunomodulation in parasitic infections:

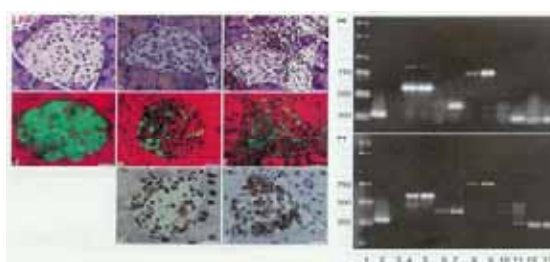
Current emphasis is on molecular (epitope level) characterization of *Taenia* glycans with the objective of developing synthetic immunoadjuvants with well defined Th-1 and Th-2 immunomodulatory properties. One of the long term objectives is to develop immunotherapeutic agents for cutaneous leishmaniasis and for therapy of autoimmune diseases. I have now identified two key epitopes on parasitic glycans that drive Th-1 and Th-2 responses. One such epitope is terminal b-(1-4) galactose on GlcNAc backbones which up-regulate IFN- γ (a Th-1 cytokine) and α -(1-3) fucose on GlcNAc core structure that up-regulates IL-6, a cytokine that has the potential to drive Th-2 responses. Present emphasis is to generate synthetic analogues that have the ability to sustain these cytokine profiles.

Molecular epidemiology of tuberculosis: Few years ago, I published data showing indigenous transmission of tuberculosis in the Eastern Medical region and predicted that current anti-tuberculosis control programmes are not sufficiently fine tuned to address this issue. I also predicted that there could be a re-emergence of tuberculosis in the U.A.E. This prediction has come true, as there are reports of increasing incidence not only in the Eastern Medical Region, but the entire country. In order to investigate the possible causes of this re-emergence (and at the personal request of Dr. Bilal Juma, Director of the U.A.E. Anti-tuberculosis Control Programme) I have begun the preliminary preparations for reactivation of tuberculosis research at FMHS. The following are the proposed studies to be undertaken, in collaboration with the Eastern Region Medical District Preventive Medicine Department (Dr. Mohamud Sheek Hussain) and Microbiology Laboratory at Al Ain Hospital (Dr. Farukh Sheik).

1. Tracing and examination of tuberculosis patient contacts first by PPD and then by ELIS-POT assay.
2. Culture and identification of isolates from all patients, irrespective of origin, national vs expatriate, followed by DNA finger-printing.
3. Investigation of all isolates for drug resistance/sensitivity, to determine whether drug resistant strains are emerging.

Professor Miodrag Lukic's main research interests are cellular and molecular basis of the T cell mediated autoimmune diseases and their regulation at the level of the target tissue. This study addresses the role of macrophage derived cytokines and cytokine receptors and galectins in immunopathological events in experimental models of multiple sclerosis and type-1 diabetes and immune mediated hepatitis. This year Professor Lukic's group has shown that IL-23-Th_{IL-17} axis is involved in diabetes induction and provides direct evidence of the galectin-3 involvement in autoimmune neuropathology. In a pilot project with medical students' participation, role of IL-18 in T cell mediated hepatitis have observed and the pathogenic mechanism analyzed.

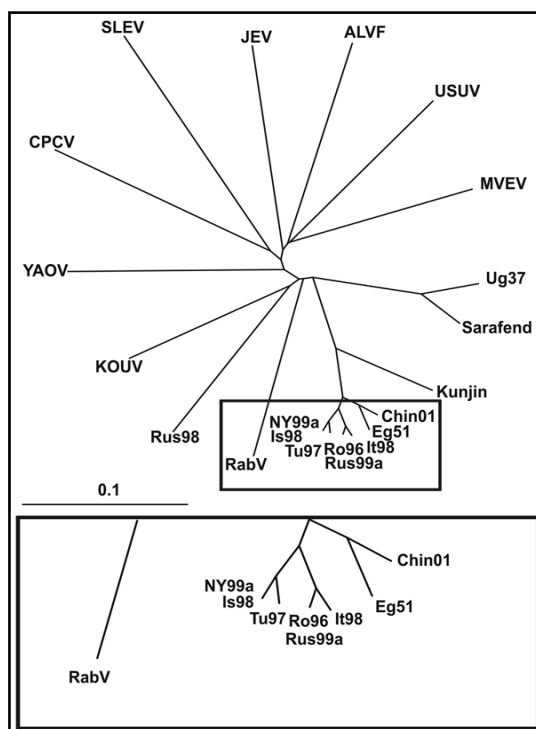
Professor Lukic was Chairman of the session "Cytokines in Autoimmunity" at the Meeting of International Cytokine Society (Seoul) and was guest editor of the Special Issue of Cellular Immunology, 233: (2), 73-66 entitled: Molecular and Cellular Interactions in Chronic Inflammatory Diseases.



Pathohistological (left hand side) and molecular evidence (right hand side) of the role of IL-23-Th_{IL-17} axis in the induction of diabetes. The administration of IL-23 in animals treated with subdiabetogenic doses of STZ lead to massive insulinitis (c vs a&b) loss of insulin producing cells (f vs d & c) and enhanced apoptosis (h vs g). Further the IL-23 drive diabetogenesis is accompanied with the expressio of INF (6 vs 7) INF- α (8 vs 9) and IL-17 (10 vs 11) in the islets (upper panel (9)) and spleen (lower panel (6)). Adopted from European Journal of Immunology (in press).

Professor Norbert Nowotny's research interests are in the fields of emerging viral diseases, zoonoses (infections transmissible from animals to humans), molecular phylogeny / epidemiology, mosquito-borne virus infections such as West Nile virus and Usutu virus, Borna disease virus, and others. He published in 2005 seven original scientific articles in prestigious Journals such as *Emerging Infectious Diseases* (2 papers, impact factor 5.643), *Journal of General Virology* (impact factor 3.327), and others. Between January and April 2006 further seven papers have been published by Prof. Nowotny, among them again two publications in *Emerging Infectious Diseases*, one in *Applied and Environmental Microbiology* (impact factor 3.810), one in *Microbes and Infection* (impact factor 3.753),

etc. Prof. Nowotny is Member of the Editorial Board of *Applied and Environmental Microbiology*, a Journal of the American Society for Microbiology, and he is Member of the International Committee on Taxonomy of Viruses (ICTV) for *Bornaviridae*. The main scientific and organizational achievement of Prof. Nowotny in 2005 was, however, the successful organization of an *International Conference on Emerging Infectious Diseases* in Al Ain, which he did with the help of many members of the *Immunoregulation and Infection Research Priority Group* and with staff members from the Department of Medical Microbiology and the Faculty of Medicine and Health Sciences. Several renowned scientists from all over the world gave keynote presentations, and more than 700 scientists participated in the Conference, among them many from Europe and the U.S. (some more details on the Conference are given in another chapter of this booklet).



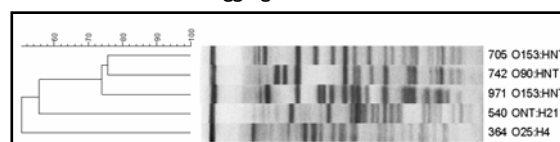
Phylogenetic tree illustrating the genetic relationship between representatives of the Japanese encephalitis virus complex and selected West Nile virus strains based on partial genome sequences of the NS5 protein gene. Bar demonstrates the genetic distance. **From:** T. Bakonyi, Z. Hubálek, I. Rudolf, and N. Nowotny: Novel flavivirus or new lineage of West Nile virus, central Europe. *Emerging Infectious Diseases* 11, 225-231 (2005).

Dr Tibor Pal: During 2005 have continued to have our interest in three different areas of microbiology, i.e. investigating various virulence-related genes, molecular epidemiology of antibiotic resistant bacteria and studying the interaction between bacteria and various peptides occurring in nature.

In the first area we have identified the gene coding for colicin Js in *Shigella sonnei*, described the lack of co-existence of two different types of hemolysin genes in *E. coli*, and the presence and regulation of curly fimbria in enterotoxin producing *E. coli*.

As far as the molecular epidemiology of various pathogens are concerned we were the first to describe the presence of CTX-M-15 type extended spectrum beta lactamase among enteroaggregative *E. coli*. This was also the first report of CTX-M type enzymes from the Arabian Peninsula. We described the high level of molecular variability among serologically non-typable *Campylobacter jejuni* isolates, and the high incidence of anti-Yop antibodies among healthy Hungarians indicating a significantly higher rate of yersinia infections that anticipated based on culture data.

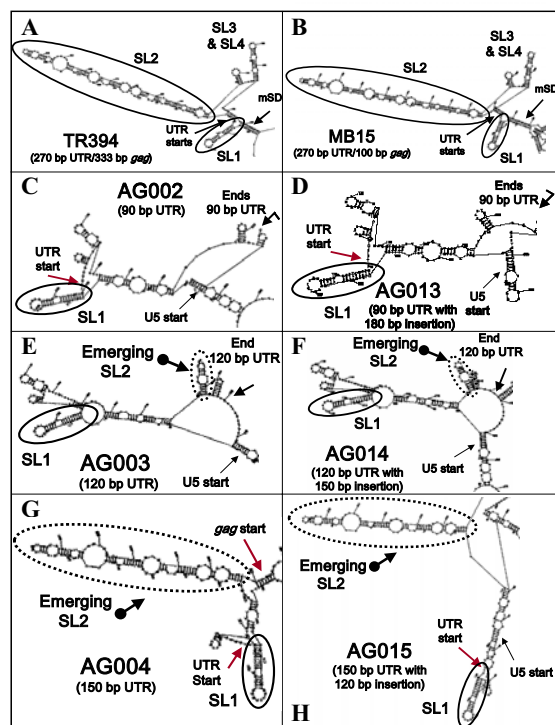
Macrorestriction analysis of ESBL producing enteroaggregative *E. coli* strains



Explanation: The patterns of the XbaI digested genomes extended spectrum beta lactamase producing enteroaggregative *E. coli* strains separated by pulsed-field gel electrophoresis indicates that the five isolates, although carrying identical genes for ESBL production, are in fact independent strains. This suggests that the gene, likely to be on a plasmid, and not a single clone has spread in the community.

Dr Tahir Rizvi: Using a variety of retroviruses such as human, simian, and feline immunodeficiency viruses (HIV, SIV, & FIV), Mason-Pfizer monkey virus (MPMV), and Mouse mammary tumor virus (MMTV), the research program in my laboratory continues to be directed towards understanding basic steps in retroviral replication, with the ultimate goal of establishing retroviral/lentiviral vectors for safe and effective human gene therapy. Some of these studies are focused on how retroviral RNA is preferentially packaged into the nascent virus particles. For example, recently we defined the packaging signal of FIV, a lentivirus that is being solicited as the retrovirus of choice in efforts to develop safer vectors for human gene therapy. Correlation of the mutational analysis with RNA folding algorithms revealed the presence of a conserved stem loop in the 5' end of the viral genome that may serve as the principle packaging determinant of FIV (see SL2 in Fig. 1). Based on these studies, we have successfully secured funding from the Wellcome Trust, UK, in collaboration with Professor Andrew Lever of the University of Cambridge UK, to further investigate the secondary structure of the FIV packaging

signal using genetic, biochemical, and X-ray crystallographic analyses.



Emergence of stem loop 2 (SL2) with increasing sequences from the 5' untranslated region of the FIV genome. (A)-(H) Folding potential of the control and mutant transfer vector RNAs either with deletions or deletions/insertions in between the two core elements. (Published in Journal of Virology, 79: 13817-13821, 2005).

During this academic year, the first Masters Scholarship Student of the Faculty of Medicine, Ms. Akela Ghazawi, successfully defended her thesis entitled "Fine mapping of sequences important for FIV RNA packaging and their mechanism of function" from my laboratory. Ms. Ghazawi was accepted by the University following submission of a competitive proposal and work from her thesis has resulted in two publications in the top journals of the field. Along the same lines, one of the second year medical students, Ms. Eman Rashid Al Shamsi, was successful in securing awards for the best research at the Third GCC Medical Student Conference held in Kuwait as well as at the Sixth Annual UAE University Research Conference in Al Ain. Similarly, four more undergraduate students from Year 2 of the Medical Sciences curriculum conducted their research in our laboratories and their work was selected for the best poster award by their peers at the poster day where both the Medical and Clinical Sciences students presented their research.

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tral Europe. Emerging Infectious Diseases, 11, 225-231. Bakonyi T, Lussy H, Weissenböck H, Hornyák A, Nowotny N. (2005). In vitro host-cell susceptibility to Usutu virus. Emerging Infectious Diseases, 11, 298-301.

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Conlon JM, Abraham B, Sonnevend A, Jouenne T, Cosette P, Leprince J, Vaudry H, Bevier CR. (2005). Purification and characterization of antimicrobial peptides from the skin secretions of the carpenter frog *Rana virgatipes* (Ranidae, Aquarana). Regul Pept, 13:38-45.

Dissanayake S et al. (2005). Adjuvant effect of *Taenia crassiceps* glycans against leishmanial antigens in mice infected with *Leishmania mexicana*. Molecular Immunology, 42:1495-1502.

Dissanayake S. (2005). Immunomodulation in parasitic infections: Parasite products as prototype immunotherapeutic agents. Emirates Medical Journal. 23: 119-126.

Ellis M, al-Ramadi B, Hedstrom U, Alizadeh H, Shammas V, Kristensen J. (2005). Invasive fungal infections are associated with severe depletion of circulating RANTES. Journal of Medical Microbiology, 54:1017-1022.

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Jang Lee J, Dissanayake S, Morris HR, DellA, Haslam SM. (2005). Mass spectrometric characterisation of *Taenia crassiceps* metacystode N-glycans. Molecular and Biochemical Parasitology, 143: 245-249.

King JD, Al-Ghaferi N, Abraham B, Sonnevend A, Leprince J, Nielsen PF, Conlon JM. (2005). Pentadactylin: an antimicrobial peptide from the skin secretions of the South American bullfrog *Leptodactylus pentadactylus*. Comp Biochem Physiol C Toxicol Pharmacol, 141:393-7.

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Maurice H, Nielen, M, Brocchi E, Nowotny N, Bakkali KL, Billinis C, Loukaides, P, O'Hara RS, Koenen F. (2005). The occurrence of encephalomyocarditis virus (EMCV) in European pigs from 1990 to 2001. *Epidemiology and Infection*, 133, 547-557.

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Rollins-Smith LA, King JD, Nielsen PF, Sonnevend A, Conlon JM. (2005). An antimicrobial peptide from the skin secretions of the mountain chicken frog *Leptodactylus fallax* (Anura:Leptodactylidae). *Regul Pept*, 124:173-8.

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Al-Awadhi F, Al-Shehhi H, Nowotny N. (2005). Human brucellosis in the United Arab Emirates. *Emirates Medical Journal*, 23 (1) Suppl.; 76.

Bagó Z, Krause R, Revilla-Fernández, S, Loitsch A, Allberger F, Schönbauer M, Kolodziejek J, Nowotny, N. (2005). Travel-associated human rabies in Austria - contribution to *ante mortem* diagnostics. *Emirates Medical Journal*, 23 (1) Suppl.; 53-54.

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Pál T, Sonnevend Á, Al-Dhaheiri K, Herpay M, Kolodziejek J, Nowotny N, Usmani A, Sheikh F. (2005). Third generation cephalosporin resistance in diarrhea-causing *Escherichia coli*. *Emirates Medical Journal*, 23 (1) Suppl.; 53.

Pál T, Sonnevend Á, Al-Dhaheiri K, Herpay M, Nowotny N, Usmani A. (2005). Extended spectrum beta-lactamase production of enteroaggregative *Escherichia coli* strains isolated in the United Arab Emirates. *Clinical Microbiology and Infection*, 11 Suppl. 2; 108-109.

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Al-Shamsi H, Al-Wedami M, El-Khider S, Fernandez-Cabezudo MJ, al-Ramadi BK. (2005). Chronic Lead Exposure Impairs the Ability of the Immune System to Respond to Bacterial Infections. 3rd Scientific Conference for GCC Medical Students. Kuwait.

Al Shamsi ER, Farah Mustafa, and Tahir A. Rizvi. (2005). Non-Reciprocal Packaging of HIV and SIV Lentiviral RNAs by Heterologous Non-Lentiviral MPMV. Third Scientific Conference for GCC Medical Students, Kuwait City, Kuwait.

Al Shamsi ER, Mustafa F, Phillips PS, Jayanth P, Ali J, Rizvi TA. (2005). Reciprocal Packaging of HIV and SIV Lentiviral RNAs by Heterologous Non-Lentiviral MPMV Particles. Sixth UAE University Research Conference, Al Ain.

Bakonyi, T, Ivanics, É, Erdélyi, K, Ursu, K, Ferenczi, E. Nowotny, N. (2005): [Phylogenetic analysis of Hungarian West Nile virus strains which caused central nervous disease in birds]. In Hungarian. Szent-Iványi – Binder Days (Annual Conference of the Hungarian Society for Zoonoses), June 8-10, 2005, Sárospatak, Hungary, pp. 128-138.

Bakonyi, T, Rusvai, M, Nowotny, N. (2005). Phylogenetic analysis of bee viruses: genetic relationships with other insect viruses and support of the current taxonomic classification. Bee Research And Virology in Europe (BRAVE); Identifying the research needs for protecting European Apiculture and ecosystems against viral diseases, An EU Specific Support Action, Scientific Conference, 24-26 April, Sophia-Antipolis, France, pp. 65-86.

Dissanayake S. (2005). Parasitic glycans as immunotherapeutic agents for cutaneous leishmaniasis. Proceedings of the 45th International Conference on Antimicrobial Agents and Chemotherapy. Washington DC, U.S.A. Dec. 16-19, 2005.

Dissanayake S. (2005). Vaccine adjuvant development for cutaneous leishmaniasis. Proceedings of the 1st Symposium of the Scandinavian-Baltic Society for Parasitology. Vilnius, Lithuania.

Dissanayake S. (2005). Vaccine adjuvant development for cutaneous leishmaniasis. International Conference on Emerging Infectious Diseases, Al Ain.

Dissanayake S., Shahin A. (2005). Th-1/Th-2 immunomodulation by parasitic glycans; a novel mechanism. Proceedings of the 6th Annual U.A.E. University Research conference. April 2005, Al Ain.

Ellis M, al-Ramadi B, Hedstrom U, Frampton C, Alizadeh H, Kristensen, J. (2005). Changes in leucocyte trafficking chemokine RANTES in patients with hematological malignancy. International Conference on Emerging Infectious Diseases. Al Ain, UAE.

Ellis M, al-Ramadi B, Hedstrom U, Frampton C, Alizadeh H, Kristensen, J. (2005). Association between the serum chemokine RANTES, platelets and infection in patients with hematological malignancy. The Sixth Annual Research Conference at UAE University, Al Ain, UAE.

Ellis M, al-Ramadi B, Hedstrom U, Frampton C, Alizadeh, H Kristensen J. (2005). Association between the serum chemokine RANTES, platelets and infection in patients with hematological malignancy. 15th European Congress of Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark.

Fernandez-Cabezudo MJ, El-Hasasna H, al-Ramadi BK. (2005). Mechanism underlying increased susceptibility to apoptosis in Lck-deficient T lymphocytes. 30th Congress of the Federation of the European Biochemical Societies (FEBS) - and 9th Congress of the International Union of Biochemistry and Molecular Biology (IUBMB), Budapest, Hungary.

Forgách P, Bakonyi T, Tapaszi Zs, Nowotny N, Rusvai M. (2005). Investigations on the prevalence of bee pathogen viruses in Hungarian apiaries - Situation before joining the EU. Apimondia 2005, 39th International Scientific Apicultural Congress, August 21-26, Dublin, Ireland.

Ghazawi A, Mustafa F, Jayanth P, Phillips PS, Ali J, Rizvi TA. (2005). Relative Contribution of Sequences at the 5' and 3' end of the FIV Genome Towards RNA Packaging. Annual Retrovirus Meeting of the Cold Spring Harbor Laboratory, New York.

Ghazawi A, Mustafa F, Jayanth P, Phillips PS, Ali J, Rizvi TA. (2005). The Region In Between the Two Core Packaging Determinants of Feline Immunodeficiency Virus (FIV) is Dispensable for RNA Packaging and Propagation. Sixth UAE University Research Conference, Al Ain.

Ghazawi A, Mustafa F, Jayanth P, Phillips PS, Ali J, Rizvi TA. (2005). The Region In Between the Two Core Packaging Determinants of Feline Immunodeficiency Virus (FIV) is Dispensable for RNA Packaging and Propagation. International Conference on Emerging Infectious Diseases, Al Ain.

Hasan MY, al-Ramadi BK, Fahim MA, Fernandez-Cabezudo MJ, Adeghate E, Adam A, Zoubeidi T, Behjat S, Karlsson E. (2005). Studying the use of herbal medicine and complimentary therapies for diabetes treatment by the UAE population. The Sixth Annual Research Conference at UAE University, Al Ain, UAE.

Joseph J, Benedict S, Joseph M, al-Ramadi B. (2005). Transforming growth factor-beta 1 may upregulate interferon gamma production by peripheral blood mononuclear cells from asthmatics and normal controls. The Fifth Annual Conference of Federation of Clinical Immunological Societies, Boston, MA, USA.

Lukic ML, Mensah-Brown E, Shahin A, Al-Shamisi M,

- Al-Hakim A. (2005). Interleukin 23 (IL-23) and Interleukin 27 (IL-27) Differentially Regulate Induction of Autoimmune Diabetes. International Cytokines Conference, Seoul, Korea.
- Lukic ML, Mensah-Brown E, Shahin A, Liew FY. (2005). ST2-Deficiency Convert Resistant Mice Into Susceptible to the Induction of MLD-STZ Diabetes. International Cytokines Conference. Seoul, Korea.
- Lukic ML, Mensah-Brown E, Shahin A, Liew FY. (2005). ST-2-deficiency make resistant mice susceptible to the induction of MLD-STZ diabetes. The 8th meeting of the Immunology of Diabetes Society, Awaji Island, Japan
- Mensah-Brown EPK, Shahin A, Al Hakim A, Lukic ML. (2005). IL-23 leads to diabetes after treatment with subdiabetogenic multiple doses of streptozotocin. The 8th meeting of the Immunology of Diabetes society, Awaji Island, Japan.
- Nowotny N. (2005): Neonatal enteroviral hepatitis. Ras al-Khaimah (U.A.E.)
- Nowotny N, Bakonyi T, Hubálek Z, Weissenböck H, Kolodziejek J, Lussy H, Seidel B. (2005). Emerging mosquito-borne flaviviruses in central Europe: Usutu virus and novel West Nile viruses. FAO/IAEA International Conference on Area-Wide Control of Insect Pests: Integrating the Sterile Insect and Related Nuclear and Other Techniques. International Atomic Energy Agency, Vienna.
- Nowotny N, Zilahi E, Al Hadj MA, Wernery U, Kolodziejek J, Lussy H, Al Dhahry S, Al-Kobaisi MFM, Al Rawahi A, Al Ismaili S. (2005). Molecular epidemiology of camelpox and rabies viruses isolated in the United Arab Emirates and in Oman. 6th Annual UAE University Research Conference, Al Ain (U.A.E.).
- Nowotny N. (2005). Avian influenza - epidemiology, properties of Influenza viruses, outlook. Oud Al Toba Clinic, Al Ain, U.A.E.
- Nowotny, N. (2005): Avian influenza - facts and risks. Sheikh Khalifa Medical City, Abu Dhabi, U.A.E.
- Nowotny N. (2005). Avian influenza - how shall we be prepared for a potential human Influenza pandemic. Al Ain Hospital, Al Ain, U.A.E.
- Nowotny N. (2005). Avian Influenza: review and outlook, College of Food Systems, Al Ain, U.A.E.
- Nowotny N. (2005). Bird flu - will it turn into a human Influenza pandemic? Extraordinary Faculty Research Seminar, Faculty of Medicine and Health Sciences, U.A.E. University, Al Ain, U.A.E.
- Nowotny N. (2005). Bird Flu: is a human Influenza pandemic inevitable? Invited keynote presentation, 29th National Conference of the Pakistan Association of Pathologists, Karachi, Pakistan.
- Nowotny N. (2005). Die Rolle landwirtschaftlicher Nutz- und Heimtiere beim Infektionsgeschehen der Influenza. Interdisziplinäre wissenschaftliche Sitzung zum Thema 'Influenza', Österreichische Gesellschaft der Tierärzte, Sektion Geflügelforschung, Wien.
- Nowotny N. (2005). Emerging mosquito-borne flaviviruses in central Europe. Sharjah Medical College, Sharjah (U.A.E.)
- Nowotny N. (2005). Properties of Influenza A viruses and possible consequences. Dubiotech, Dubai, U.A.E.
- Nowotny N. (2005). Recent emerging viral infections and their consequences. Invited keynote presentation, 29th National Conference of the Pakistan Association of Pathologists, Karachi, Pakistan.
- Nowotny N. (2005). Viral diseases important to the United Arab Emirates. Conference "Advances in Clinical Virology", Kuwait University, Kuwait.
- Nowotny N. (2005). Viruses transmitted by ticks, mosquitoes and rodents in the United Arab Emirates. Conference "Advances in Clinical Virology", Kuwait University, Kuwait.
- Nowotny N. (2005). Zoonotic and emerging virus infections of dogs and cats. Invited keynote presentation. International Congress of Veterinary Virology: Comparative and Emerging Virus Infections of Dogs and Cats, Liverpool.
- Nowotny N, Bakonyi T, Kolodziejek J, Lussy H, Seidel B, Chvala S, Weissenböck, H. (2005). Usutu virus, an emerging mosquito-borne flavivirus of the Japanese encephalitis virus group in central Europe. AREVITH-Meeting Emerging viral infections: biology, pathogenesis, epidemiology. Universität Padua, Italy.
- Tapaszti Zs, Forgách P, Topolska G, Nowotny N, Rusvai M, Bakonyi T. (2005). Phylogenetic diversity of Central-European Black Queen Cell Virus genotypes, Apimondia 2005, 39th International Scientific Apicultural Congress, Dublin, Ireland.

RESEARCH GRANTS 2005

FMHS New Grants awarded in 2005

Professor S Dissanayake (PI)

Mechanism of IFN- γ specific immunosuppression by *Taenia crassiceps* glycans.

Professor N Nowotny (PI)

The molecular characterization of avian Influenzaviruses isolated in the U.A.E

Professor B al-Ramadi (PI)

Regulation of anti-microbial defence by the innate immune system: role of neutrophils, mast cells, and inhibitory cytokines. (2004-2006)

Professor ML Lukic (PI)

The role of Interleukin 23 (IL-23) a novel IL-12 family member in the development of experimental type-1 diabetes: therapeutic implications.

Dr Tahir A Rizvi (PI) (2005-2007)

Readthrough Capabilities of Retroviral Polyadenylation Sequences and Consequences for Retroviral Vector Design.

Professors Ruth Langer: (PI), B al-Ramadi (Co-PI).

Investigation of the immunoreactivity of IOSIMENOL, a novel, non-ionic, dimeric contrast medium using the popliteal lymph node assay: comparison with Iodixanol and other immuno-modulating agents.

Dr. Maria J. Fernandez-Cabezudo (PI), Professor B al-Ramadi: (Co-PI)

Biochemical analysis of phagocytosis regulation by Toll-Like Receptors: possible role of intracellularly-expressed cytokines.

Dr T Pal (PI)

Molecular characterization of extended spectrum beta lactamase producing Gram negative bacteria.

Hamdan Award Medical Research Grant– 2005

Professor S Dissanayake (PI)

A carbohydrate adjuvant vaccine for cutaneous leishmaniasis.

Professor ML Lukic (PI)

Role of Galectin-3 in the induction of inflammatory autoimmunity: An analysis in experimentally induced type-I diabetes in mice.

Dr Tahir A Rizvi (PI)

Genetic Recombination among Lentiviral Vector RNAs: Implications for the Development of Retroviral Vectors for Gene Therapy.

Terry Fox Cancer Research Grant - 2005

Professor BK al-Ramadi (PI)

Development of cytokine-based immunotherapies for the treatment of cancer using live attenuated *Salmonella* as targeting carriers.

Dr TA Rizvi (PI)

Regulation of Retroviral Gene Expression by *Cis*-Acting Repressor Sequences (CRSs) and the Constitutive Transport Element (CTE)".

Others

ADCO Grants

Professor N Nowotny (PI)

Two externally funded grants (from oil companies: ADCO and ADMA-OPCO, respectively) on the identification of tick-borne human pathogens,

Professor N Nowotny (PI), Dr T Pal (Co-PI)

Study of medically important pests and micro-organisms within ADCO fields.

Professor N Nowotny (PI), Dr T Pal (Co-PI)

Risk Assessment of Tickborne Diseases in Zakum West

GCC Cooperation Grants

Professor N Nowotny (PI)

Interdisciplinary Grant UAE University / Sultan Qaboos University, Muscat: Molecular characterization of selected zoonotic and emerging viruses isolated in the UAE and in Oman.

Dr T Pal (PI)

Interdisciplinary grant. UAE University/Kuwait University Molecular Epidemiology and Antibiotic Sensitivity of Diarrhea-causing Bacteria in the UAE and in Kuwait.

Dr T Pal (PI)

Molecular Epidemiology and Antibiotic Sensitivity of Diarrhea-causing bacteria in the UAE and in Kuwait" GCC grant 40.000 USD (2004-2005)

Department of Obstetrics and Gynaecology

Prof M Ezimokhai	Professor, Chair	Dr N Osman	Technician
Dr S Aswad	Associate Professor	Ms L Thomas	Technician
Dr D Rizk	Associate Professor	Ms K Manickam	Secretary
Dr Thomas Bossmar	Associate Professor	Ms J George	Secretary
Dr S Al Awar	Assistant Professor		
Dr H Mirghani	Assistant Professor		
Dr M Mohammed	Teaching Assistant		

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standing from the left to right: Dr. S. G. Aswad, Dr. S. Weerasinghe, Dr. H. Mirghani, Dr. D. Rizk
seated from left to right: Ms Jiji George, Professor M Ezimokhai, Dr. John Smith, Ms Kamala Manickam

RESEARCH PROFILE

The Research interests in the department are in Obstetrics, Oncology, Fetal Medicine, Women's Health and Urogynecology. Dr. Hisham Mirghani is interested fetal sonography, Fetal behavior to maternal glucose levels, electrical uterine activity and ultrasound training.

Obstetrics

- a) Professor M. Ezimokhai is interested in Pathophysiology of Pregnancy and medical disorder in Pregnancy. Expertise is in working with vascular and uterine smooth muscles.
- b) Dr. T. Bossmar is interested in Uterine Physiology, development of new drugs in management of dysmenorrhea and preterm labour
- c) Fetal Medicine Dr. H. Mirghani, is interested in the Ultrasonographic study of fetal growth and development.
- d) Women Health and Urogynaecology Dr. D. Rizk is interested in Women's Health with major focus on Urogynaecology.
- e) Oncology Dr. S. G. Aswad is interested in Epidemiology of female genital cancer.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Al-Inizi Thawaini SA, Khayata G, Ezimokhai M, Al-Safi W. (2005). Planned vaginal delivery of term breech remains an option – result of eight years experience at a single center. *J Obstet Gynaecol*, 25: 263-266.

Fareh OI, Rizk DEE, Thomas LB, Berg B. (2005). Obstetric impact of anaemia in pregnant women in United Arab Emirates. *J Obstet Gynaecol*, 25: 440-444.

Ghazal-Aswad S, Gargash H, Badrinath P, Al-Sebelgy M, A Al-Sharhan M, Chan N (2005). National Workshop for Cervical Cancer prevention and control in the United Arab Emirates, Abu Dhabi, September 2004. *Emirates Med J*, 23 : 71-75.

Mirghani HM, Khair H. (2005). Comparison between visual and computerized cardiotocography in low risk pregnancy. *Saudi Med J*, 1228-30.

Mirghani HM, Weerasinghe S, Al-Awar S, Abdulla L, Ezimokhai M. (2005). The effect of intermittent maternal fasting on computerized fetal heart tracing. *Journal Perinatol*, 90-2.

Mirghani HM, Weerasinghe S, Ezimokhai M, Smith JR. (2005). Ultrasonic estimation of fetal weight at term: an evaluation of eight formulae. *J Obstet Gynaecol Res*, 409-13.

Rizk DEE, Abadir MN, Thomas LB, Abu-Zidan F. (2005). Determinants of the length of episiotomy or spontaneous posterior perineal lacerations during vaginal birth. *Int Urogynecol J*, 16:395-400.

Rizk DEE, Czechowski J, Ekelund L. (2005). MRI assessment of uterine version in a multi-ethnic nulliparous and healthy female population. *J Reprod Med*, 50: 81-83.

Rizk DEE, Hassan HA, Ramadan GA, Shafiullah M, Fahim MA. (2005). Estrogen and ghrelin increase the number of submucosal urethral and anal canal blood vessels in ovariectomized rats. *Urology*, 66: 1343-1348.

Rizk DEE, El-Zubeir MA, Al-Dhaheri AM, Al-Mansouri FR, Al-Jenaibi HS. (2005). Determinants of women's choice of their obstetrician and gynecologist provider in the United Arab Emirates. *Acta Obstet Gynecol Scand*, 84: 48-53.

Steinwall M, Bossmar T, Brouard R, Laudanski T, Olofsson P, Urban R, Wolff K, Le-Fur G, Akerlund M. (2005) The effect of relcovaptan (SR 49059), an orally active vasopressin V1a receptor antagonist, on uterine contractions in preterm labor. *Gynecol Endocrinol*, 20:104-109.

BOOKS, CHAPTERS, REVIEWS, EDITORIALS

Abu-Zidan F, Rizk DEE. (2005). Health care research in developing countries: Problems and solutions. *Int Urogynecol J*, 16: 174-175.

Rizk DEE. (2005). Pharmacological therapy of female urinary incontinence. *Afri Health Sci*, 5: 79-85.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Ghazal-Aswad S, Gargash H, Badrinath P, Al-Sharhan M, Sidky I, Osman N, Chan N. (2005). Cervical Smear Abnormalities in the United Arab Emirates (UAE) – A Pilot Study In The Arabian Gulf. XII World Congress, Cervical Pathology & Colposcopy abstract book, Cancun, Mexico.

Ghazal-Aswad S, Badrinath P, Osman N, Abdul-Khalik S, Raasclou T. (2005). Is There A Correlation Between Vaginal Chlamydia Infection And Cervical Smear Abnormalities? Community Based Study in Al-Ain District, United Arab Emirates. XII World Congress, Cervical Pathology & Colposcopy abstract book, Cancun, Mexico.

Ghazal-Aswad S, Gargash H, Sidky I, Badrinath P, Al-Sharhan M A, Osman N, Chan N. (2005). Cervical Cancer Screening: United Arab Emirates (UAE) Experience. The 1st Beijing International Conference on Obstetrics & Gynecology Abstract book, PU 191, Beijing, China.

Osman OT, Rizk DEE, Sabri S. (2005). Premenstrual dysphoric disorder among women in Al-Ain primary care clinics: Prevalence, psychological stressors and

demographic correlates. International Neuroscience Conference, Al-Ain, United Arab Emirates.

Rizk DEE, Hassan Ha, Shafiullah M, Chandranath SI, Al-Kedrah SS, Ramadan GA, Al-Marzouqi AH, Fahim MA. (2005). Estrogen and ghrelin decrease pelvic floor muscle p27kip1 and increase peri-urethral /peri-anal vessel number in rats. XXVIIIth Congress of the International Association of Gerontology, Rio de Janeiro, Brazil.

Rizk DEE, Abadir MN, Thomas LB, Abu-Zidan F. (2005). Determinants of the length of episiotomy or spontaneous posterior perineal lacerations during vaginal birth. XXXth Annual Meeting of the International Urogynaecological Association, Copenhagen, Denmark.

Rizk DEE. (2005). Unusual and non-urogynaecological complications of continence taping procedures. Workshop 6: Complications of anti-incontinence procedures. XXXth Annual Meeting of the International Urogynaecological Association, Copenhagen, Denmark.

Sarath Weerasinghe, Hisham Mirghani, Anthony Revel, Fikri M. Abu-Zidan. The use of cumulative sum analysis in the assessment of trainee competence in fetal measurements. 15th World Congress on Ultrasound in Obstetrics & Gynecology, Vancouver, Canada, 25-29 September 2005.

Hisham M Mirghani, Sarath Weerasinghe, Mutaira Ezimokhai, John R Smith. Ultrasonic estimation of fetal weight at term: An evaluation of eight formulae. The 7th World Congress of Perinatal Medicine, Zagreb, Croatia. September 20-24, 2005.

Hisham Mirghani, Reem Zayed, Letha Thomas, Mukesh M. Agarwal. Early sonographic changes of fetal body composition in gestational diabetes mellitus. Dubai International Obstetrics, Gynecology and Fertility Conference (DIOFCE). Dubai, United Arab Emirates. September 10-12, 2005.

Hisham M Mirghani, Omer A. Hamud. The effect of maternal diet restriction on pregnancy outcome. XXI International Congress of the Society: The Fetus as a Patient 2005". Buenos Aires, Argentina. April 27-30, 2005.

RESEARCH GRANTS - 2005

UAEU Individual Research Grant 2005

Prof M Ezimokhai (PI). Prevalence of and Health Impact of P.C.O.S. among Emirati women in Al Ain.

Drs OT Osman (PI), Rizk DEE. Prevalence and functional morbidity of the premenstrual dysphoric disorder among adult women patients in Al-Ain primary care setting.

Dr D Rizk (PI). Prevalence and impact of the premenstrual syndrome in adolescent schoolgirls in Al-Ain

UAEU Interdisciplinary Research Grant 2005

Dr D Rizk (PI). Effects of ageing versus ovariectomy on pelvic floor function in a female rat model

Department of Pediatrics

Prof S A Uduman	Professor, Acting Chairman	Ms A Al Kendi	Research Assistant
Prof L Al Gazali	Professor	Mr T Pramathan	General Technician
Prof Y Abdulrazzaq	Professor	Mr J Kochiyil	General Technician
Dr I Amirlak	Associate Professor	Ms R Clemente	Secretary
Dr A Gururaj	Associate Professor	Ms M Al Badwawi	Secretary
Dr H Narchi	Associate Professor		
Dr S E Al-Hammadi	Assistant Professor		
Dr B G Balhaj	Teaching Assistant		
Dr M Al Samri	Teaching Assistant		
Dr Fatma Al-Jasmi	Teaching Assistant		
Dr RAM Mahmoud	Teaching Assistant		
Dr S Eisa	Teaching Assistant		
Dr AD Al Suwaidi	Teaching Assistant		

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Standing from left to right: Mr. Pramathan, Ms. R Clemente, Dr. H Narchi, Dr. Gururaj, Dr. S Al-Hammadi, Mr. J Kochiyil, Mr. Jamal

Seated from left to right: Prof. L. Al-Gazali, Prof. SA Uduman, Prof. Y. Abdulrazzaq, Dr. I. Amirlak.

RESEARCH PROFILE

GENETICS/BIRTH DEFECTS (INCLUDING NEURO-GENETICS)

The department has a strong research interest in the area of birth defect/dysmorphology and brain malformations including nervous system dysgenesis. Several disorders have been studied at the clinical and molecular level. For example, familial and sporadic forms of cerebral dysgenesis were studied and a new type of agyria-pachygyria associated with agenesis of corpus callosum was characterized, a severe form of a syndrome of myotonia and bone dysplasia [Stüve-Wiedemann Syndrome (SWS)] was identified to be common in the population of the UAE. Founder mutation in the Leukemia inhibitory factor receptor (LIFR) was found in all families affected with SWS in this population. A birth defect registry for Al Ain Medical District was established by the department, which has gained membership of the International Clearing House for Birth Defects. Several studies from this register were published identifying the incidence and pattern of the various types of birth defects in this population together with establishing risk factors involved in their etiology.

In addition, the group has been investigating the reasons why some anti-epileptic drugs (vigabatrin, lamotrigine) ingested by women during pregnancy cause neural tube and other defects. Departmental researches have already established that these drugs are teratogenic. It was established that methionine was 5 times lower in embryo of treated pregnant mice than in non-treated controls. Studies are ongoing to determine the impact of folic acid and vitamin B12 supplementation on the frequency of occurrence of anomalies in animal models.

Aflatoxins are commonly found in nuts, grains and have been found to be increased in pregnant women and their offspring. Study is ongoing to determine teratogenic effects of aflatoxins in mice.

The department is also interested in mapping recessive genetic disorders using the concept of homozygosity mapping, particularly disorders which are common or unique to this population. For example, a gene for Joubert syndrome, which seems to be common in Arabs, was mapped to chromosome 9q34.3 and genetic heterogeneity was established. Subsequently other genes for Joubert Syndrome were mapped and mutations were identified in families from UAE. Another new type of epiphyseal dysplasia was described in a family from UAE and a gene was mapped to chromosome 15q26. Several other disorders are currently being investigated using the same concept.

Metabolic disorders are common in the UAE. The department is active in establishing the prevalence of different metabolic disorders in the UAE population.

An ongoing study aims to determine prevalence of alcaptonuria within UAE population.

PERINATAL NUTRITION AND NUTRITIONAL DISORDERS

The department is involved in studies on micronutrients abnormalities in pregnancy and the effect on the fetus/newborn. The preliminary results suggest that micronutrient deficiency is common in pregnancy and outcome studies are in progress.

The department has been active through the years in experiments involving amino acids levels at different ages in the UAE population and showed that some amino acids were abnormally high in newborn infants using the then available parenteral amino acid solution. This led to a change in the solutions use in the Medical District.

The group working on reproductive toxicology has established that aflatoxin (a fungus toxin) contamination of foods is very common, and that aflatoxins have been detected in blood of pregnant women and their offspring in larger amounts than is acceptable. Measurement of aflatoxin in breast milk of lactating mothers is in progress. The results give a much clearer picture of exposure of infants to aflatoxins.

OTHER AREAS OF RESEARCH

Other areas of research include clinical and immunological aspects of hepatitis C, seroepidemiology and neonatal screening of CMV and other congenital infections. Clinical research in neurology includes profile of epilepsy and drug therapy of epilepsy in the UAE as well as brain imaging and epidemiology of cerebral palsy.

Other activities of the department include establishing normal growth charts for children from the UAE from ages 0-18 years, and the size at birth of infants born to UAE nationals. These growth charts will provide the first standards for assessing intrauterine and postnatal physical growth of UAE newly born infants and children.

Outcomes of prematurity, especially in the very-low birthweight and extremely low birthweight groups in the local population.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

- Abdulrazzaq YM, Ibrahim A, Dawson K. (2005). Beta-Thalassemia major and its effect on amino acid metabolism and growth in patients in the United Arab Emirates, *Clinica Chimica Acta*, 352(1-2):183-190
- Abdulrazzaq YM, Padmanabhan R, Bastaki SMA, Ibrahim A, Nurulain M, Shafiullah M. (2005). Effect of maternal administration of vigabatrin during late gestation on fetal-placental amino acid profile in the mouse. *Reproductive Toxicology*, 20(4):549-60.
- Agwu JC, Narchi H. (2005). In a preterm infant, does blood transfusion increase the risk of necrotizing enterocolitis? *Arch Dis Child*. 90:102-103.
- Al-Gazali LI, Alwash R, Abdulrazzaq YM (2005). United Arab Emirates: Communities and Community Genetics. *Community Genet*, 8:186-196.
- Al-Gazali LI. (2005). Attitudes towards genetic counselling in the UAE. *Community Genet*, 8:48-51.
- Dawodu A, Al-Gazali LI, Varady E, Varghese M, Nath K, Rajan V. (2005). Genetic contribution to high neonatal lethal malformation rate in the UAE. *Community Genet*, 8:31-34.
- Eapen V, Gururaj AK. (2005). An open clinical trial of risperidone in children with seizures and hyperactivity. *J Pediatric Neurology*, 3:31-34.
- Eapen V, Gururaj AK. (2005). Risperidone treatment for children with developmental disorders and ADHD. *Primary Care Companion, J Clinical Psychiatry*, 7:221-224.
- Eyre S, Roby P, Wolstencroft K, Spreckley K, Aspinwall R, Bayoumi R, Al-Gazali L, Remesar R, Beighton P, Gleg-horn L, Wallis G. (2005). Identification of a locus for a form of spondyloepiphyseal dysplasia on chromosome 15q26.1: exclusion of aggrecan as a candidate gene. *J Med Genet* 2005;42:e34.
- Giunta C, Randolph A, Al-Gazali LI, Brunner HG, Kraenzlin ME, Steinmann B. (2005). Nevo syndrome is allelic to the kyphoscoliotic type of Ehlers-Danlos syndrome (EDS VIA). *Am J Med Genet*, 133:158-164.
- Gururaj A, Varady E, Sztriha L, Al Gazali LI, Al Suhaili A, Gorka W, Nor. (2005). M. EEG, Doppler vascular scans and SPECT in a child with hydranencephaly and intractable seizures. *J Child Neurology*, 20:446-9.
- Gururaj AK, Sztriha L, Hertecant J, Johansen J, Nork M, d'Azzo A. (2005). Neuroradiological findings in children with GM1 gangliosidosis. *J Child Neurology*, 20:57-60.
- Horita S, Yamada H, Inatomi J, Moriyama N, Sekine T, Igarashi T, Endo Y, dasouki M, Ekim M, Al-Gazali L, Shimadzu M, Seki G, Fujita T. (2005). Functional analysis of NBCI mutants associated with proximal renal tubular acidosis and ocular abnormalities. *J Am Soc Nephrol*, 16:2270-2278.
- Narchi H, Jones KV. (2005). Are routine urine cultures helpful in the management of asymptomatic infants or preschool children with a previous urinary tract infection? *Arch Dis Child*. 90: 103-104.
- Narchi H. (2005). *Kluyvera* urinary tract infection: case report and review of the literature. *Pediatr Infect Dis J*. 24:570-2.
- Narchi H. (2005). Pre-Anesthetic Evaluation: The Role of the Pediatrician. *Int Pediatr*. 20:202-209.
- Narchi H. (2005). Risk of hypertension with multicystic kidney disease: a systematic review. *Arch Dis Child*, 90:921-924.
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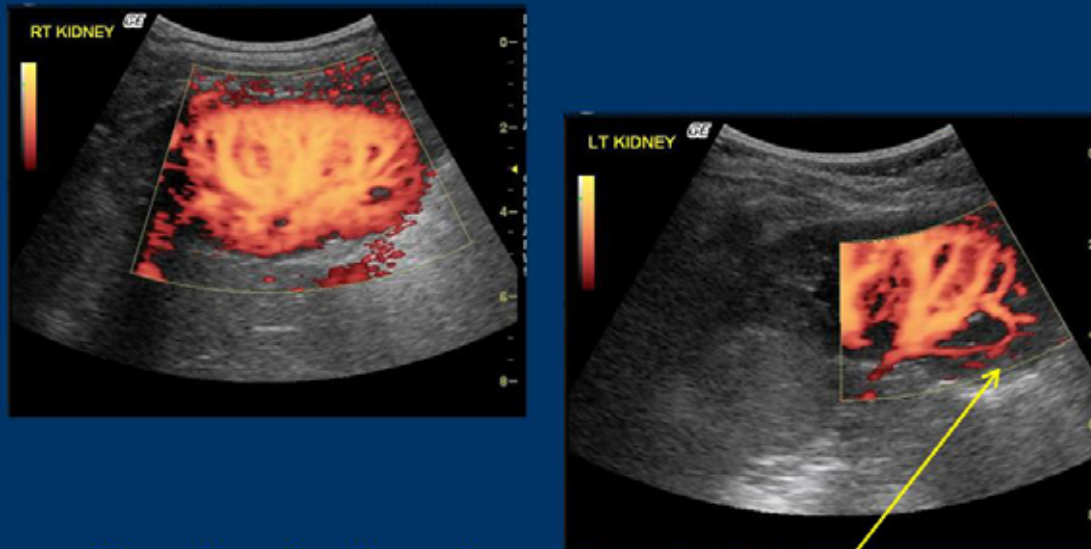
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Power Doppler

Normal



Parenchymal involvement: areas of diminished flow
(constriction of the peripheral arteries).

12

Normal power Doppler ultrasound flow study of a normal kidney (on the left) in comparison with diminished renal flow in the cortex of a kidney during an episode of acute pyelonephritis (on the right). Shown at the presentation "Renal power Doppler in urinary tract infections" at the Royal College of Paediatric and Child Health Annual Meeting (2005), York, United Kingdom.

Department of Pathology

Dr A Castella	Associate Professor, Acting Chairman	Ms A Matera	Senior Technician
Dr M Agarwal	Associate Professor	Ms A Mathew	General Technician
Dr SM Chong	Associate Professor	Ms K Al Ghanem	Secretary
Dr S Al Salam	Assistant Professor		
Dr A Al Bawardi	Teaching Assistant		
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RESEARCH PROFILE

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

Hematopathology: (Dr. Antonio Castella)

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

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

The Pathology department undertook a project, in collaboration with Tawam and Al Ain Hospitals,

to study the pattern of lymphomas in the UAE.

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

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

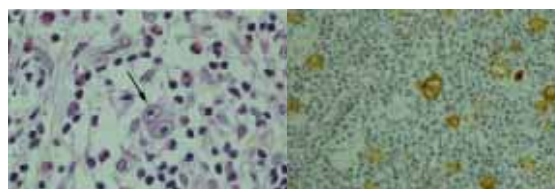


Figure: Left side, classic binucleated Reed-Sternberg cell in a case of Hodgkin's disease (arrow) (H & E x 40), right side, immunohistochemistry with CD30 antibodies highlights the Reed-Sternberg cells (dark brown color).

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

Another project is under way which will study the presence of Epstein-Barr virus (EBV) in Hodgkin's disease cases in the UAE. The presence of EBV will be determined by immunohistochemistry for the latent membrane protein I and in situ hybridization for EBV encoded RNA (EBER).

Clinical chemistry: (Dr. Mukesh M. Agarwal)

The prevalence of diabetes mellitus in the UAE is the second highest in the world. Type 2 diabetes is occurring in young children and diabetes in pregnancy (GDM) is emerging as a major epidemiological challenge. Much of our research effort is directed at GDM. How to screen a large population in a cost-effective manner? Are the occidental criteria for diagnosis valid for the local population? These are some of the many questions we have been trying to answer. All research is directed at practical patient problems confronting us on a day-to-day basis.

Histopathology/lymph node and bone marrow pathology: (Dr. S.M. Chong)

The incidence of malignant lymphomas is increasing worldwide. Curiously, however, there are pronounced differences in the incidence of the different types of lymphoma in different parts of the world.

A pilot study has been performed of the differences between lymphoma in the UAE and in Singapore and the findings presented at the 23rd World Congress of Pathology and Laboratory Medicine in Istanbul in May 2005.

In collaboration with Dr. Suhail Abdullah from the Department and Dr YC Lim of the Department of Pathology of the National University of Singapore, I am studying the role of leukotriene B4 in malignant lymphoma growth and survival; the role of lipid mediators, LTB4 and LXA4 as inflammatory and immune modulators in Hodgkin lymphoma; and the expression of CD137 on Hodgkin and Non-Hodgkin lymphoma Cells. Dr. Lim and I are also continuing our previous studies on lymphoma cell interactions with endothelial adhesion molecules under flow.

Histopathology/ lymphoma/ Breast pathology / Gastrointestinal pathology/ Molecular biology (Dr. Suhail Al-Salam)

The epidemiology of Hodgkin's lymphoma (HL) shows wide geographic variation in histological subtypes and in its association with the Epstein-Barr virus (EBV). The proportion of EBV positive

HL is low in industrialized countries, high in non-industrialized countries and intermediate in early-industrialized countries. Reports from the Arabian Gulf and Middle East are few. The aim of our study was to determine the epidemiology of HL in The population of United Arab Emirates (UAE) nationals, an early industrialized country in the Arabian Gulf, and to delineate the extent of its association with EBV. We will review The cases of HL for the period 1988 through 2004 for histological classification and demographic data. All Cases diagnosed as Hodgkin's lymphoma will be examined for the presence of EBV using immunohistochemistry (IHC) for the latent membrane protein I (LMPI) and in-situ hybridization (ISH) for EBV encoded RNA (EBER) to determine the prevalence of EBV in Hodgkin cells and its possible role in the pathogenesis of Hodgkin's lymphoma.

In addition a second project is under way studies the detection of HPV nucleic acid and expression of E6, E7, p53, pRb, p16 and bcl2 in breast, gastric, colonic carcinomas among UAE nationals Human papilloma virus (HPV) has been implicated as an etiologic agent for the development of primary carcinoma of uterine cervix. Few reports had studied the possible role of HPV in the development of breast, colonic and gastric carcinomas. In the United Arab Emirates (UAE), breast, gastric and colonic carcinomas are among the 10 most common cancers, i.e. the 1st, 4th, and 6th, respectively.

This project will help us to understand the role of HPV in the development of breast, gastric and colonic carcinomas and may enable us to characterize a method for early detection of these cancers, and later these findings might be used to help in the prevention and management of cancers.

Departmental Undertaking:

Drs Alia Al Bawardi and Saeeda Al Marzooqi (resident trainees) have initiated a project under the guidance of the faculty members .A web-based "COM - Case of the Month" series on interesting cases recently diagnosed in the Al Ain Medical District (AAMD) is incorporated into the departmental listing under the FMHS website . These cases are presented as quizzes and are chosen to illustrate unusual diagnoses seen at Al Jimi and Tawam Hospitals. Classical pathological features and well as explanations with relevant recent publications are presented.

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RESEARCH GRANTS 2005

FMHS New Research Grant 2005

Drs S Al-Salam (PI), H El-Teraifi, A Castella, Ms A John. Expression of EBV in Hodgkin's Lymphoma among UAE nationals, In situ hybridization and immunohistochemical study.

Department of Pharmacology_____

Prof G Petroianu Prof A Adem Dr MY Hasan Dr S Bastaki Dr S Attoub Dr I Chandranath Ms K Arafat Mr SM Nurulain Ms S Duncan	Professor, Chairman Professor Associate Professor Associate Professor Assistant Professor General Technician General Technician General Technician Secretary	Central Facilities Dr M Kosanovic Chief Technician Mr R Sheen Senior Technician Dr M Al sultan Veterinarian (Animal House) Mr M Shafiullah Technician(Animal House) Mr M Elwasila Technician(Animal House)
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*Standing from left to right: Mr. M Shafiullah, Mr SM Nurulain, Mr R Sheen, Mr C Saeed, Mr. O Naseer,
 Seated from left to right: Ms S Duncan, Dr SI Chandranath, Prof A Adem, Prof G Petroianu,
 Dr M Kosanovic, Ms K Arafat and Dr S Bastaki.*

RESEARCH PROFILE

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

Diabetes

Mechanisms of Apoptotic Cell Death in Diabetes

In almost all multicellular organisms, cell suicide or apoptosis appears to play an important role in the maintenance of cellular homeostasis. Apoptosis is tightly regulated by a set of genes that either promote apoptosis or promote cell survival. Although a number of stimuli appear to trigger the process of apoptosis, there are two major signaling pathways of apoptosis: the death receptor pathway and the death receptor-independent or mitochondrial pathway. Mechanisms of apoptotic cell death are being studied in kidneys of an animal model of diabetes. The ultra structural features in the tubules seem to implicate apoptosis in the pathology of renal nephropathy. In addition we reported, for the first time, a significant loss of foot processes of podocytes (*) in the diabetic rat kidney (Fig.1 left). These findings could contribute to the understanding of the patho-physiology of diabetic nephropathy.

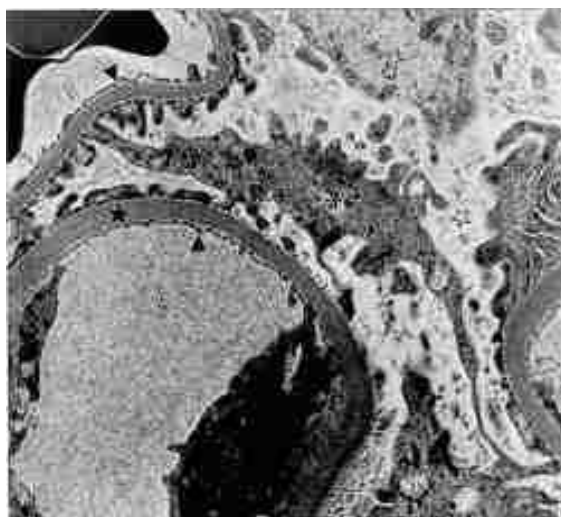


Figure 1

Neurodegenerative Diseases

Novel Selective Ligands for Muscarinic Acetylcholine Receptors

Five muscarinic acetylcholine receptor subtypes (M_1 - M_5) have been cloned and are found in the brain. However, the pharmacological identification of the subtypes responsible for the various central effects of the muscarinic drugs is difficult due to

the lack of highly selective muscarinic agonists and antagonists. We have isolated muscarinic M_1 and M_4 receptor subtype selective toxins from mamba snake (*Dendroaspis*) venoms. At present the status of M_1 and M_4 receptors in health and disease states in humans are being investigated. Our results show significant decrease of M_4 , but not of M_1 receptors in the hippocampus of Alzheimer's patients compared to controls. Moreover, changes in these receptors in adrenalectomized animal models which have been shown to have a selective loss of hippocampal neurons. Attempts to isolate and characterize M_2 , M_3 , and M_5 selective toxins is also in progress. Behavioral, biochemical and electrophysiological techniques are also used in understanding the role of other neurotransmitters in diabetes, epilepsy, aggressive behavior, aging, and degenerative diseases.

Neuroscience

- a) Neurotransmission: Studying application of behavioral, biochemical and electrophysiological techniques in understanding the role of neurotransmitters in various disorders (diabetes, epilepsy, aging, neuro-degenerative diseases). Findings indicated significant modification of various neurotransmitters in these disorders. Alteration in calcium mobilization and free radical system may be a common factor accounting for some of these changes.
- b) Heavy Metals Intoxication: Investigating impact of heavy metals toxicity on nerve and muscle. Free radicals may be involved in metals toxicity and antioxidants like vitamin E & C may have a protective role against metals effects.

Gastroenterology

Treatment of Peptic Ulceration

Leptin is produced by fat cells (adipocytes), and is involved in the control of food intake and energy metabolism in humans. Recently, the role of Leptin as a growth factor has been appreciated, and our study investigates its role on the rate of healing of gastric ulcers in rats because some growth factors are known to protect the gastric mucosa.

In a second project the antisecretory and antiulcer activity of the new proton pump inhibitor esomeprazole (EP) are being investigated. The antiulcer properties of EP are being studied in an animal model of peptic ulceration and includes comparisons with other proton pump inhibitors, the role of prostaglandins and nitric oxide in its action, and the molecular site of action on gastric H^+/K^+ -ATPase.

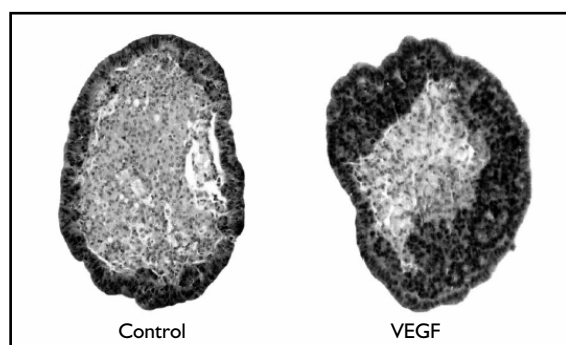
Clinical toxicology

Therapy of acute poisoning, organophosphates

Organophosphorus compounds (OPCs) are esterase (ChE) inhibitors widely used in agriculture, in industry and technology, and in military technology. According to the WHO, more than one million casualties per year are due to OPC exposure. Countries of the Indian subcontinent and adjacent regions top the list. While use of atropine in the therapy of acute OPC poisoning is well-established clinical practice, the use of oxime enzyme reactivators (pralidoxime, PRX) is a hotly debated issue. Recent *in vivo* (large animal) data from our laboratory shows that PRX produces a spurious signal when ChE is determined photometrically (Pralidoxime Induced Esteratic Pseudo Activity; PIEPA). True enzyme protection/reactivation is thus minimal. Furthermore high dose PRX increases the “time-to-extubation (TTE)” and mortality as compared to identical therapy without PRX (animal data). The paradigm of enzyme reactivation in POX poisoning must be reassessed and alternatives developed. Screening of benzamide compounds with ChE protective capabilities is a present priority of our group. Preliminary experiments performed in our laboratory *in vitro* and *in vivo* suggest that the benzamide compound metoclopramide (MCP) is partially protective against esterase inhibition by OPCs.

Oncology

Implication of STAT3 signaling in human colon cancer cell invasion and tumor growth.



Cancers present overexpression and constitutive activation of several signaling pathways including the phosphatidylinositol 3-kinase and STAT3 which are implicated in cell survival, proliferation, and invasion. We demonstrated that intestinal trefoil factor (TFF3) and vascular endothelial growth factor (VEGF) (see figure) induced cellular invasion through STAT3 signaling in human colorectal cancer cells. Depletion of the STAT3 by RNA interfer-

ence, and pharmacological inhibition of STAT3 phosphorylation by cucurbitacin or STAT3 inhibitory peptide abrogates TFF3- and VEGF-induced cellular invasion and reduced colonic tumor growth. Our data open new therapeutic strategies targeting STAT3 signaling in colorectal cancer patients.

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al-Ramadi BK, Fernandez-Cabezudo MJ, Hasan MY, Adem A, Fahim M. (2005). Cellular and Molecular Aspects of Immunotoxicity Induced by Lead: A Major Environmental Pollutant. 6th Annual UAE University Research Conference, Al Ain, UAE.

Attoub S, Rivat C, Bruyneel E, Redeuilh G, Gespach C. (2005). Implication of SYAY3 signaling in Human Colon Cancer. EUROCANCER, Paris, France, June 2005.

Bastaki SMA, Padol IT, Dunphy ML, Seto V & Hunt RH. (2005). Effect of aspirin and ibuprofen alone or in combination in the pathogenesis of gastric ulcer in rats in vivo. United Europe Gastroenterology Week, Copenhagen, Denmark, 15-19.

Bastaki SMA, Padol IT, Dunphy ML, Seto V & Hunt RH. (2005). Effect of ibuprofen alone or in combination with aspirin in the pathogenesis of gastric ulcer in rats in vivo. World Congress of Gastroenterology, Montreal, Canada, 10-14 September.

Dicou E, Attoub S, Gressens P. (2005). Neuroprotective effects of leptin. International Neuroscience Conference, Al Ain, United Arab Emirates.

- Fahim MA, Hasan MY, Alshuaib WB. (2005). The effects of Aloe Vera on platelet aggregation in mice cerebral microcirculation elicited by hyperthermia. *Experimental Biology*, 2005.
- Hasan MY, al-Ramadi BK, Fahim MA, Fernandez-Cabezudo MJ, Adeghate E, Adem A, Zoubeidi T, Behjat S, Karlsson E. (2005). Studying the Use of Herbal Medicine and Complimentary Therapies for Diabetes Treatment by the UAE Population. 6th Annual UAE University Research Conference, Al Ain, UAE.
- Hasan MY, Fahim MA, Petroianu G, Adem A. (2005). Biochemical and Neuropathological Mechanisms of Toxin Induced Parkinson's Disease. 6th Annual UAE University Research Conference, Al Ain, UAE.
- Howarth FC, Adem A, Al Ali NA, Al Bastaki AM, Srour FR, Hmoudi RO, Ghaleb NA, Chandler NJ, Dobrzynski H. (2005). Effects of Atrial Natriuretic Peptide on Contraction and Intracellular Ca^{2+} in Ventricular Myocytes from Streptozotocin-Induced Diabetic Rat. 6th Annual UAE University Research Conference, Al Ain, UAE.
- Petroianu G (2005). Pain Control in Oncology: Tools of the Trade. ARAB HEALTH: Middle East Oncology Symposium, Dubai, UAE.
- Petroianu G. (2005). Chronic Pain: New Treatment Tools. First Tawam Pain Conference. Al Ain, UAE.
- Petroianu G. (2005). Common Drug Interactions in Primary Care. Update in Family Medicine, Al Jinan Medical Centre, Dubai, UAE.
- Petroianu G. (2005). Community Aquired Pneumonia: Guidelines & Antibiotics. Pfizer sponsored Meeting, Al Ain, UAE.
- Petroianu G. (2005). Headache: A Review of the Pharmacologic Treatment Options. International Ophthalmic Conference, Ahalia Hospital, Abu Dhabi, UAE.
- Petroianu G. (2005). Multimodal Perioperative Analgesia: Is there Life beyond Opioids? Dubai International Anesthesia & Critical Care Conference & Exhibition, UAE.
- Petroianu G. (2005). Neuropharmacology Review. International Neuroscience Conference, Al Ain Pre Conference Symposium, Dubai.
- Petroianu G. (2005). Opioid Rotation. Third Annual Workshop on Pain Therapy. Pain Therapy Research Group, Al Ain, UAE.
- Petroianu G. (2005). Organophosphate Intoxication: Mythology vs. Reality. Third Qatar International Medical Congress, Doha, Qatar.
- Petroianu G. (2005). Organophosphorus Induced Poisoning: Myth and Reality. Hungarian Society of Experimental and Clinical Pharmacology. Hungarian Academy of Sciences. Issekutz Medal. Budapest, Hungary.
- Petroianu G. (2005). Pharmacology of Linezolid: The First Oxazolidinone. Therapy of Serious Gram Positive Infections, Al Ain, UAE.
- Petroianu G. (2005). Pharmacology of PDE-5 Inhibitors. Alexandria Satellite of the International Congress of Andrology Pan Arab Society of Andrological Sciences, Alexandria, Egypt.
- Petroianu G. (2005). Pharmacology Review of Some of the Drugs used in Headache Therapy. Third Annual Workshop on Pain Therapy. Pain Therapy Research Group, Al Ain, UAE.
- Petroianu G. (2005). Pre-Hospital Intubation: Establishing Correct Tube Position. Emergency Medical Services Congress (Arab Health). Dubai, UAE.
- Petroianu G. (2005). Procedural Sedation & Analgesia: Myth & Reality. Middle East Trauma 2005 (Arab Health). Dubai, UAE.
- Petroianu G. (2005). Sexual Dysfunction: A Pharmacology Review. The First Amiri Endocrinology Conference. Faculty of Medicine-Jabriya, Kuwait City, Kuwait.
- Petroianu G. (2005). Should Statins be Added to Drinking Water? Update in Family Medicine, Al Jinan Medical Centre, Dubai, UAE.
- Petroianu G. (2005). To be or not to be (selective): Alpha blockers for BPH with LUTS. 2nd Pan Arab Continence Society Congress. Dubai, UAE.
- Petroianu G. (2005). Treatment of Opioid induced Constipation. Third Annual Workshop on Pain Therapy Pain Therapy Research Group, Al Ain, UAE.
- Petroianu GA, Arafat K, Nurulain SM, Shafiullah M, Hasan MY, Schmitt A. (2005). Tiapride pre-treatment in acute exposure to Paraoxon: Comparison of effects of administration at different points-in-time. 6th Annual UAE University Research Conference, Al Ain, UAE.
- Prevost GP, Lonchamp MO, Holbeck S, Attoub S., D. Zaharevitz, M. Alley, Wrigth J, Brezak MC, Coulomb H, Savola A, Huchet M, Chaumeron S, Nguyen QD, Forgez P, Ferrandis E, Roubert P, Gespach C and Kasprzyk PG. (2005). The novel inhibitor of heterotrimeric G-protein signaling BIM - 46174, enhances the anticancer activity of cisplatin in human NSCLC lung tumor xenografts. 96th Annual meeting AACR. April, Anaheim, California, USA.
- Rivat C, Bruyneel E, Redeuilh G, Bracke M, Gespach C, Attoub S. (2005). Implication of STAT3 signaling in human colonic cancer cells during Intestinal trefoil factor (TFF3) and VEGF- mediated cellular invasion and tumor growth. EURO-CANCER, Paris, France.
- Rivat C, Bruyneel E, Redeuilh G, Gespach C, Attoub S. (2005). Implication of STAT3 signaling in human colon cancer cell invasion and tumor growth. The 6th Annual Research Conference, April 24-26. Al-Ain, United Arab Emirates.

RESEARCH GRANTS 2005

FMHS New Grant 2005

Prof A Adem (PI)

The diverse roles of apolipoprotein E Isoforms in Neurodegeneration.

Drs S Attoub (PI), G Anne-Marie

New therapeutic strategy to inhibit the progression and dissemination of colorectal and lung tumors: targeting the PI3K-Akt signaling pathway.

Drs Bastaki S (PI), I Chandranath

Protective affects of omeprazole (or Lansoprazole)/ ranitidine/CCK-B receptor antagonist on aspirin/NSAID/ stress-induced ulcer in Flinder Rats.

Prof G Petroianu (PI), Dr MY Hasan, Prof E Adeghate, Dr A Saleh, Mr AS Ponery, Mr SM Nurulain.

PPAR activating effect of ACE Inhibitors. Cardio-vascular.

Reproductive toxicologic studies on Topiramate in the mouse.

A Adem (2005).

Effects of volume-depletion on Neurohormones in the Camel.

UAEU Grant

Prof G Petroianu (PI), Dr MY Hasan.

Novel therapy of organophosphate compounds (OPC) intoxication using the benzamide derivative SULPIRIDE: Alternatives to oxime enzyme reactivators. University Grant. Organophosphate compounds (OPCs).

Interdisciplinary Grant (UAE University)

A Adem (2005).

Enhancement of Solubility, Stability, Dissolution Rate, and Bioavailability of Poorly Water-soluble Antifungal Drugs by Complexation with Cyclodextrins. (PI: Dr. Dr. Ali Al-Marzouqi).

A Adem (2005).

In vitro and in vivo animal studies of Nigella sativa extract as an antioxidant in petrochemical pollutant induced oxidative stress. (PI: Dr. Fatima Shad Kaneez).

External Grant

A Adem (2005).

Development of Lewy bodies MRI imaging agents for the early diagnosis of Parkinson's disease and related disorders (PI Omar El Agnaf)

Seed Grant

Dr S Attoub

Impact of the VEGFR Flt-1/KDR tyrosine kinase inhibitor AZD4190 on invasive growth of human colonic cancer cells.

FMHS Equipment Grant

Dr S Attoub

Protected Unit for Small Animal.

Hamdan Award Medical Research Grant 2005

Profs R Padmanabhan (PI), Y Abdulrazzaq, Dr S Bastaki

Department of Physiology

Prof J Morrison	Professor, Chairman	Ms F Abazer	Research Assistant
Prof T El Sharkawy	Professor	Mr S Singh	Senior Technician
Prof M Fahim	Professor	Mr S Dhanasekaran	General Technician
Prof W Lammers	Professor	Ms B Stephen	General Technician
Dr M Ljubisavijevic	Associate Professor	Mr M Qureshi	Assistant Technician
Dr C Howarth	Associate Professor	Mr P Rajagopalan	Secretary
		Mr Saeed	Office Assistant

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RESEARCH PROFILE

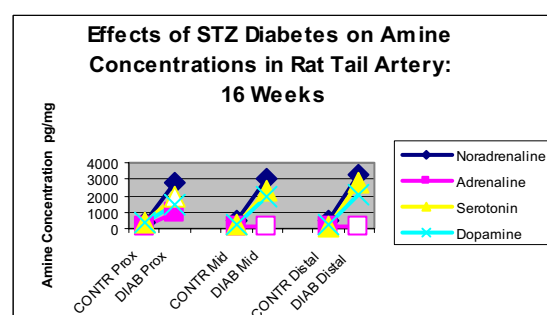
Members of Staff of the Physiology Department have interests in neuroscience and muscle (including skeletal, cardiac and smooth muscle). The experimental work includes normal physiology as well as patho-physiology, particularly in relation to the peripheral nerves, autonomic nervous system, and heart 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.

DIABETIC NEUROPATHY

Peripheral neuropathy is a common complication of diabetes. The patient experiences tinglings and numbness, and/or pins and needles in the extremities, and the sensory disturbance may progress to a burning pain in the hands and feet. The patient may also have difficulty in manipulating small objects because of muscle weakness in the hands. Typically diabetic neuropathy affects the longest nerve fibres in the body. In some patients the function of the autonomic nerves that control the heart, blood vessels and internal organs are also disturbed. These patients experience dizziness or fainting on standing, and may have functional disturbances in their gastro-intestinal or urogenital systems.

The aim of our research is to understand some of the changes in autonomic nerves that accompany prolonged high blood sugar or diabetes in an experimental model. Recently we have demonstrated length-dependent changes in noradrenaline and other amines in the sympathetic nervous system.

The long nerve fibres of the sympathetic nervous system show increased concentrations and altered metabolism of the transmitter, noradrenaline, and its precursor, dopamine, as well as of other amines. The diagram below compares the effects of STZ diabetes on the amine concentrations in the rat tail artery in different sections of the vessel. Experiments are being conducted that look at the release of amines from these autonomic nerve terminals, supported by a grant from the Sheikh Hamdan Medical Research Foundation and UAEU Interdisciplinary grants. More recently we have been developing a model of Type II diabetes, and similar studies have commenced using this model.



AGING AND NEURODEGENERATIVE DISORDERS

Studies on **aging and neurodegenerative disorders** have focused on synaptic plasticity and synaptic remodelling, particularly at the nerve-muscle junction in various peripheral neuropathies including those caused by diabetes, aging and heavy metal poisoning. Electrophysiological techniques and electron microscopy are used in combination

to focus on changes in muscular performance in these conditions. It is hypothesised that free radicals are involved in these nerve injuries and antioxidants like vitamin E & C may have a protective role. Studies on the cerebral microcirculation include changes in the susceptibility to thrombus formation in the brain, and the effects of metals, aspirin and heat.

MUSCLE

The dynamics of the control of the muscles is another focus of activity involving electrophysiology and mathematical modelling, and seeks to explain the influence of various physiological and pathological conditions on changes in muscle performance. In particular, the effects of chronic ischemia and muscle fatigue are currently being investigated. The model of chronic ischemia induced *in vivo* by femoral artery occlusion is employed; the effects of exogenously applied Neuropeptide-Y (NPY) are of interest because the angiogenesis and revascularisation it can induce are used as tools to alter the dynamic properties of skeletal muscle. Changes in muscle dynamics are estimated by monitoring various parameters i.e. EMG, twitch force, force/time integral, etc. during various non-fatiguing and fatiguing protocols induced by electrical stimulation of muscle nerves and ventral spinal roots. The results are relevant for better understanding of changes of intra-muscle dynamics in various conditions and probing the possibility that NPY may be a potential drug in treatment of ischemic disease.

DIABETES AND HEART FUNCTION

Cardiovascular complications are the most common causes of morbidity and mortality in diabetic patients. Diabetic cardiomyopathy is associated with a variety of cardiac dysfunctions, which are independent of vascular complications. We are currently investigating the mechanisms that underlie contractile defects in cardiac muscle in various experimental models of diabetes. Much of our research is conducted in cardiac myocytes isolated from different regions of the heart. Recent projects have included an investigation of contraction and Ca^{2+} transport in myocytes from C57BL/6J mice which have a genetic susceptibility to develop diabetes when fed a high-energy diet. We have also investigated the effects of multiple low-dose or single high-dose streptozotocin on contraction and Ca^{2+} transport in ventricular myocytes from diabetes resistant and susceptible rats. The recent purchase of a telemetry system (figure 1) is enabling us to remotely monitor the acute and chronic effects of diabetes on electrical activity of the heart and various other experimental parameters. Telemetry data can provide the basis for further de-

tailed studies of different components of the electrical conduction system of the heart, for example the distribution of connexin-43 which is an important gap junction protein, using immunolabelling/confocal techniques (figure 2).

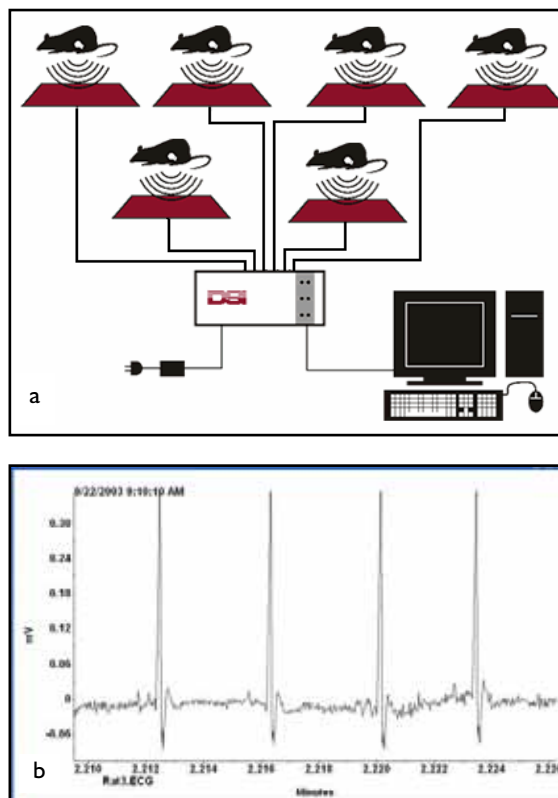


Figure 1: Telemetry system (a) and typical ECG data (b)

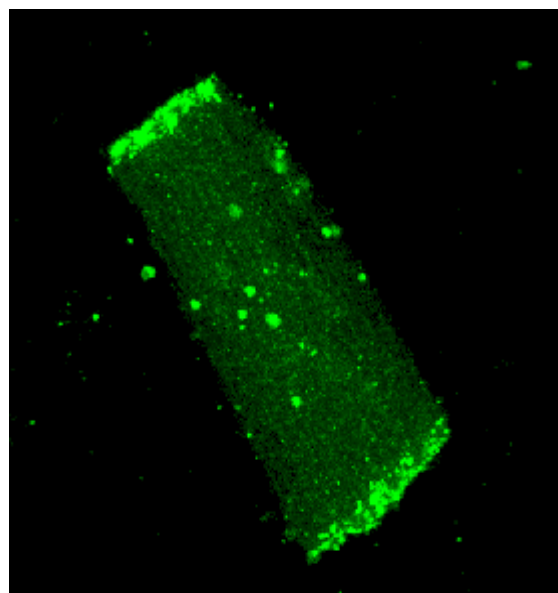


Figure 2 : Connexin-43 labeling in a rat ventricular myocyte. Labeling is particularly obvious at the ends of the cell.

SMOOTH MUSCLE MAPPING

Work in the mapping lab has progressed very well

this year with several major publications. One example of that is shown in the accompanying figures. The goal of this project was to determine the mechanism of pendular contractions, which are contractions that are notorious for sudden changes in rhythm and direction. The approach we chose was to record simultaneously the electrical and mechanical activities in isolated segments of rabbit ileum.

Figure 1 shows the method used. Electrical activities were recorded with a row of 32 extracellular electrodes. Contractions were visualized by placing 20-40 soot markers on the surface of the segment and recording their displacements with a digital video camera. Separate softwares were written to analyze the electrical and the mechanical activities. Tracings of these are shown in figure 2 in which the upper panel plots the electrical signal and the lower the mechanical tracings. From this and many other records, we determined that the pendular displacements followed the propagation of the slow wave. Displacements occurred first towards the origin of the slow wave and then, in the return swing, the markers displaced back to their starting points. Changes in the location of the slow wave pacemaker immediately affected the direction of the pendular contractions. As the slow wave, in the intestine, often changes origin and direction of propagation, this is then immediately reflected in the direction of pendular contractions.

For more details see www.smoothmap.org/pendular which also displays several movies of pendular contractions or you may wish to consult the original paper (Am J Physiol 289:G898-G903, 2005).

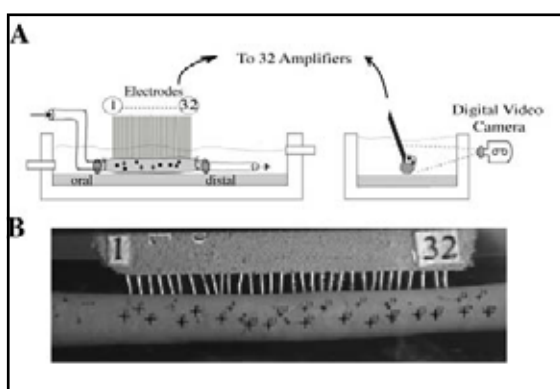


Figure 1:

Panel A: diagram of the experimental set-up with a 250-ml tissue bath, an isolated segment from the rabbit ileum, soot markers applied onto its surface, and a row of 32 extracellular electrodes along its length. A digital video camera, adjacent to the Perspex-walled tissue bath recorded the spontaneous displacements of the markers. Panel B is a video snapshot of the preparation, showing the row of 32 electrodes and several soot markers. Twenty six of those were identified (numbered crosses) and their displacements tracked.

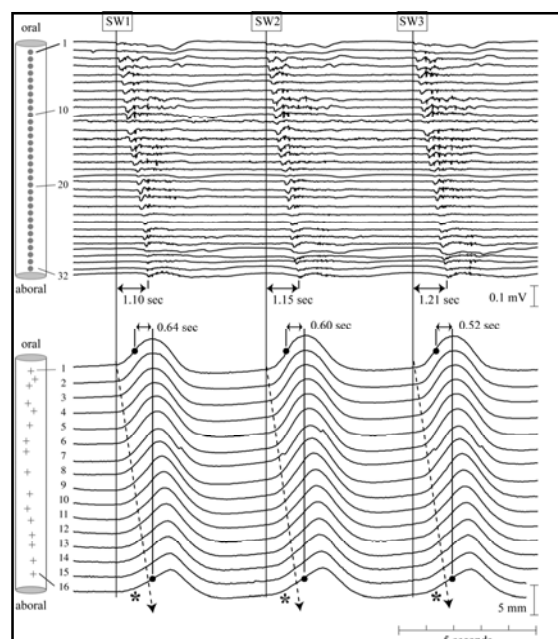


Figure 2:

Pendular displacements during aboral slow wave propagations. Upper panel presents 32 electrograms recorded along the length of an intestinal segment showing three successive slow waves, propagating uniformly from oral to aboral followed, in many tracings, by numerous spikes. The slow wave propagation time from oral to aboral ranged from 1.10 to 1.21 seconds. In the lower panels, the displacements of 16 markers that had occurred in rhythm with the slow waves are presented. The locations of the original markers are depicted in the diagram to the left. Three vertical lines, drawn from the moment of the appearance of the first slow wave in lead I show that the displacements occurred after the initiation of the slow wave. The dashed arrows in the motility tracings represent the timing and direction of the slow waves superimposed on the motility tracings. The timing of the displacements in the first and last marker are indicated by the bullets positioned halfway the contractions. The displacements of the last marker occurred later than that of the first marker although the time differences were less than that of the corresponding slow waves. In addition, the distal markers started to displace before the slow wave had actually reached that area (asterisks).

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Adeyemi EO, Bastaki SA, Chandranath IS, Hasan MY, Fahim MA, Adem A. (2005). Mechanisms of action of leptin in preventing gastric ulcer. *World J Gastroenterol*, 11: 4154-4160.

Blesic S, Stratimirovic Dj, Milosevic S, Ljubisavljevic M. (2005). Detecting long-range correlations in time series of dorsal horn neuron discharges. *Annals of New York Academy of Sciences*. 1048:1-7.

Howarth FC, Adeghate E, Jacobson M. (2005). Short-term effects of streptozotocin-induced diabetes on the electrocardiogram, physical activity and body temperature in rats, *Experimental Physiology*, 90: 237-245.

Howarth FC, Adem A, Adeghate EA, Al Ali NA, Al Bastaki AM, Srour FR, Hammoudil RO, Ghaelb NA,

Chandler NJ, Dobrzynski H. (2005). Distribution of atrial natriuretic peptide and its effects on contraction and intracellular calcium in ventricular myocytes from streptozotocin-induced diabetic rat, *Peptides*, 26: 691-700.

Howarth FC, Jacobson M, Shafiullah M, Adeghate E. (2005). Long-term effects of streptozotocin-induced diabetes on the electrocardiogram, physical activity and body temperature in rats, *Experimental Physiology*, 90: 827-835.

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Howarth FC, Qureshi A, Shahin A, Lukic ML. (2005). Effects of single high-dose and multiple low-dose streptozotocin on contraction and intracellular Ca^{2+} in ventricular myocytes from diabetes resistant and susceptible rats, *Molecular & Cellular Biochem*, 269: 103-108.

Korotkov A, Radovanovic S, Ljubisavljevic M, Lyskov E, Katayeva G, Roudas M, Pakhomov S, Thunberg S, Medvedev S, Johansson H. (2005). Comparison of brain activation after sustained non-fatiguing and fatiguing muscle contraction. A positron emission tomography study. *Experimental Brain Research*. 163: 65-74.

Lammers WJEP. (2005). Spatial and temporal coupling between slow waves and pendular contractions. *Am J Physiol* 289:G898-G903.

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Mensah-Brown EK, Adem A, Conlon JM, Morrison JFB. (2005). Changes in Neuropeptide Y (NPY) - nerves and in NPY binding in the seminal vesicles and prostate gland of the streptozotocin-treated diabetic rat. *Emirates Medical Journal*, 23:221-228.

Seerden TC, Lammers WJEP, De Winter BY, De Man JG, Pelckmans PA. (2005). Spatiotemporal electrical and motility mapping of distension-induced propagating oscillations in the murine small intestine. *Am J Physiol* 289:G1043-G1051.

Thunberg J, Lyskov E, Korotkov A, Ljubisavljevic M, Pakhomov S, Katayeva G, Radovanovic S, Medvedev S, Johansson H. (2005). Brain Processing of Tonic Muscle Pain Induced by Infusion of Hypertonic Saline. *European Journal of Pain*. 9:185-194.

Tock Y, Inbar GF, Steinberg Y, Ljubisavljevic M, Thunberg J, Windhorst U, Johansson H. (2005). Estimation of muscle spindle information rate by pattern matching and the effect of gamma system activity on parallel spindles. *Biological Cybernetics*, 92:3,16-32.

Wang XY, Lammers WJEP, Bercik P, Huizinga JD. (2005). Lack of pyloric interstitial cells of Cajal explains

distinct peristaltic motor patterns in stomach and small intestine. *Am J Physiol* 289: G539-G549.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Ljubisavljevic M. (2005) Transcranial Magnetic Stimulation, in: *Encyclopedic Reference of Neuroscience*. Springer Verlag.

Morrison JFB, Fowler CJ, Birder L, Craggs M, de Groat WC, Downie JW, Drake, MJ, Thor K. (2005). Neural Control of the Bladder: 3rd International Consultation on Incontinence, Monaco 2004. In 'Incontinence' Edited by P Abrams, L Cardozo, S Khoury and A Wein. Third Edition. ISBN 0-9546956-2-3 pp363-422.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Howarth FC, Adeghate E, Jacobson M. (2005). The effects of insulin treatment on heart rhythm, body temperature and physical activity in streptozotocin-induced diabetic rat. *Journal of Physiology*, 568P, PC66.

Howarth FC, Adeghate E, Naseer O, Jacobson M. (2005). Effects of streptozotocin-induced diabetes on heart rhythm in the rat. *International Journal of Diabetes and Metabolism*, 13, 51.

Lammers WJ, Seerden TC, De Man JG, Stephen B, Dhanasekar S, Wahab A, De Winter BY, Pelckmans PA. (2005). Propagating oscillations in the murine small intestine. *Emirates Med J* 23; 60-61.

Lammers WJEP, Abazer F, Stephen B, Ver Donck L, Schuurkes JAJ. (2005). Characteristics of spikes and spike patches in the canine rectum in vivo. *Neurogastroenterology & Motility* 17, 262.

Lammers WJEP, Gharzouli K. (2005). Inhomogeneous peristaltic contractions are caused by the propagation of the slow wave. *Neurogastroenterology & Motility* 17, 246.

Lammers WJEP, Gharzouli K. (2005). Slow wave and peristaltic propagation in the isolated rabbit ileum. *Gastroenterology*, 128, A673.

Lammers WJEP, Ver Donck L, Schuurkes JAJ, Stephen B. (2005). The effects of betanecol on circular and longitudinal spikes in the canine small intestine in vivo. *Gastroenterology*, 128, A673.

Seerden TC, Lammers WJEP, Stephen B, De Man JG, Pelckmans PA. (2005). Mechanism of distension-induced propagating oscillations in the murine small intestine. *Gastroenterology*, 128, A675.

Shiels HA, O'connell AD, Qureshi MA, Howarth FC, White E, Calaghan SC. (2005). Nocodazole disruption of microtubules in the heart of the streptozotocin diabetic rat increases $[Ca^{2+}]$ and contraction. *Journal of Physiology*, 567P, C29.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Fahim MA, Hasan MY, Alshuaib WB. (2005). The effects of Aloe Vera on platelet aggregation in mice cerebral microcirculation elicited by hyperthermia. *Experimental Biology*.

Howarth FC, Adeghate E, Gbewonyo AJ, Tariq S, Qureshi MA. (2005). Ventricular Myocyte Contraction and Intracellular Ca^{2+} in the C57BL/6J Mouse Fed a Fat-Enriched Diet, The 6th Annual UAE University Research Conference.

Howarth FC, Adeghate E, Naseer O, Jacobson M. (2005). Long-term effects of diabetes on heart rhythm in the streptozotocin-treated rat, The First UAE International Conference on Biological and Medical Physics, Al Ain.

Howarth FC, Adem A, Al Ali NA, Al Bastaki AM, Srour FR, Hmoudi RO, Ghaleb NA, Chandler NJ, Dobrzynski H. (2005). Effects of Atrial Natriuretic Peptide on Contraction and Intracellular Ca^{2+} in Ventricular Myocytes from Streptozotocin-Induced Diabetic Rat. The 6th Annual UAE University Research Conference.

Jacobson M, Howarth FC, Adeghate E, Shad Fatima. (2005). Comparison of long-term and short-term heart rate variability time analyses. 6th Annual UAE University Research Conference.

Lammers WJEP, Wahab A, Dhanasekaran S, Stephen B, Singh S. (2005). Construction and usage of multiple extracellular electrodes in biological tissues. First UAE International Conference on Biological and Medical Physics, Al Ain, UAE.

Lammers WJEP, S Dhanasekaran, B Stephen, A Wahab. (2005). Destiny of individual slow waves propagating down the small intestine. 6th UAEU Research Day.

Ljubisavljevic M, Blesic S, Dragasevic N, Milanovic S, Kostic VS. (2005). Comparing tremor dynamics in three kinds of pathological tremors. 16th International Congress on Parkinson's Disease and related disorders, Berlin, Germany.

Morrison JFB, Sheen R, Frampton CN, Dhanasekaran S. (2005). Catecholamine content and noradrenaline release in the stz-diabetic rat seminal vesicle. *Proceedings of the Australian Neuroscience Society*, Sidney, Australia.

Morrison JFB, Sheen R, Frampton CM, Dhanasekaran SD. (2005). Noradrenaline release from the tail artery of the STZ-diabetic rat. *Autonomic Neuroscience*, Marseille, France.

Radovanovic S, Dragasevic N, Maric J, Milanovic S, Ljubisavljevic M, Kostic VS. (2005). Disturbed cerebellar input affects consecutive movement performance: Comparison of healthy subjects and patients with cerebellar ataxia. 16th International Congress on Parkinson's Disease and related disorders, Berlin, Germany.

Rizk EED, Hassan HA, Shafiullah M, Chandranath SI, Al-Kedrah SS, Ramadan, GA, Al-Marzouqi, AH, Fahim MA. (2005). Estrogen and ghrelin decrease pelvic floor muscle

p27kip1 and increase peri-urethral/peri-anal vessel number in rats. 18th Congresso Mundial de Gerontologia – Rio.

RESEARCH GRANTS 2005

FMHS Grants - 2005

Dr FC Howarth (PI), Profs A Adem, G Nicholls, Drs H Dobrzynski, S Benedict, Mr A Qureshi. (2005-2007). Effects of brain natriuretic peptide on cardiac muscle function in the streptozotocin-induced diabetic rat.

Profs J Morrison (PI), M Conlon, A Adem; Drs Mensah-Brown, M Ljubisavljevic. Changes in sympathetic transmitters and synaptic mechanisms in diabetes.

Prof W Lammers (PI), Dr K Gharzouli, Ms B Stephen. Electrical and motility mapping of the Peristaltic Reflex.

UAEU Individual Grants - 2005

Drs FC Howarth (PI), M Jacobson, M Graham (2005-2006). Effects of streptozotocin-induced diabetes on heart rhythm

Prof JM Morrison (PI), Dr E Mensah-Brown. The effects of experimental diabetes on the expression of neuropeptide neurotransmitters and enzymes in tissues, and of their mRNAs in dorsal root ganglia and sympathetic postganglionic cell bodies.

Dr H Kataya (PI), Prof M Fahim, Dr S Karam, Prof B Ramadi. (2005-2007). Ghrelin and recovery after antineoplastic and cytotoxic therapy.

UAEU Interdisciplinary Grants - 2005

Dr FC Howarth (PI), Prof E Adeghate, Drs K Fatima-Shad, M Jacobson, H Dobrzynski, M Jacobson, IT El Mugamer. (2003-2005). Mechanisms underlying the progressive long-term effects of type 2 diabetes on heart muscle function.

Profs G Nicholls, JM Morrison (PI), C Pemberton. Ghrelin and other vasoactive hormones in hypertensive and diabetic rats.

Dr D EE Rizk (PI), Prof M Fahim (2004-2006). Effects of ageing versus ovariectomy on pelvic floor function in a female rat model.

Hamdan Award Medical Research Grant /2005

Drs W Lammers (PI), H Mirghani, Ms B Stephen. Mapping the mechanism of birth.

Others

Drs K Schulze (PI), W Lammers. Mechanics of stomach and intestine
VA Merit Review Grant, USA
Profs G Sieck (PI), M Fahim
Plasticity in diaphragm neuromotor control
NIH Grant (2004-2009)

Department of Psychiatry

Prof O El-Rufaie	Professor, Chair	Dr L Amiri	Teaching Assistant
Prof M Sadeghi	Professor	Mr Saeed Yousef	Technician
	(Clinical Psychology)	Mr D Ranganathan	Secretary
Prof R Ghubash	Professor*	Ms Aisha Al Shamsi	Secretary
Prof V Eapen	Professor	Dr S Sabri	Administrative Assistant
	(Child & Adolescent)	Mr O Pocker	Office Assistant
Dr Ossama Osman	Associate Professor		
Dr Mohammed Salem	Assistant Professor		
Prof R Raguram	Visiting Professor		

*President, Arabian Gulf University, Bahrain.

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RESEARCH PROFILE

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

- Developmental and behavioural problems in school children in the UAE (in collaboration with School Health Department).
- Cognitive functioning among type 2 diabetic patients: A primary care controlled study.
- Eating attitudes and disorder among adolescents in the UAE.
- Child psychiatric disorders in primary care.
- First-episode psychosis presenting at the psychiatric department of Al-Ain Hospital.
- A study on the primary care referrals to the psychiatric department of Al-Ain Hospital.

2. Personality, psychosocial and transcultural aspects of physical illness

Psychosocial aspects of chronic physical illness in children.

3. Cultural aspects of psychiatry

- Help seeking behaviour of psychiatric patients

before attending the psychiatric services at Al-Ain Hospital.

- Dream pattern of psychiatric patients attending Al-Ain Hospital
- Colour preference of patients attending the psychiatric Department of Al-Ain Hospital
- Time estimation of patients with psychiatric disorders attending Al-Ain Hospital

4. Psychiatric Genetics

- Family and phenomenological aspects of Obsessive Compulsive Disorder in collaboration with Obsessive Compulsive Foundation Genetics Collaborative and Neurodevelopmental Genetic Unit, Harvard, USA.
- A study examining the genetic aspects of nocturnal enuresis in collaboration with the Department of Biochemistry and Medical Genetics, Sultan Qaboos University, Muscat.
- "Studies on mitochondrial DNA sequences of autistic children from different geographic regions" in collaboration with Department of Microbiology FMHS and Institute of Virology, Vienna, Austria (funded by FMHS research grant).
- "Subtelomeric chromosome rearrangements in children with unexplained mental retardation"

tion in the population of the UAE" in collaboration with the Department of Paediatrics, FMHS (funded by Sheikh Hamdan Bin Rashid Al Maktoum Award).

- e) Research regarding the genetics of brain malformations, autism and non-syndromic mental retardation in collaboration with Prof. C. Walsch, Howard Hughes Medical Institute, Harvard, Boston, USA.
- f) Study on the genetic aspects of schizophrenia in collaboration with Dr. Joe Gleeson, Neurogenetics Laboratory, University of California, San Diego, USA.

5. Translation, development and validation of psychiatric instruments for use among Arabic speaking population.

- a) Child Behaviour Checklist 2-3 years.
- b) Primary Health Questionnaire.

6. Family and phenomenological study on Tourette Syndrome

Ongoing collaborative projects with Prof. M. Robertson at University College London Medical School, London, UK.

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Eapen V, Ghubash R, Salem MO, Sabri S. (2005). Familial predictors of Childhood Shyness: A United Arab Emirates Study. *Community Genetics* 8(1);61-64.

Eapen V, Gururaj AK. (2005). An open clinical trial of risperidone in children with seizures and ADHD. *Journal of Paediatric Neurology* 3(1); 31-34.

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El-Rufaie OEF. (2005). Primary Care Psychiatry: Pertinent Arabian Perspectives. *Eastern Mediterranean Health Journal* 11(3); 449-458.

Sabri S, Bener A, Eapen V, Abu Zeid MSO, Mazrouei AM, Singh J. (2004). Socio-economic status, Life style and the risk factors for hypertension in a developing Arab Country. *Eastern Mediterranean Health Journal* 10 (4/5); 610-619.

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Eapen V, Kulhara P, Raguram R. (2005). *Essentials of Psychiatry*. Paras Publishing, Hyderabad, India.

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Salem MO. (2005). Heart, Mind and Brain. *Emirates Medical Journal*. 23(3);86-87.

Osman OT, Rizk D, Sabri S. (2005). Premenstrual Dysphoric Disorder Among Women In Al-Ain Primary Care Clinics: Prevalence, Psychosocial Stressors and Demographic Correlates. *Emirates Medical Journal* 23(3); 26.

Eapen V, Pauls DL, Robertson MM. (2005). Complex Segregation Analysis of Obsessive Compulsive Disorder: Evidence for a major locus of inheritance. *Emirates Medical Journal*. 23(3); 88

Gururaj A, Sztriha L, Hertecant J, Eapen V. (2005). A study of Clinical, EEG and Radiological predictors of intractable childhood epilepsy. *Emirates Medical Journal* 23; 22

Nowotny N, Zilahi E, Kolodziejek J, Al Haj MAM, Lussy H, Eapen V (2005). Studies on mitochondrial DNA sequences of autistic children from different geographic regions. *Emirates Medical Journal*. 23(3); 42-43

Bayoumi R, Eapen V, Al-Barwani R, Hill RS, Al Gazali L (2005). The Genetics of Primary Nocturnal Enuresis. *Emirates Medical Journal*. 23(3); 31

Eapen V, Ghubash R, Zoubeidi T, Yunis F, Gururaj A (2005). Prevalence of Developmental Disorders in the UAE. *Emirates Medical Journal*. 23(3); 29

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Eapen V. (2005). Childhood Depression. The Tawam Hospital National Symposium on Depression, Al Ain, May.

Eapen V. (2005). Genetics of Tourette Syndrome. *Neurology Genetics meeting*, Dubai, May.

- Eapen V et al. (2005). Developmental problems in 3-year old children in the United Arab Emirates, 9th European Congress of Psychology, Granada, Spain, July.
- Eapen V et al. (2005). Segregation Analysis of Obsessive Compulsive Disorder, International Neuroscience Conference, Al Ain, UAE, November.
- Eapen V. (2005). Familial and Psychosocial aspects of pediatric cancer: Influence on compliance, coping and recovery, Terry Fox Cancer Research Conference, Al Ain, UAE, November.
- El-Rufaie OEF. (2005). Profile of mental disorder among the UAE elderly population. The Arabian Gulf University Conference, Bahrain, February.
- El-Rufaie OEF. (2005). Psychiatric disorders among primary care patients. Primary Care Psychiatry Workshop, The Arabian Gulf University Conference, Bahrain, February.
- El-Rufaie OEF. (2005). Organiser of the Workshop and Presenting: Somatised depressive disorder in primary health care settings. The 5th GCC Primary Healthcare Conference. Workshop on: Depression in Primary Healthcare Settings. Doha, Qatar, April 2 – 4.
- El-Rufaie OEF. (2005). Personality Disorders and Personality Traits among Type 2 Diabetic Patients. The International Brain Research Organisation (IBRO), Society of Neuroscientists of Africa (SONA) and Collegium Internationale Neuropsychopharmacologicum (CINP) Meetings, Cape Town, South Africa, April.
- El-Rufaie OEF. (2005). Somatisation in primary health care settings. The Tawam Hospital National Symposium on Depression, Al-Ain, May 4 – 5.
- Osman OT. (2005). Pharmacological Management of Depression. Workshop on Depression in Primary Health Care. The 5th GCC Primary Healthcare Conference, Doha, Qatar, April.
- Osman OT. (2005). A Simple Method to Measure Treatment Outcomes Among Patients with Addictive Diseases. 6th Annual UAEU Research Conference, Al-Ain, April.
- Osman OT. (2005). Substance Abuse and Comorbidities Among Arab men in Saudi Arabia. 158th Annual Meeting of the American Psychiatric Association, Atlanta, Georgia, USA, May.
- Osman OT. (2005). The influence of culture and religion on mental health treatment. Proceedings of the XIII World Congress of Psychiatry, Cairo, Egypt, October 15.
- Osman OT. (2005). Arabic Translation of the MINI International Neuropsychiatric Interview (MINI). Proceedings of the XIII World Congress of Psychiatry, Cairo, Egypt, October.
- Osman OT. (2005). Prevalence of Premenstrual Dysphoric Disorder in Al-Ain Primary Care. The 3rd Qatar International Medical Conference. Doha, Qatar, November.
- Salem MO. (2005). Global View on Religion and Mental Health. 1st International Psychiatric Symposium of The Saudi German Hospital, Jeddah, Saudi Arabia.
- Salem MO. (2005). Prevention of Depression using Spiritual Strategies. The Tawam Hospital National Symposium on Depression, Al-Ain, May.
- Salem MO. (2005). Religious Aspects of Psychiatry. British Arab Psychiatric Association meeting, Northampton, UK.
- Salem MO. (2005). Spiritual and Religious Experiences. Bahrain Cultural Centre, Bahrain.
- Salem MO. (2005). Functions of Dreams. UGRU Cultural meeting, UAE University, Al Ain.
- Salem MO. (2005). Spiritually oriented psychoeducation. Emirates Women Society meeting, Al Ain.
- Salem MO. (2005). Help Seeking Behaviour of Psychiatric Patients attending Al-Ain Hospital, UAE. Annual Conference of the British Association of the Behaviour Cognitive Therapists, Canterbury, UK.

Research Grants 2005

FMHS Research Grant 2005

Profs N Nowotny (PI), V Eapen, Dr J Kolodziejek
Studies on mitochondrial DNA sequences of autistic children from different geographic regions.

UAE University Grant 2005

Drs OT Osman (PI), D EE Rizk
Prevalence and Functional Morbidity of the Premenstrual Dysphoric Disorder among Adult Women Patients in Al-Ain Primary Care Settings

Dr OT Osman (PI), Prof O El-Rufaie
Anxiety and Depressive Disorders among Women of Child-Bearing Age in Al-Ain Primary Care Setting: Prevalence, Comorbidity, Level of Functioning and Sociodemographic Correlates

Sheikh Hamdan Bin Rashid Al Maktoum Award 2005

Profs L I Al-Gazali (PI), V Eapen, Dr AK Gururaj, Mr T Pramathan
Subtelomeric chromosome rearrangements in children with unexplained mental retardation in the population of the UAE.

Department of Radiology

Prof P Corr
Prof R Langer
Dr K N van Gorkom
Dr T Al Mansoor
Ms S Al Habsi

Professor, Chairman
Professor & Associate Dean, Clinical Affairs
Associate Professor
Teaching Assistant
Secretary

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RESEARCH PROFILE

Our research interests are focussed on common medical and health issues in the UAE.

Trauma Imaging

Trauma imaging is an important part of our daily work and road traffic accidents are a major cause of morbidity and mortality in the UAE. We have been working with colleagues in orthopaedic surgery to establish the role of radiographs and three dimensional computed tomographic scan models have in assessing the type and extent of scapular fractures.

Sports Injury Imaging

We have started a project to establish the natural history of bone marrow contusion or bone bruise in knee injuries in sports players. Bone marrow contusion is a focal injury to the bone marrow without any signs of fracture on X rays. Bone marrow contusions are readily demonstrated on magnetic resonance (MR) imaging scans of the knee. Contusions to the bone marrow cause considerable bone pain and disability to patients. What is not clear from the literature is what happens to them, do they disappear completely or are they associated with subsequent cartilage and meniscal degeneration.

Computed Aided Detection of Breast Cancer

We have started a project with the information technology department of the UAE University to develop a computed aided detection (CAD) sys-

tem to assist radiologists in distinguishing between benign masses and cancer in the female breast. Breast cancer is increasing in incidence worldwide and early detection of cancer by mammography is recommended in all woman 45 years and older. Thirty per cent of early cancers are missed by radiologists because of interpretative or perception errors. By evaluating focal breast microcalcifications and masses using an automated computer software program we hope to reduce this error rate and improve the accuracy of mammography in the detection of early breast cancer.

Imaging of Early Stroke with CT Perfusion Imaging

Stroke is a common neurological problem in the UAE. Early diagnosis of cerebral infarction and its differentiation from cerebral haemorrhage is extremely important for correct patient management. We have been researching the value of perfusion imaging using computerized tomography to detect early stroke.

Head and Neck Tumour Imaging

Head and neck cancers are common in the UAE, we collaborate with our clinical colleagues in the diagnosis, management and post-operative surveillance of these patients.

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Misser S, Corr P, Jogessar V. (2005). Neutropenic enterocolitis complicating acute lymphoblastic leukaemia. *SAfr J Radiol*, 9:29-32.

Bayat M, Misser S, Mahomed S, Corr P. (2005). Pancreatic hydatid cyst mimicking a choledochal cyst. *SAfr J Radiol*, 9:34-35.

Abdelrahman O. Mohamed, Sandya Joshi, Janusz Czechowski, Frank Branicki. (2005). Hepatocellular carcinoma directly invading the duodenum. *Saudi Med J*, 26:478-480.

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Pui M, Mitha A, Rae W, Corr P. (2005). Diffusion-weighted magnetic resonance imaging of spinal infection and malignancy. *J Neuroimaging*, 15:164-70.

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Corr P. (2005). Imaging of Neuro-AIDS. *International Neuroscience Conference UAE* 26-29th November 2005.

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Langer RD. (2005). Impact of multislice spiral CT on the management of patients with abdominal trauma. *Research Seminar-FMHS*.

Langer RD, Czechowski J, Brannicki F. (2005). Impact of multislice spiral CT on the management of patients with abdominal trauma. 6th Annual research conference UAEU.

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Langer R, Raupp P, Varady E. (2005). Unusually presentation of TS in newborns. *DRK, Berlin*.

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Lunjo K, Morris A, Czechowski J, Abu-Zidan FM. (2005). Scapular fractures and associated injuries in blunt trauma: A prospective study. Oral presentation at 7th EFOFR Congress, Lisbon, June 2005.

University Grant 2005

Prof R Langer (PI), Dr J Czechoski, Dr M Nagi, Dr F Torab.

Comparison of Two Imaging Protocols for Acute Stroke.

University Seed Grant

Prof P Corr (PI), Dr J Czechoski.

Diffusion MR Imaging of Knee Injury.

Department of Surgery

Prof F J Branicki	Professor, Chairman	Dr S Al Bakr	Teaching Assistant
Prof F Safi	Professor	Dr Ali Al Belooshi	Teaching Assistant
Prof NO Tjernstrom	Professor	Dr Z Al Fardan	Teaching Assistant
Dr D Younge	Professor	Dr T Mahmoud	Teaching Assistant
Dr F Abu-Zidan	Associate Professor	Dr M Al Ali	Teaching Assistant
Dr K Lunsjo	Associate Professor	Ms M Al Mansouri	General Technician
Dr F Torab	Assistant Professor	Ms M Thomas	Assistant Technician
Dr Ali Jawas	Assistant Professor	Mr H Hammash	Secretary
Dr S Al Thani	Assistant Professor	Mr Abdulla Jamal	Secretary
		Mr C K Aboobacker	Office Assistant

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Standing from left to right: Mr. Aboobacker, Dr. Fawaz C Torab, Dr. Fikri Abu Zidan, Prof. Nils Tjernstrom, Dr. Khaled Al Mansouri, Dr. Hani Eid and Mr H Hammash
Seated from left to right: Dr M Ali Jawas, Prof. Derek Younge, Prof. Frank J Branicki, Ms M Al Mansouri, Ms. Maya Thomas, Prof. Farouk Safi and Mr. Abdulla Jamal.

RESEARCH PROFILE

From 1999 until 2001 Prof. Branicki was the sole General Surgeon in the Faculty. The appointments of Dr. Fawaz Torab (March 2001) and Dr. Fikri Abu Zidan (July 2001) and Professor Farouk Safi (September 2002) have now enabled the pursuit of subspeciality interests in upper gastrointestinal/ bariatric surgery, trauma care and hepatobiliary/ colorectal surgery. Prof. Tjernstrom, an Otorhinolaryngologist, has expertise in Head and Oncology and has been in post for 12 years. In addition, two orthopaedic surgeons have been appointed Dr. Karl Lunsjo (October 2002), who has a PhD in hip fractures and interests in shoulder injuries and pelvic fractures and Professor Derek Younge (August 2002) with expertise in the management of hand and brachial plexus injuries and musculoskeletal tumours in particular.

Assistant Professor Dr. Khalid Al Mansouri, completed his Canadian Residency Training in London, Ontario in Ophthalmology in 2003 and a Fellowship in 'vitreo-retinal' disease in 2004. He took up appointment in the Faculty in July 2004 and is now actively engaged in clinical practice and is seeking to establish a 'Retinal' service in the Abu Dhabi Emirate. He has recently taken up appointment at Sheikh Khalifa Medical City in Abu Dhabi.

Dr. Ali Jawaz successfully completed Residency training at the University of Toronto in 2004 and was appointed Assistant Professor in December 2004. Following his training in Vascular Surgery he has also completed a Fellowship in Toronto and rejoined us in Al Ain in October 2005. He is actively involved in the provision of vascular services. Teaching Assistant Dr. Saeed Al Thani completed Residency Training in Orthopaedics at the University of Toronto and was appointed Assistant Professor in July 2004. He has completed Fellowship training in 'sports injuries, hand and joint replacement surgery' at the same institution in Toronto and rejoined the Faculty in Al Ain in January 2006. He is now establishing a Sports Injuries clinic in Tawam Hospital.

Our Teaching Assistants who are still to complete Residency training in Canada include, Dr. Ali Al Belooshi (Orthopaedics), Dr. Zuhair Al Fardan (Plastic and Reconstruction Surgery), and Dr. Saeed Al Bakir (Ophthalmology). Dr. Tahira Mahmoud has completed Residency training and is currently undertaking a Fellowship period in disease of the anterior chamber of the eye.

The Faculty in the Department have now increased from four (1999) to ten currently with three advertised senior positions (breast/endocrine

surgery, minimal access surgery and neurosurgery) yet to be filled. In addition, four Teaching Assistants are completing Residency training and the most recent appointee, Dr. Mohamad Ali Al Ali, has yet to find a suitable training opportunity for Otorhinolaryngology overseas. Dr. Ali has undertaken an attachment at Sheikh Khalifa Medical Centre in Abu Dhabi and is also undergoing training at Tawam Hospital.

Currently, the Department lacks a senior laboratory position (not replaced after resignation of the incumbent in 1998). Following the resignation of an Assistant Technician, a General Technician Ms. Maya Thomas, is in post who is also working part time for the Department of Anatomy. Ms. Mahra Al Mansouri is also a General Technician and assists with other duties relating to teaching as well as research. Mr. Abdulla Jamal has been acting as Departmental Secretary and, in particular, facilitates both teaching activities in the Clerkships and workshops with dedicated secretarial services to a high standard with assistance from Mr. Aboobacker in office duties. Recently, Mr. Hisham Hammash, an Administrative Officer, has joined the Department as Secretary following a period of excellent service in the National Medical Library in the Faculty of Medicine and Health Sciences.

The Department has computerized its teaching materials (Blackboard) and is involved in clinical and as well as basic science research activities. The Junior Surgical Clerkship has been reorganized with an emphasis on small group teaching and case discussion with new initiatives introduced by the Clerkship Coordinator, Dr. Fawaz Torab. A question bank that has been established is now being consolidated. Dr. Torab, a member of the Faculty CME Committee, has also been a member of a Committee which has developed a course in ethics in the General Basic University Teaching Year (UGRU). He has also functioned as a Subcommittee member for implementation of Ethics and Professionalism in the Curriculum.

Dr. Karl Lunsjo has been instrumental in helping to establish, and now chairs an Al Ain Orthopaedic Club which meets monthly. Prof. Derek Younge holds nationwide responsibilities for the Terry Fox Fund for Cancer Research and is also the Director of the Clinical Sciences Course.

Many Faculty are also heavily involved in administration of research activities – these include the Chairs of Research Grants Committee, (Prof. Branicki, 2000-2004), Research Ethics Committee (Dr. Fawaz Torab, 2002-2004), Trauma Strategic Research Priority Group (Dr. Fikri Abu Zidan,

2002-to date) and Oncology Strategic Research Priority Group (Prof. Tjernstrom, 2002-to date). Profs. Branicki, Tjernstrom and Drs. Torab and Fikri have been members of the Research Advisory Board. Prof. Branicki also chairs the Undergraduate Policy and Review Committee, Dr. Torab also holding membership of this Committee. Prof. Branicki is also a member of the Finance and Budget Committee. Prof. Safi is a Member in various committees, including Research Grants Committee, Promotion Committee, Postgraduate Education Committee, Finance and Budget Committee, Health and Welfare Committee and the Oncology Research Group, Prof. Branicki and Torab also being members of this Strategic Research Priority Group for Oncology. Prof. Safi is also the Coordinator of the Gastrointestinal Module. Associate Professor Dr. Fikri Abu Zidan was awarded the Faculty's Distinguished Performance Award for Teaching and Research for 2004 and Special Endeavours in Human Services Prize at 5th Annual Research Conference, April 2004.

The Department has organized a number of CME/CPD activities of late including an International Surgical Conference with more than 600 delegates held in Abu Dhabi in October 2003. This was highly successful with fourteen invited international Faculty and 72 free paper presentations of research activity from the UAE and elsewhere. The Department raised 75% of funding required for the meeting from corporate sponsorship. Members of the Department were involved in Pre-conference Surgical Skills workshops in January and November 2004 and Dr. Fawaz also organized the 1st Middle East Forum and Workshop on "Virtual Reality for Skills Training in Medicine" in May 2004. The Department is now designated a training centre for laparoscopic surgery simulation and practice by the European Association of Endoscopic Surgeons (EAES).



Prof. Safi and Prof. Tjernstrom organized an Oncology Research Day held in Al Ain in November

2005 with presentations from holders of Terry Fox Cancer Fund awards. Prof. Branicki now chairs the Organizing Committee for an Oncology Conference scheduled for February 2007, Prof. Tjernstrom, Prof. Safi, Prof. Younge and Dr. Torab also being involved in the organization of the Conference and its program.

Dr. Fawaz Torab is completing studies to evaluate resorption capacity of inflamed peritoneum in the pathogenesis of systemic sepsis in an acute peritonitis model. This work involves measurement of endotoxin and cytokines, the gastrointestinal tract being the primary source of endotoxin as a result bacterial translocation. The work was facilitated by summer electives undertaken in 2003 and 2004 by female medical students at the Faculty. Results were presented in the GCC Students Conference in January 2004. One of his supervised students won a poster award at the GCC Medical Students Conference held in Kuwait (January 2005). One student also presented the findings, under the supervision of Dr. Torab, at a meeting in Germany in March 2005. Studies to measure endotoxin in both human and rat plasma and sera using the Limulus Amoebocyte Lysate Test (LAL) are also underway. This involves a quantitative spectrophotometric assay for endotoxin in human plasma, modified and standardized for murine plasma. Dr. Torab is collaborating with Prof. Ellis (Department of Medicine) and Dr. Ramadi (Department of Microbiology) in an analysis of the tolerability and efficacy of human recombinant interleukin II in the management of sepsis in leukemia patients undergoing consolidation chemotherapy.



Dr. Fikri Abu-Zidan has a major interest in research concerning trauma and has recently presented initial results following the establishment of the first Trauma Registry in the UAE. The project has received international attention when findings have been presented national and overseas. Dr. Fikri has received two ultrasound machines donated by the Red Crescent Society to the Department of Surgery which are to be used for the de-

tection of free intrabdominal fluid (FAST) in trauma. The machines will also help facilitate teaching and research activities in trauma and other fields. Two FAST workshops for training in ultrasonography have been conducted by Dr. Fikri Abu Zidan and colleagues in 2004 and again in 2005.



In April 2004 the Department hosted inaugural back to back Provider and Instructor courses in the UAE for the Advanced Trauma Life Support (ATLS). Four invited Faculty and staff from the USA and one from Canada participated in the teaching and Provider courses have since been held again in the Faculty and in Fujairah. These courses are training Emirati graduates and others in trauma care and will help reduce the burden of disabling illness and mortality from motor vehicle crashes. In 2005 the Department hosted two ATLS courses in Al Ain and members also participated as Instructors in two courses held in Fujairah. Two ATLS courses were held in the Faculty in March and April 2006.



Prof. Farouk Safi has taken on the role as Director of Postgraduate Training in the Department with the establishment in June 2005 of a local Residency training program in General Surgery under the auspices of the Arab Board with the future possibility of Associate MRCS accreditation by the Senate of Surgery in the United Kingdom. The Pro-

gram has been accredited by the Arab Board in Surgery and five Residents were appointed to the first year of the program in October 2005.

Dr. Lunsjo and Prof. Younge are collaborating in studies of patients who have sustained scapular or pelvic fractures. These have come to fruition and will be the largest prospective series in the literature when published. Prof. Younge is currently reporting his experiences with novel operative procedures he has devised for the management of musculoskeletal tumours.

Several research projects and activities are underway include endotoxin and cytokine measurement in chemical peritonitis with intraperitoneal injection of interleukin 6, similar studies in gram positive peritonitis with endotoxin and interleukin 6 injections, as well as measurement of endotoxin, interleukin 6 and tumour necrosis factor alpha in patients with critical limb ischaemia. Studies include the investigation of endotoxaemia and inflammatory conditions in patients with acute appendicitis, acute phase reaction in trauma victims and treatment of infection in the feet of diabetic patients.

Drs. Fikri, Fawaz and Lunsjo are Principal Investigators for research projects funded from different sources – the Research Grants Committee (Faculty of Medicine and Health Sciences) Individual and Interdisciplinary Research Proposals (United Arab Emirates University) and the Sheikh Hamdan Awards. More recently, Dr. Torab has been awarded a Individual Faculty Research Grant by the UAE University for research relating to laparoscopic treatment of perforated peptic ulcer. Prof. Branicki acted as Chair of three Subcommittees for Sheikh Hamdan Awards in 2004 and Prof. Tjernstrom and Dr. Torab acted as Subcommittee members for the consideration of various Awards. Prof. Branicki is again involved as Chair of a Subcommittee for the 2006 Awards and Dr. Torab is also involved as a Subcommittee member.

Departmental research interests are thus diverse, currently encompassing general surgery and trauma. As the Department grows in stature with the appointment of surgeons with subspeciality interests, it is perceived that experimental research initiatives will expand in keeping with strategic themes which have been adopted in the Faculty.

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Abu-Zidan F, Shabaan S, Ashour MS, Bashir MO, Idris K, Branicki F. (2005). Establishment of a Trauma Registry at Al-Ain City. Second Middle East Conference on Healthcare Informatics, April 2005, Dubai.

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- Branicki F. (2005). Recent Advances in Therapeutic Strategies for Gastric Cancer. International Medical College, Seramban, Malaysia, February 2005.
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- Safi F. (2005). Anastomosis Technique after pancreatic head resection. Panarab Congress of surgery. Bahrain; Manama, December, 2005.
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- Torab FC, Amer M, Jamal A, Branicki FJ. (2005). Results of Treatment of Perforated Peptic Ulcer: different ethnic, atmospheric and fasting Risk Factors for Morbidity in Al Ain Medical District, United Arab Emirates. 13th World Congress of Gastroenterology, 11th World Congress of Digestive Endoscopy, Montreal.
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- Trab M, Hammouri N, Potemkowski A, Torab FC. (2005). Limb salvage after repair of arterial injury. International Surgical Week 2005, Durban, South Africa.
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- Younge D. (2005). Malignant Tumors of the Shoulder, Inter-Emirates Orthopedic Meeting, Abu Dhabi, January, 2005.
- Younge DA. (2005). Soft Tissue Sarcomas, Inter-Emirates Orthopedic Meeting, Ras al Khaimah, UAE, April 2005.

RESEARCH GRANTS

FMHS New Research Grant 2005

Prof R Langer (PI), Drs K van Gorkom, J Czechowski, F Torab

Comparison of two imaging protocols for acute stroke-unenhanced computed tomography (CT) and contrast material enhanced CT with perfusion imaging.

UAE University Interdisciplinary Grant 2005

Drs F Abu Zidan (PI), S Shaban, F Torab, K Lunsjo, P Brass, M Grivna

Road Traffic Accident Injury Registry in Al Ain City.

Terry Fox Cancer Research Grant 2005

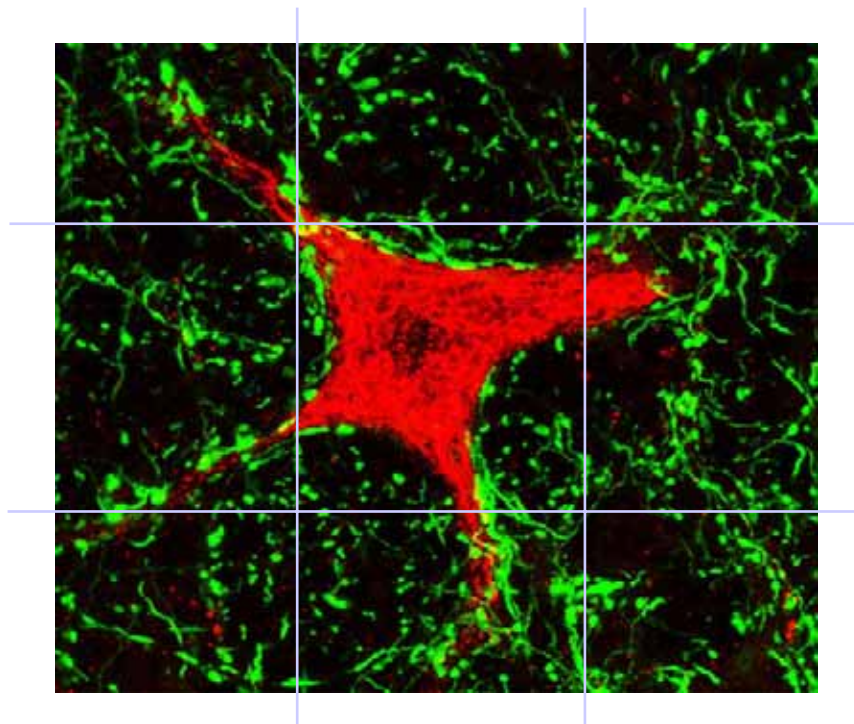
Drs O El Agnaf (PI), R Al Shami, F Martin, P Hirsch, F Torab

Synucleins as Biomarkers and Potential Targets for Intervention in Cancer Progression.

Dr S Karam, Prof F Branicki, Drs. F Torab, M Taha, A Vinzce.

Role of Gastric epithelial progenitors in gastric carcinogenesis (co- Investigator).

Research Priority Groups



Diabetes and Cardiovascular Research Priority Group. Report 2005

Core Members:

Prof. Enyioma Obineche
Dr. Chris Howarth
Dr. Hussain Saadi

Prof. Abdu Adem
Dr. Elsadig Kazzam
Prof. Farouk Safi
Prof. Ernest Adeghate (Group Representative)

Introduction

The Diabetes and Cardiovascular Research Priority Group (DCRG) was established on January 27, 2002, after an initial meeting called by the Dean in the autumn of 2001. The DCRG works closely with the Al Ain Diabetes Research Group.

In addition to the core members, group membership includes 44 other faculty members from within the FMHS.

Aims of the Group

- Facilitate diabetes and cardiovascular research in the faculty.
- Enhance the clinical and basic research capabilities of established diabetes investigators.
- Act as a channel for research funding.
- Act as a resource for new faculty members and for those who may want to start research in diabetes/cardiovascular diseases.
- Present scientific research at national and international scientific conferences.
- Publish scientific research in national and international scientific journals.
- Cooperate and liaise with any local, national or international agency with similar research interests.
- Train post-doctoral, doctoral, masters and bachelors degree students.

- Act as a resource unit on diabetes and cardiovascular diseases.

Activities

Scientific Workshop

International Conference of the Gulf

Group for the Study of Diabetes

The group contributed to the organization of the International Conference of the Gulf group for the Study of Diabetes held in Dubai from February 13-15, 2005.

This meeting attracted more than 1000 delegates from across the region and abroad.

Themes of research include the following

Neuropeptides and neurotransmitters in diabetes
Trace elements in diabetes
Immunology of diabetes
Clinical pharmacology of diabetes
Insulin and glucagon secretion
Effects of diabetes on cardiac muscle function
Epidemiology of diabetes
Diabetic complications (nephropathy, neuropathy and angiopathy)
Lipids in human and experimental diabetes
Metabolic syndrome and obesity
Pancreas transplantation
Hypertension
Gestational diabetes

Grants obtained by members

- 1) Prevention and treatment of vitamin D deficiency

in Arabian women: Efficacy of high dose vitamin D supplementation. Research Grant funded by Hamdan Award for Research in Medical Sciences.

- 2) A national survey of the prevalence of diabetes and its complications in the United Arab Emirates. Research funded by UAE University and Red Crescent
- 3) Effects of brain natriuretic peptide on cardiac muscle function in the streptozotocin-induced diabetic rat". FMHS, UAE University
- 4) Effects of streptozotocin-induced diabetes on heart rhythm. FMHS, UAE University
- 5) Effects of ageing complicated by diabetes on heart function in the streptozotocin-induced rat. FMHS, UAE University
- 6) Mechanisms underlying the progressive long-term effects of type 2 diabetes on heart muscle function. UAEU Interdisciplinary
- 7) Knowledge, Attitude and Practices of Diabetic Patients in Al-Ain Medical District. FMHS, UAE University
- 8) Prevalence of Obesity (using BMI) and its Risk factors among adults in Al-Ain City, UAE, FMHS, UAE University.
- 9) Localization of gamma-aminobutyric acid and glutamic acid decarboxylase in the endocrine pancreas of Goto Kakizaki rats. UAEU Individual Grant

Collaboration with local and international institutions

Local

- Neuroscience Research Group, FMHS, UAEU
- Al Ain Diabetes Research Group
- Emirates Diabetes Society (Emirates Medical Association)
- Tawam and Jimi Hospitals, Al Ain, UAE
- Faculty of Science, UAEU
- Faculty of Engineering, UAEU

International

- James Cook University, Queensland, Australia
- University of Bristol, UK
- University of Leeds, UK
- University of Central Lancashire, UK
- Karolinska Institut, Sweden

- Semmelweis University, Hungary
- CNRS, France

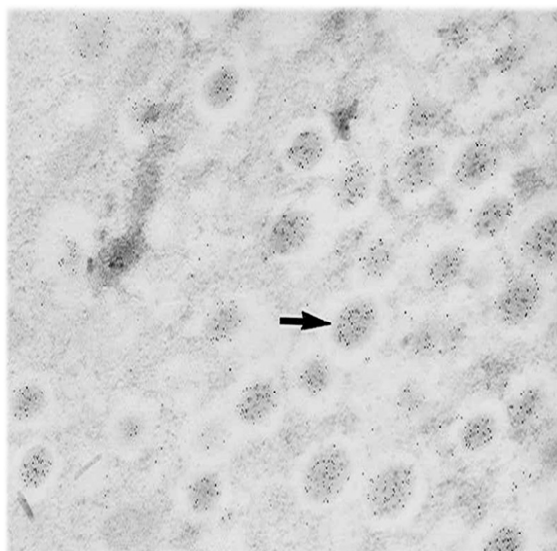
Future plans

Establishment of a Diabetes research Centre

The group is planning to establish a Diabetes Research Centre. The centre will provide a facility that enables and facilitates a multidisciplinary approach to the study of diabetes and its complications and to provide the infrastructure for diabetes related undergraduate and post-graduate research and teaching activities.

Publications

Members of the Group published more than 26 diabetes-related papers in top quality peer-reviewed journals including but not limited to Journal of Human Hypertension, Journal of Hypertension, Molecular and Cellular Biochemistry, European Journal of Obstetrics & Gynecology and Reproductive Biology, Clinical Chemistry Acta, Acta Obstetrics Gynecology Scandinavica, Diabetic Medicine, Cytokine, European Journal of Immunology, International Journal of Urogynecology and Journal of Pelvic Floor Dysfunction, Journal of Internal Medicine, Experimental Physiology, Peptides in 2005. The cumulative impact factors of these journals exceeded 29 (See Departments of Anatomy, Biochemistry, Community Medicine, Pathology, Pharmacology, Physiology, Internal Medicine and Medical Microbiology for relevant publications).



Electron micrograph showing immuno-gold labeling of insulin in the secretory granules (arrow) of pancreatic beta cell of normal rat. Magnification: X14 000.

Genetics and Development Research Priority Group.

A. Mission of the Group

UAE is a young modern society, with traditional customs and beliefs, in which consanguineous marriages are common. In the UAE autosomal recessive disorders occur more frequently than in other populations. The mission of the group is to provide the highest quality patient care, research into genetic diseases and education both of the professionals and the public. In support of the mission the group strives to define the extent of genetic and developmental disorders in the country, to be the leading source of research into the causes and the pathogenesis of these disorders using state-of-the-art technology and to seek new approaches to prevention, treatment and diagnosis of genetic disorders. The mission is also to educate the next generation of 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 ways of prevention.

B. Research Focus

The area of Birth Defects has been a major focus of research interest for the Genetics Priority Group. This group is involved in research into different aspects of congenital abnormalities, examples include:

- Epidemiological studies to establish the prevalence and pattern of different anomalies common in this population.
- Clinical, cytogenetic and molecular delineation of syndromes or disorders common in this population
- Laboratory investigations into the mechanisms of birth defects.
- Teratology of anti-epileptic drugs.
- Proteomic in development.

Other areas of research interest include:

- Genetics of neurological and neurobehavioral disorders including molecular genetics of nervous system dysgenesis; genetic disorders affect-

ing the cerebral white matter, inborn errors of metabolism; molecular genetics of the epilepsies, Hippocampus in various cerebral disorders and genetic basis of mental retardation

- Mapping recessive genetic disorders using the concept of homozygosity mapping.
- Identification of mutations of single gene disorders common in this population.
- Comparison of activities between wt and Δ Bromodomain SWI/SNF using restriction enzyme remodeling assays and octamer transfer assays
- Genetic control of DNA packaging

C. Activities

The group organized two CMEs in 2005.

Update in Genetics February 2005, FMHS in collaboration with the International Journal of Diabetes

Genetics in Neurology May 2005 in Shangri-La Hotel Dubai – two international speakers participated in the CME – Dr. G. Woods from Cambridge, UK and Dr. J. Gleeson from California, San Diego

The special issue of the Community Genetics which included several papers presented in the Genetics Congress 2003 appeared in March 2005.

Collaboration with relevant UAE and international groups and organizations

UAE

- Several collaboration between group members and with other priority groups.
- Ministry of Health
- School Health authorities
- Hamdan Award for Medical Sciences
- Center for Arab Genomic Study

Regional

Sultan Qaboos University, Muscat, Oman

International

- International Clearing House for Birth Defect Monitoring System [member]
- Harvard University
- University of California, San Diego
- Cambridge University, UK
- Birmingham University, UK
- Yale Child Center, Yale University
- University College London Medical School
- Leeds University, 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
- Telethon Institute of Genetics and Medicine Naples, Italy
- UT Southwestern Medical Center at Dallas, USA
- Institute für Medizinische Genetik, Berlin, Germany

D. Summary of Grants and Publications 2005 (Please refer to departmental report as below)

Padmanabhan R (Anatomy)
ElAgnaf O (Biochemistry)
Rizvi, T (Microbiology)
Nowotny N (Microbiology)
Marzouqi A (Biochemistry)
Bastaki S (Pharmacology)
Eapen V (Psychiatry)
Mirghani H (Ob/Gyne)
Al Gazali L (Paediatrics)
Lukic M (Microbiology)
Abdulrazzaq Y (Paediatrics)



Map showing the location of the region called Baluchistan and the introduction of b IVS-1-5 to UAE by population migration [7]. Community Genetics 2005, 8:186-196

Immunoregulation and Infection Research Group. Report 2005

Group Leader Prof. Norbert Nowotny

Core Members: Dr. Ahmed Al-Qahtani
Prof. Basel Al-Ramadi
Dr. Suhail Abdullah Al-Salam
Dr. Mariam Al-Shamsi
Dr. Walter Conca
Prof. J. Mike Conlon
Prof. Senarath Dissanayake
Prof. Michael Ellis
Dr. Maria J. Fernandez-Cabezudo
Dr. Jose Joseph
Dr. Pauline Jumaa
Prof. Miodrag L. Lukic
Dr. Farah Mustafa
Dr. Tibor Pal
Dr. Tahir A. Rizvi
Dr. Fawaz Chikh Torab

I wish to welcome Dr. Suhail Abdullah Al-Salam, Assistant Professor at the Pathology Department, Dr. Ahmed Al-Qahtani, Teaching Assistant at the Med. Microbiology Department and currently working on his PhD at UC Irvine, Dr. Walter Conca, Associate Professor at the Department of Internal Medicine, and Dr. Farah Mustafa, Assistant Professor at the Department of Biochemistry, who joined the Group in 2005. The new members add new fields of expertise to the group and offer new possibilities for collaborations; I am very glad that these colleagues decided to join the group.

Statement of the main research focuses of the Group and its Members

The Research Priority Group “*Immunoregulation and Infection*” is focusing on all aspects of Infection and Immunity by promoting the research activities of its members and encouraging research co-operations within the Faculty as well as with Institutions outside the Faculty. Seminars on various topics related to Infection and Immunity are organized by the Group.

Research Interests of the Members include

- The Role of DRAK2 in the germinal center reaction and antibody response (Al-Qahtani)
- The Role of PI3K in somatic hypermutation and class switch DNA recombination (Al-Qahtani)
- Resistance of autoimmune diseases in DRAK2 deficient mice (Al-Qahtani)
- The role of homeodomain protein HoxC4 in somatic hypermutation and class switch DNA recombination (Al-Qahtani)
- Regulation of innate and adaptive immune responses in intracellular microbial infections (al-Ramadi)
- Mechanisms of T lymphocyte activation and function (al-Ramadi)
- Inflammatory cytokines/chemokines in human

- infections (al-Ramadi)
- Viral oncogenesis (Al-Salam)
 - Brain tumors (Al-Salam)
 - Immunity to autoimmune diseases (type I diabetes, rheumatoid arthritis and MS):
 - a) Factors involved in development and progression
 - b) Possible ways of prevention (al-Shamsi)
 - Study of possible relations connecting microorganisms to autoimmune diseases (al-Shamsi)
 - Role of regulatory T cells in autoimmune diseases (SLE, rheumatoid arthritis, psoriasis) (Conca)
 - Effects of renal replacement therapy on the cellular and humoral immune response (Conca)
 - Autoimmunity and heart disease (Conca)
 - Purification, characterization and structure-activity relationships of antimicrobial and antiviral peptides from natural sources, particularly from the skins of amphibians (Conlon)
 - Novel therapies for infected foot ulcers in diabetic patients (Conlon)
 - Immunomodulation by parasite carbohydrates with emphasis on mechanisms of Th1/Th2 shifts in parasitic diseases (Dissanayake)
 - A broad interest in clinical infectious diseases, particularly respiratory infections (Ellis)
 - Infections in the immunocompromised patient (Ellis)
 - Invasive mycoses especially in individuals with haematological malignancy (Ellis)
 - Clinical trials of antifungal therapy (Ellis)
 - Role of Protein Tyrosine Kinases (PTK) in T cell oncogenesis (Fernandez-Cabezudo)
 - Immunohistological changes in lymphoid organs following microbial infections (Fernandez-Cabezudo)
 - Systemic-inflammatory mediators in asthma; focus on the role of serum IL-5 and IL-13 in asthmatics (Joseph)
 - Transforming growth factor β I and its role in non-atopic asthma (Joseph)
 - Transforming growth factor β may suppress IgE elaboration from B lymphocytes (Joseph)
 - Intracellular cytokines in asthmatics and normal controls following treatment with corticosteroids and leukotriene receptor antagonists (Joseph)
 - Epidemiology, clinical and microbiological characteristics of nosocomial bacteremia (Jumaa)
 - Surveillance of antimicrobial resistance (Jumaa)
 - Control of infection in the hospital (Jumaa)
 - Immunoregulatory mechanisms in hepatitis C infection (Lukic)
 - Target tissue regulation of inflammatory autoimmunity in the CNS (Lukic)
 - Cytokine interplay in the development of type I diabetes (Lukic)
 - Understanding basic steps in the replication of the mouse mammary tumor virus--MMTV (Mustafa)
 - Molecular changes involved in the induction of breast cancer and leukemia by MMTV at the chromatin level (Mustafa)
 - All aspects of infectious diseases, especially viral diseases (Nowotny)
 - Zoonoses (Nowotny)
 - Emerging viral infections (Nowotny)
 - Molecular epidemiology / phylogeny (Nowotny)
 - Molecular detection and characterization of enteric pathogens in the UAE (Pal)
 - Investigation of the role of curli fimbriae on diarrheagenic *Escherichia coli* (Pal)
 - Molecular characterization of antibiotic resistant Gram negative bacteria in the UAE (Pal)
 - Retroviral replication (RNA packaging, export, and promoter functions) and pathogenesis (Rizvi)
 - Retroviral vectors for gene therapy and DNA-based vaccines (Rizvi)
 - The pathophysiology of acute pancreatitis and sepsis (Torab)

- The kinetics and translocation of endotoxin and related inflammatory mediators in the course of sepsis situation such as peritonitis and pancreatitis (Torab)
- Methods of measurement of endotoxin and its effect in vitro and vivo (Torab)
- The pathophysiology and role of the inflammatory mediators in acute phase reactions such as trauma (Torab)
- Maternofetal and neonatal infections relevant to infants of toxoplasmosis, cytomegalovirus and hepatitis C virus infected mothers; immunological and longitudinal clinical assessment (Uduman)
- Post immunization clinical and immunogenicity study of Haemophilus influenzae type b disease in UAE (Uduman)
- Immunoprophylaxis efficacy trial of palivizumab in respiratory syncytial virus infected high risk infants (Uduman)
- Clinical, diagnostic and therapeutic aspects of infectious diseases of the newborn and pediatric population (Uduman).

Major research achievements

The members of the group published in 2005 forty-three original research papers in prestigious peer-reviewed international Journals such as

- *American journal of Physiology. Regulatory, Integrative and Comparative Physiology*
- *Annals of the New York Academy of Sciences* (6)
- *Asian Journal of Surgery*
- *Avian Pathology*
- *Biochemical Pharmacology*
- *British Journal of Haematology*
- *British Journal of Pharmacology*
- *Cellular Immunology*
- *Comparative Biochemistry and Physiology. Toxicology & Pharmacology*
- *Developmental & Comparative Immunology* (2)
- *EMBO Journal*
- *Emerging Infectious Diseases* (2)
- *Emirates Medical Journal*
- *Epidemiology and Infection*
- *General and Comparative Endocrinology* (2)
- *International Journal of Infectious Diseases*
- *Journal of Chemotherapy*

- *Journal of Endotoxin Research*
- *Journal of General Virology*
- *Journal of Medical Microbiology*
- *Journal of Virology* (2)
- *Microbes and Infection*
- *Molecular and Biochemical Parasitology*
- *Molecular and Cellular Biochemistry*
- *Molecular Immunology*
- *Peptides* (3)
- *Regulatory Peptides* (4)
- *Veterinary Microbiology* (2)

Also, several members of the group have been in 2005 invited speakers at international conferences; they are members of the editorial board of prestigious scientific Journals, and members of international committees. The group members collaborate with a number of groups, institutions and organizations within the U.A.E. and abroad.

Research Grants

The members of the group were in 2005 principal investigators of the following grants:

- FMHS Research Grants: 8
- U.A.E. University Grants and U.A.E. University Interdisciplinary Grants: 7
- Grants of the Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences: 3
- Grants of the Terry Fox Fund for Cancer Research: 3
- GCC Cooperation Grants: 3
- Industry-funded Grants: 3

and in addition co-investigators of many other grants.

The full citations of the publications and details of the grants are listed in the Departmental Reports.

Seminars

In 2005, several members of the group were able to attract international speakers to give seminars in the Faculty:

• January 11, 2005:

Professor Sebastian G. B. Amyes, Department of Medical Microbiology, Medical School, University of Edinburgh: "Does antibiotic usage in animals cause resistance in human bacteria?"

- The kinetics and translocation of endotoxin and related inflammatory mediators in the course of sepsis situation such as peritonitis and pancreatitis (Torab)
- Methods of measurement of endotoxin and its effect in vitro and vivo (Torab)
- The pathophysiology and role of the inflammatory mediators in acute phase reactions such as trauma (Torab)
- Maternofetal and neonatal infections relevant to infants of toxoplasmosis, cytomegalovirus and hepatitis C virus infected mothers; immunological and longitudinal clinical assessment (Uduman)
- Post immunization clinical and immunogenicity study of Haemophilus influenzae type b disease in UAE (Uduman)
- Immunoprophylaxis efficacy trial of palivizumab in respiratory syncytial virus infected high risk infants (Uduman)
- Clinical, diagnostic and therapeutic aspects of infectious diseases of the newborn and pediatric population (Uduman).

Major research achievements

The members of the group published in 2005 forty-three original research papers in prestigious peer-reviewed international Journals such as

- *American journal of Physiology. Regulatory, Integrative and Comparative Physiology*
- *Annals of the New York Academy of Sciences* (6)
- *Asian Journal of Surgery*
- *Avian Pathology*
- *Biochemical Pharmacology*
- *British Journal of Haematology*
- *British Journal of Pharmacology*
- *Cellular Immunology*
- *Comparative Biochemistry and Physiology. Toxicology & Pharmacology*
- *Developmental & Comparative Immunology* (2)
- *EMBO Journal*
- *Emerging Infectious Diseases* (2)
- *Emirates Medical Journal*
- *Epidemiology and Infection*
- *General and Comparative Endocrinology* (2)
- *International Journal of Infectious Diseases*
- *Journal of Chemotherapy*

- *Journal of Endotoxin Research*
- *Journal of General Virology*
- *Journal of Medical Microbiology*
- *Journal of Virology* (2)
- *Microbes and Infection*
- *Molecular and Biochemical Parasitology*
- *Molecular and Cellular Biochemistry*
- *Molecular Immunology*
- *Peptides* (3)
- *Regulatory Peptides* (4)
- *Veterinary Microbiology* (2)

Also, several members of the group have been in 2005 invited speakers at international conferences; they are members of the editorial board of prestigious scientific Journals, and members of international committees. The group members collaborate with a number of groups, institutions and organizations within the U.A.E. and abroad.

Research Grants

The members of the group were in 2005 principal investigators of the following grants:

- FMHS Research Grants: 8
- U.A.E. University Grants and U.A.E. University Interdisciplinary Grants: 7
- Grants of the Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences: 3
- Grants of the Terry Fox Fund for Cancer Research: 3
- GCC Cooperation Grants: 3
- Industry-funded Grants: 3

and in addition co-investigators of many other grants.

The full citations of the publications and details of the grants are listed in the Departmental Reports.

Seminars

In 2005, several members of the group were able to attract international speakers to give seminars in the Faculty:

• January 11, 2005:

Professor Sebastian G. B. Amyes, Department of Medical Microbiology, Medical School, University of Edinburgh: "Does antibiotic usage in animals cause resistance in human bacteria?"

•May 01, 2005:

Professor Andrew M. L. Lever, Addenbrooke's Hospital, University of Cambridge, UK: "HIV RNA packaging and lentiviral vectors for gene therapy"

•November 23, 2005:

Professor Sándor Belák, Department of Virology at the National Veterinary Institute and Department of Virology, Swedish University of Agricultural Sciences, Uppsala, Sweden: "New Trends in Molecular Diagnostic Virology"

•December 20, 2005:

Dr. Rosana Schafer, Department of Microbiology, Immunology & Cell Biology, West Virginia University, USA: "Immunomodulation to vaccination: a novel effect of pesticide-mediated endocrine disruption"

•December 21, 2005:

Dr. Chris Cuff, Department of Microbiology, Immunology & Cell Biology, West Virginia University, USA: "No guts, no glory: innate and adaptive immune responses following enteric virus infections"

In addition, the Faculty Seminar on May 23, 2005 was organized by our Research Priority Group. On this occasion, Professor Mike Ellis gave a seminar entitled "Potential for immunomanipulation in managing infectious complications in haematological malignancy: focus on recombinant interleukin 11", and Dr. Tibor Pal presented a lecture on "Extended spectrum β -lactamase producing bacteria - the local experience".

Also, several members of the Group gave presentations at the 6th Annual U.A.E. University Research Conference, Al Ain, April 24-26, 2005.

Due to the emergence of the H5N1 "bird flu" virus Professor Nowotny gave several seminars on this topic at various hospitals.

The most outstanding event organized by the Research Priority Group "*Immunoregulation and Infection*" in 2005, however, was the organization of an International Conference on Emerging Infectious Diseases, which was held under the Patronage of H.E. Sheikh Nahayan Mubarak Al-Nahayan, Minister of Education, from February 26 to March 01, 2005 at the Intercontinental Resort Al Ain. Fifteen highly distinguished international speakers gave keynote presentations on all areas of emerging infectious diseases, and approx. 720 scientists, among them many from Europe and the United States, participated in the Conference. Details about the Conference and some photos have already been published in the Research Publications booklet for 2004 on pages 93 - 95. This Confer-

ence was a big success, and I wish to cordially thank all members of the Group as well as the many other FMHS and UAEU employees, who helped to organize this event, for their great effort and contributions.

Prof. Norbert Nowotny
for the Research Priority Group
Immunoregulation and Infection

Neuroscience Group

MISSION

The mission of the Group shall be to:

- Support and promote neuroscience in Al Ain and the UAE
- Give encouragement and assistance to, and strengthen ties between, its members
- Organize seminars, congresses and workshops in the field of neuroscience
- Collaborate with and participate in scientific activities of other groups in the field of neuroscience nationally and internationally.

Major Achievements

In the year 2005, the members of the group contributed to several national and international meetings. Furthermore, the International Neuroscience Conference enabled us to connect ourselves as individuals and as a Faculty and University with the International Neuroscience World and we believe that UAE has found its deserving place on the "Neuroscience World Map".

The group members collaborated with a number of groups, institutions and organizations within the UAE & abroad, and a number of publications have resulted from their research efforts.

UAE

Central Veterinary Research Laboratory, Dubai
Centre for Arab Genomic Study
Faculty of Science, UAEU
Hamdan Award for Medical Sciences
School Health Authority
Tawam Hospital and Al Ain Hospital, Al Ain
Zayed University, Dubai

Abroad

Academy of Sciences, St Petersburg, Russia
Boston College, MA, USA
Conway Institute, Dublin, Ireland
Columbia University, NY, 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
Institute of Virology, Vienna, Austria
Institutes for Medical Research and Neurology,

Belgrade, Yugoslavia
Iowa Medical School, USA
James Cook University, Queensland, Australia
Janssen Research Foundation, Belgium
Lancaster University, UK
Laboratory of Neurogenetics, National Institute on Aging, Maryland, USA
Mayo Clinic, Florida, USA
McMaster University, Canada
National Academy of Sciences, Kiev, Ukraine
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

Scientific Meetings, Seminars & Workshops Organized by the Group

International Neuroscience Conference

The International Neuroscience Conference was successfully held from 26th to 29th November 2005, in Al Ain, United Arab Emirates in collaboration with International Brain Research Organization (IBRO), the International Neuropsychiatric Association (INA) and the Collegium Internationale Neuro-Pharmacologicum (CINP).

Seminars & Workshops Organized by the Group

- "Loss of Hippocampal Muscarinic Receptors: Implications for the Treatment of Dementia?" by Professor Abdu Adem was held on Monday, 28 March 2005 at Hotel Intercontinental Resort, Al Ain.

•Pre-conference workshop was held in Dubai at Sheikh Rashid Medical Library & Auditorium on Saturday, 26th November 2005 from 9 – 5 PM. The workshop was divided into two parallel sessions on Neurology & Psychiatry.

Neurology workshop

Themes included: a) Dementia; b) Neurodegenerative Diseases; c) Parkinson's Disease; d) Herpes Simplex Encephalitis; e) Neuropharmacology Review.

Psychiatry workshop

Themes included: a) Autism; b) ADHD; c) Epilepsy; d) Substance Use Disorder; e) Depression.

Summary of Grants & Publications 2005

(refer to departmental reports as below):

Shehab S (Anatomy).

Padmanabhan R (Anatomy).

Adeghate E (Anatomy).

Mensah-Brown E (Anatomy).

Dietrich Lorke (Anatomy).

Conlon JM (Biochemistry).

El-Agnaf O (Biochemistry).

Galadari S (Biochemistry).

Nicholls MG (Internal Medicine).

Lukic M (Medical Microbiology).

Nowotny N (Medical Microbiology).

Al-Gazali L (Paediatrics).

Gururaj A (Paediatrics).

Petroianu G (Pharmacology).

Adem A (Pharmacology).

Hasan MY (Pharmacology).

Bastaki S (Pharmacology).

Attoub S (Pharmacology).

Morrison J (Physiology).

El-Sharkawy T (Physiology).

Fahim M (Physiology).

Lammers W (Physiology).

Ljubisavljevic M (Physiology).

El-Rufaie O (Psychiatry).

Eapen V (Psychiatry).

Raguram R (Psychiatry).

Sayed MAA (Psychiatry).

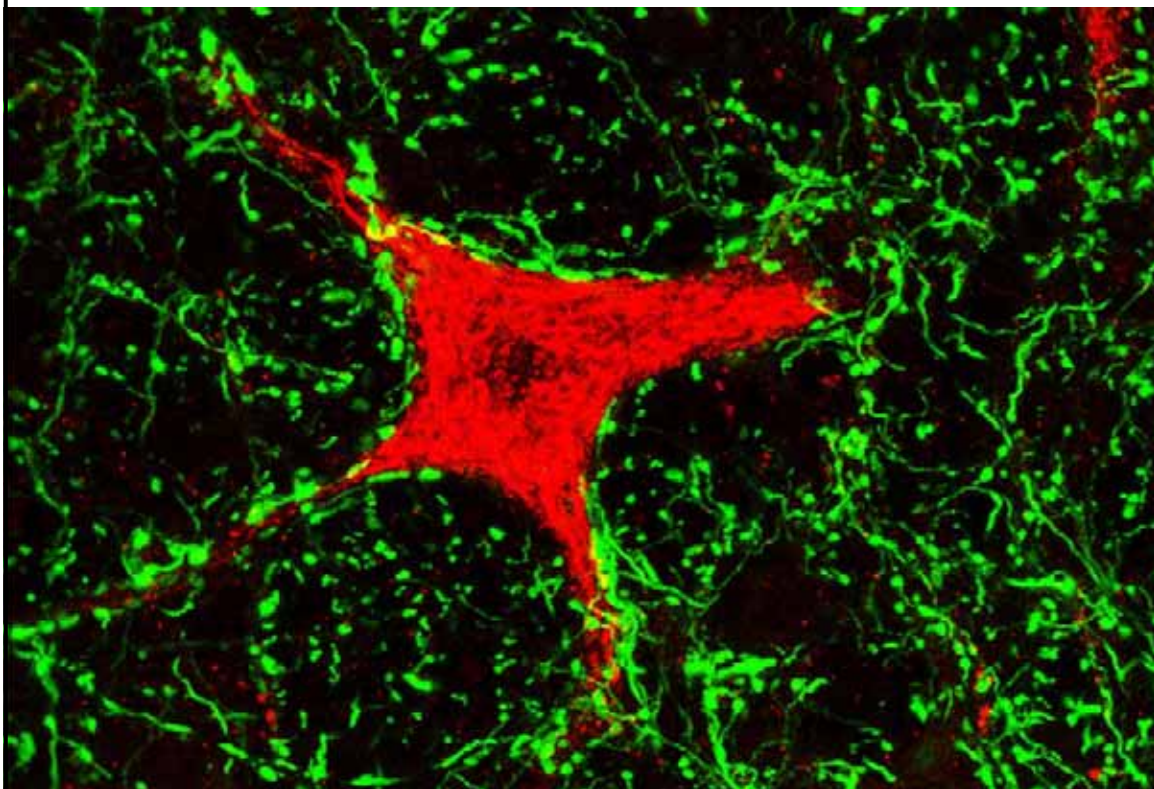
Osman O (Psychiatry).

Meguid AS (Psychiatry).

Corr P (Radiology).

Gorkom van K (Radiology).

Illustration



A confocal image of a section of the ventromedial medullary reticular formation showing nerve terminals, anterogradely labelled with biotinylated dextran amine (green) from ventrolateral pontine reticular formation, making contact with a neuron retrogradely labelled with cholera toxin subunit B (red) from the spinal cord.

European Journal of Neuroscience 22, 1431-1444 (2005).

Oncology Research Group, ORG._____

Introduction

ORG comprises colleagues at FMHS and General Authority for Health Services, who share an interest in oncology research, an ad hoc Committee currently oversees ORG activities.

Objectives

- Promote cancer research - being a catalyst for research activity.
- Create a forum for collaboration between faculty members, basic scientists and colleagues in clinical disciplines; faculty staff and colleagues of the General Authority for Health Services dealing with oncology.
- Create an inventory of
 - research activities
 - resources available
 - basic research expertise
 - available clinical services
 - specialty interests - subspecialties
 - individuals - registry
- Reference group regarding cancer research and funding.
- Advisory body to the General Authority for Health Services regarding cancer issues of broader national interests, e.g., breast cancer screening, cervical cancer screening, risk factors.
- Create a unified list of all cancer-related educational activities at the level of the country.
- Act as advisory body for cancer education, organizing lectures on cancer, cancer conferences and meetings on a local and national level.
- Promote quality control of cancer management.

Activities

ORG meetings – The group meet regularly on a monthly basis, most often the core ad hoc group.

Cancer Database

Support the cancer register of Tawam to improve the infrastructure, enabling cancer diagnostics and registration.

Cancer research - Tissue Bank

ORG is at this stage focused on establishing a Tissue Bank for future research on cancer. We understand that the only way for future cancer research involving both clinicians and basic scientists is the organization of such a resource. The Tissue Bank is planned to be established to create a focus for the collection, assessment, processing and storage of human tumors and appropriate control tissue for research. The Tissue Bank will function under the auspices of a committee with members both from the FMHS and the General Authority for Health Services. An application to establish the Bank has been submitted to the Ethics committee.

Cancer Research Day.

ORG arranged a Research Conference which took place on November 30, 2005 and was sponsored by the FMHS, Julphar and Bristol-Meyers. The Organizing Committee was the core group of ORG, Dr S Aswad, Dr F Torab, Prof F Safi and Prof NO Tjernstrom. Prof F Safi acted as the Chair of the Committee and the moderator of the research day. Speakers at the conference were all members of the FMHS staff and were grant holders from the Terry Fox Cancer Research Fund. The meeting was an opportunity to thank the Terry Fox Research Fund organizers as well as the Canadian community represented by their Ambassador to the UAE, HE WD Hutton. Twelve speakers from the FMHS, presented their cancer research.

The Research Day had attracted quite a good number of attendees and the presentations were well received, most are published and reported in respective Faculty departmental reports.

The opening presentations by the Chair of the Oncology Research Group, Prof NO Tjernstrom, the Assistant Provost for Research, Dr M Al Shamsi, the Canadian Ambassador HE WD Hutton and the Dean, Prof G Carruthers were followed by a press conference and the conference was reported in several newspapers.

Arrangements for an Oncology Conference, **Recent Advances in Clinical Oncology** to be held in 2007 are underway.

Pictures from the Oncology Research Day.



Audience



T 002: Prof D Younge, FMHS coordinator for Tery Fox Cancer Fund. Prof Carruthers, Dean FMHS, HE W D Hutton, Ambassador, Canada



Press Conference



Prof F Safi, Conference Moderator



Trauma Research Group

Report 2005

Summary

During 2005 the activities of the Trauma Group have received international recognition in areas of education and research. An increased demand for "hands on training" in trauma management is reflected with success for our courses which are providing a lead in the Middle East Region. In 2005 the group published 6 papers related to trauma in international refereed journals and has presented more than forty abstracts and oral presentations at national and international meetings. A major interdisciplinary grant to establish a Road Traffic Collision Registry has been funded. Last year, the group has won two national prizes for research and educational endeavours.

Mission

Our mission is to promote and perform research and education of a high standard in the field of trauma so as to improve patients care.

Major achievements of the Trauma Group

A) Road Traffic Collision Registry

This proposal has been supported by an interdisciplinary grant (190,000 DHS) to appoint two full time Research Assistants to collect data from Al-Ain and Tawam Hospitals, one of whom is already in post.

B) Participation in Scientific Courses

The Trauma Group was actively involved in the organization and conduct of numerous courses.

1) ATLS Provider Courses

are still running biannually in both the Faculty of Medicine and in Fujairah Hospital with major participation from Faculty members. There is an increased demand for the courses and it is planned to increase their number next year.

Furthermore, two Instructor courses are planned May 2006.



Training on reading a trauma Chest X-ray in the ATLS Course.

2) Course on Focused Assessment Sonography (FAST) for Trauma.

This course has also been conducted twice a year since 2004. We have recently increased the number of participants from 18 to 36 but we have maintained the same participant: tutor ratio of 6:1. This course has improved dramatically as evaluated by the participants. The teaching staff work with collegiality with focused objectives.



A FAST Course which was held at the FMHS on November 2005.

C) Successful Grants

- Road Traffic Collision Injury Registry in Al-Ain City, Interdisciplinary University Research Grant.
- School-Related Traffic Injuries in Al Ain, UAE – Incidence and Environmental Risk Factors. A project funded by the Scientific Research Affairs Sector of the UAE University.
- Drowning Prevention in UAE – Knowledge of Swimming and Water Safety Among High School Students in Al Ain – Frequency of Exposure to Aquatic Hazards. A project funded by the Scientific Research Affairs Sector of the UAE University.
- Injuries in children at home and during recreation, implications for prevention. Research Grant Agency - Ministry of Health, Czech Republic.

Details of these grants are to be found in the relevant Departmental Reports (Department of Surgery and Department of Community Medicine).

D) Publications and Abstracts

The group has published 6 papers related to trauma in international referred journals. Four more papers have been accepted. The group has presented more than forty abstracts and oral presentations at national and international meetings. Details of these publications and presentations are also to be found in the relevant Departmental Reports (Department of Surgery and Department of Community Medicine).

The quality of work has improved with publication in higher impact journals. For example, the best selected fifty abstracts of 1000 accepted for the 3rd Mediterranean Emergency Medicine Congress (1-5 September 2005, Nice, France) were published in the European Journal of Emergency Medicine. One of these was a submission from the Trauma Group (Eur J Emerg Med, February 2006, Volume 13, Issue 1). Furthermore, only 200 of 1000 abstracts were selected for oral presentation in this Congress, 5 of these being reports from our own group.

E) Prizes

- 1) Dr Karl Lunsjo and his team have been awarded The Best Non-Funded Research Project Award. 6th Annual Research Conference, April 2005, United Arab Emirates University for their prospective work on scapular fractures.
- 2) Dr Abu-Zidan has received a Certificate of Recognition by the Vice Chancellor of the UAE University for significant contributions to the 7th International

Defense Exhibition and Conference (IDEX 2005).

F) International recognition

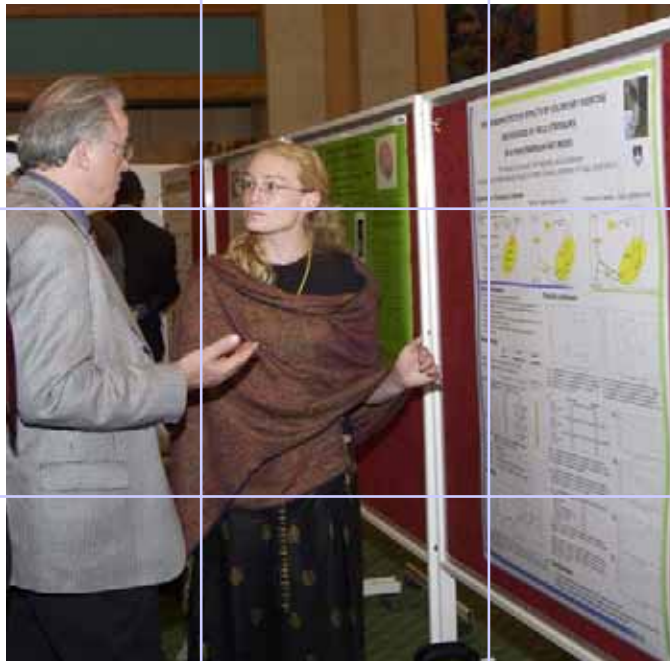
- 1) Dr Peter Barss was invited as a participant and speaker at a Workshop on the Role of the Social Sciences in Medical Training at the School of Public Health Sciences, American University of Beirut, Lebanon, Sept, 2005.
- 2) Dr Peter Barss was also invited by The Canadian Red Cross to present on "Ice and Cold Water Immersions in Canada, 1991-2000", at the Canadian Injury Prevention Conference, Halifax, Nova Scotia, November 2005.
- 3) Dr Abu-Zidan has been one of the two invited speakers at the Trauma Section of the Annual Scientific Congress 2005 of the Royal Australasian College of Surgeons held at Perth, Australia, May 2005. One of the presentations documented "Trauma management in United Arab Emirates" and the other reported on "How to Start a Trauma Registry". The quality of the data of the Trauma Registry impressed the audience and the Head of the National Australian Trauma Registry expressed interest to develop collaborations with our Trauma Group.
- 4) Dr Abu-Zidan was an invited Speaker for The 3rd Mediterranean Emergency Medicine Congress, 1-5 September 2005, Nice, France. He made two presentations namely "Focussed Assessment Sonography of Trauma" and "Using Ultrasound in the Victim of Trauma".
- 5) Dr Abu-Zidan has been selected by the European Association of Trauma to be the Course Director for the Focussed Assessment Sonography for Trauma (FAST) Course that will be held 4-5 September, 2006 at Malmo, Sweden as part of the 7th European Congress of Trauma and Emergency Surgery. International eminent pioneers have agreed to participate in this particular course (website: www.eates.com).

G) Clinical Service Role

Professor Branicki and Dr Abu-Zidan are serving on the Trauma committee of Tawam Hospital. This committee has specific tasks of evaluating the care of injured patients, establishing a Trauma Team, developing Guidelines for the management of trauma patients, and developing training programs for providers of trauma care. A CME program in trauma has already been established in Tawam Hospital, the members of the Trauma Group are actively participating in.

Scientific Conferences

Academic Year 2004-2005



International Neuroscience Conference

<http://www.fmhs.uaeu.ac.ae/neuro>

The International Neuroscience Conference was successfully held from 26th to 29th November 2005, in Al Ain, United Arab Emirates in collaboration with International Brain Research Organization (IBRO), the International Neuropsychiatric Association (INA) and the Collegium Internationale Neuro-Pharmacologicum (CINP).

HE Sheikh Nahayan Mubarak Al-Nahayan, Minister of Education, and Chancellor of United Arab Emirates University gave the inaugural address.

Delegates & Scientific Program:

531 delegates from **48 countries** participated in the conference and **256 delegates** attended the pre-conference workshop. Twenty-five international speakers gave keynote presentations at the conference. More importantly, the conference provided a forum to discuss and share the research and clinical experience of colleagues in this country with the international audience. In this regard, it is noteworthy that 23 of the 55 oral presentations were from the UAE. There were 55 poster presentations as well.

Research Collaborations:

The conference helped to strengthen our existing collaborative links with leading international centers and helped to foster new initiatives in the field of neuroscience in the region and abroad. We believe that we achieved more than what we had set out to achieve in this regard as colleagues from different centers had the opportunity to meet and discuss research ideas. Following are some of the examples of such collaborative research initiatives:

- Parkinson's Disease: Dr. Omar El-Agnaf with Professor Matthew Farrer (Mayo Clinic, USA), Dr. Hilal Lashuel (Switzerland), and Dr. Nasser Zawia (Rhode Island, USA).
- Alzheimer's Disease: Professor Abdu Adem with Professor Clive Ballard (UK) and Professor Raj Kalaria (UK).
- Autism: Professors Valsa Eapen and Nobert

Nowotny were able to forge a new initiative with Professor David Pauls (Harvard, USA) for the analysis of their mitochondrial DNA data.

- ADHD and tics: Professor Valsa Eapen with Professor Mary Robertson (UK) and Dr. Ahmed Al Ansari (Bahrain) set a new initiative for a multicentre comparative study of the prevalence of ADHD and tics in the GCC vs UK.
- Motor Control: Dr. Milos Ljubisavljevic with Professor John Rothwell (UK), Professor Wim Lamers with Professor David Thompson (UK).
- Neuropeptides: Professor J Michael Conlon with Professor Dan Larhammar (Sweden).
- Serotonin receptors: Dr. Fatima Kaneez Shad with Professors Erica Potter & Richard Fitzpatrick (Australia).
- Neurotoxicity: Dr. Mohammed Hasan with Dr. Nasser Zawia (Rhode Island, USA)

Travel Grants:

The funding from International Brain Research Organization (IBRO), which together with local funds was utilized to provide travel grants to 15 students and young scientists to attend this conference.

Research Publications:

- The abstracts were published in a special issue of the Emirates Medical Journal.
- Selected papers on Basic Science topics will be published in a special issue of the journal "**Experimental Brain Research**", while selected clinical papers will be published in a special issue of "**Journal of Psychosomatic Research**".

Young Scientist – Best Oral and Best Poster Awards:

Sheikh Hamdan Bin Rashid Al Maktoum Awards for Medical Sciences sponsored the Best Oral & Best Poster Awards.

We hope that this conference will serve as the starting point for future collaborative activities with other Neuroscience Organizations. We also hope that UAE will be able to take a lead role for future activities in the region and in this regard, we have already started discussions about setting up IBRO Neuroscience Schools & Workshops here in the UAE.

We are grateful to the UAE University for the financial support and to H.E. Sheikh Nahayan Mabarak Al Nahayan for his encouragement to pursue excellence in Science. We are indebted to the FMHS leadership and to all members of the various committees who worked hard to make this conference a success.

Valsamma Eapen

Abdu Adem

Safa Shehab

Milos Ljubisavljevic



Opening Speech by H.E. Sheikh Nahayan Mubarak Al Nahayan



Audience at the Opening Ceremony



H.E. Sheikh Nahayan Mubarak Al Nahayan meeting invited speakers.
[Left to Right: Prof. C Ballard, Prof. F Nyberg, Prof. RN Kalaria, Dr. N Greene,

The 4th Scientific Conference for Medical Students in the GCC Countries

In January 2006 the 4th Scientific Conference for Medical Students in the GCC Countries was held in the Sultanate of Oman. The venue for the Conference was Sultan Qaboos University and the slogan for the Conference was: "Knowledge Without Limits". The event included keynote speakers, oral and poster presentations, workshops, debates and a selection of social events. Around 400 students attended the conference and more than 200 students, with academic support, were involved in its organisation.

Keynote speakers included Professor Sir David Weatherall (Emeritus Regius Professor of Medicine and Chancellor of Keele University, United Kingdom); Professor Ian Smith (Professor of Medical Oncology, Royal Marsden Hospital and Institute of Cancer Research, London, United Kingdom); Professor Abdallah Daar (Professor of Public Health Sciences and of Surgery, University of Toronto, Canada).

Oral and poster communications were organised into different themes which included: Molecular Genetics, Neuroscience, Medical Oncology, Endocrinology and Obesity, Ethics and Behaviour, Infectious Diseases and Immunity, Epidemiology and Community Medicine, Cardiovascular Diseases, Pharmacology and Toxicology, Anatomy, Medical Education and Hematology.

Workshops included: Hypnosis, Meditation and Relaxation; Evidence Based Medicine; Use of Virtual Reality and Simulators in Medical Education; Genetics Counselling; Timeline Therapy; Eye Simulator; Acute Chest Pain Management; Bioinformatics; DNA Electrophoresis; Rapid Serological and Molecular Methods in the Diagnosis of Infectious Disease; Plan for your own Medical Project; Healthy Weight Management; Basic Surgical Skills; Acupuncture for Musculoskeletal Pain Management; Cardiopulmonary Resuscitation; Sharing Bad News; E-Learning and Web CT; Prescription Writing in Paediatrics; Challenging ECGs and Echos; Clinical Radiology; Preoperative Surgical Skills; Tips in Forensic Medicine.

The topics for debate were: HIV – A Second Chance and a Female Doctor for a Wife.

Social events included: 'Umsia'; an exhibition; trips

to Muscat Festival, Suq Matrah, Bait Al-Zubair Museum; a cruise around Muscat; poetry sessions; visits to the Grand Mosque, the Planetarium and a wonderful traditional night at Nakhal Castle.

Our delegation comprised 65 students and several academic staff. Our contributions to the conference included a workshop entitled 'Evidence Based Medicine', seven oral communications and 16 posters, participation in one of the debates and the Medical Student's Association display.

A variety of Awards were presented during the Closing Ceremony and these included organizers awards for the best five poster and oral presentations; best three workshops; best organized delegation and Dr Rafia Ghubash (President of Arabian Gulf University) prizes for best overall oral and poster presentations.

The Faculty of Medicine & Health Sciences received the following awards:

Ismail FY and Al-Sharhan FY, Short and long-term functional outcome following unilateral or bilateral common carotid artery occlusion in rat models: behavioural and pathohistological correlates. Supervised by Dr Milos Ljubisavijevic, Department of Physiology (Organizers Oral Prize, 5th place)

Halhali F, Al-Awadhi A and Abdulkareem A, Role of subthalamic nucleus in suppressing tonic seizure in animal model of epilepsy. Supervised by Dr Safa Shehab, Department of Anatomy.

(Organizers Poster Prize, 4th place)

Harhara T, Al-Owais A and Al-Suwaidi S, Effects of Red Bull energy drink on physiological parameters in rats. Supervised by Professor John Morrison, Department of Physiology (Dr Rafia Ghubash Poster Prize)

Best organized delegation (Organizers Prize)

In 2007 the conference is scheduled to take place at Umm Al Quora University in Saudi Arabia.



Social Events



Awards Ceremony



Medical Student's Association



Debate



Opening Day at Al-Jissah Spa and Resort

Impact Factor & Publication Analysis



Impact Factor

Journal	Impact Factor	Journal	Impact Factor
Acta Microbil Immunol Hung	-	Clin Physiol Funct Imaging	0.863
Acta Neuropathologica	2.503	Clin Radiology	1.514
Acta Obs Gyn Scandinavica	1.324	Colorectal Dis	1.749
Afri Health Sci	-	Comparative Biochem & Physiol C	1.651
Am J Med Genet	3.659	Cytokines	1.986
Am J Obstet Gynecol	2.437	Deutsche Medizinische Wochenschrift	0.552
Am J Trop Med Hyg	2.013	Developmental & Comparative Immunology	2.652
Am J Physiol	3.472	Eastern Mediter Health Journal	-
Anesth Analg	2.180	Eating Behaviours	-
Ann Acad Med Singapore	0.326	Echocardiography	0.667
Ann Anat	0.540	Emerging Infectious Diseases	5.643
Ann Neurology	8.097	Emirates Med J	-
Annals New York Academy of Sci	1.789	Epidemiol Infect	1.636
Arch Dis Child	1.656	Euro Ann Cl Immun J	-
Asian J Surg	-	Eur J Clin Nutrition	2.132
Avian Pathology	1.387	Eur J General Anaesthesiol	1.156
Ber Münch Tierärztl	0.674	Eur J Gynaecol Oncol	0.509
Biochem Pharmacology	3.436	Eur J Neuroscience	3.820
Biochem Soc Transactions	2.267	Eur J Obs Gyn Reprod Biol	0.955
Biochemica Biophysica Acta	2.418	Eur J Pain	1.811
Biogenic Amines	-	Exp Brain Research	2.304
Biological Cybernetics	2.142	Exp Physiology	1.833
BMC Gene	0.924	FEBS Journal	0.545
BMC Pediatr	-	Forensic Sci Intl	1.388
Bri J Gen Pract	1.561	General & Comparative Endocrinology	1.751
British J Haematol	3.195	Genome Research	10.382
British J Pharmacol	3.325	German J of Psychiatry	-
British Med J	7.038	Gynecol Endocrinol	1.242
Canadian J Physiol Pharmacol	1.603	Immunology (Medimond)	2.965
Cancer Research	7.690	Infect Control Hosp. Epidemiol	2.266
Cellular Immunology	1.988	Infect Immun	4.033
Cesko-Slovenska Pediatric	-	Int Immunology	3.543
Chest	3.118		
Chronic Disease	-		
Clin Chem Acta	1.961		
Clin Dermatol	0.708		
Clin Exp Allergy	3.069		
Clinical Immunol	3.034		
Clin Mol Terat	-		

Int J Diabetes and Metabolism	-	Life Sci	2.158
Int J Hyperthermia	1.888	Medical Hypotheses	0.607
Int J Impot Res	1.987	Med J Malaysia	-
Int J Qual Health Care	1.034	Med Sci Law	0.253
Int J Surgery	-	Med Sci Monitor	-
Int J Toxicol	0.944	Microbes Infection	3.753
Intl Pediatr	-	Middle E Pediatrics	-
Int Urogynecol J	1.510	Mol and Biochem Parasitology	2.803
Internet J Asthma, Allergy & Immunol	-	Mol Cell Biochem	1.714
J Advanced Nursing	0.917	Mol Diagn	-
J Am Soc Nephrol	6.644	Mol Immunol	3.196
J Am Vet Medical Association	-	Neth J Med	0.586
J Antimicrob Chemother	3.611	Neurosignals	3.585
J Appl Toxicol	1.360	Nutrition, Health & Ageing	-
J Arab Neon Forum	-	Nutritional Journal	-
J Asian Fed of Endocrine Societies	-	Osteoporos Int	0.654
J Biological Chemistry	6.355	Patient Educ Couns	1.429
J Cardiovas Interv Radiol	-	Pediatr Infect Dis J	2.735
J Child Neurology	1.333	Pediatric Neurology	1.368
J Comparative Pathology	1.365	Peptides	2.511
J Endotoxin Research	2.042	Proc Nat Acad Sci USA	10.452
J Gastroenterology & Hepatology	1.796	Prostate	4.331
J General Virology	3.327	Regul Peptides	2.531
J Human Hypertension	1.930	Reprod Toxicol	1.676
J Hypertens	4.871	Saudi Med J	0.339
J Immunol Methods	2.464	Science	31.853
J Internal Medicine	3.590	Soc Sci Med	-
J Med Genet	4.112	S Afr J Radiol	-
J Med Microbiol	2.484	Stat Med	1.389
J Neurobiol	3.923	Stem Cells	5.500
J Neuroimaging	1.068	Toxicology & Applied Pharmacol	2.618
J Neuroscience	7.097	Teach Learn Med	1.108
J Obstetrics & Gynaecology	0.474	Trans R Soc Trop Med Hyg	1.665
J Obstetrics & Gynaecology Research	0.685	Trop Med Int Health	1.969
J Pediatrics	3.117	Urology	2.585
J Perinatol	0.713	Urol Int	0.564
J Reprod Med	0.778	Vet Microbiol	1.930
J Vet Diag Investigation	0.900	Virology	3.071
J Virology	5.398	Virus Res	2.155
		World J Gastroenterol	-

Biomedical Publications in the Emirates (1989-2004)

In the past year, Karen Neves (NML) and Wim Lammers (Physiology) have analyzed the biomedical research publications achieved in the past decade in the Emirates. Searches were made in three databases; PUBMED, Current Contents and EMBASE. All records from these databases related to the Emirates were downloaded and cross-referenced. Duplications were removed as well as any erroneous records. Ultimately, a total of 1369 publications during 1998-2004 were obtained. Results from previous publications dating back to 1988 were also available.

Analysis of these records revealed that the Faculty of Medicine & Health Sciences, was responsible for 48% of all biomedical publications (figure 1&2). All hospitals together accounted for 24% while other universities and other research institutes accounted for 13% and 14% respectively. Further analysis revealed that there had been no further growth in the number of publications since 1998. Figure 2 is a chart showing all the data obtained from previous studies and this one. The

number of biomedical publications rose quickly from 1988 onwards corresponding with the start of FMHS. From 1998 onwards however, the total number of publications from the whole country and that from FMHS has stabilized to about 200 and 100 papers respectively.

During the analysis, we were struck by the large number of institutions that had contributed to the publication database. We charted the number of institutions that participated in publishing over the years. It is fair to say that about 90% of these institutions published only 1 or 2 papers in the whole 1998-2004 period. As shown in figure 3a, the number of publishing institutions has increased from 29 to 103. However, because the total number of publications was more or less stable, the actual number of publications per institution has dropped from 6.3 to 2.4. In other words, although there is a remarkable increase in potential contributors to the biomedical field, the expected increase in output has yet to materialize.

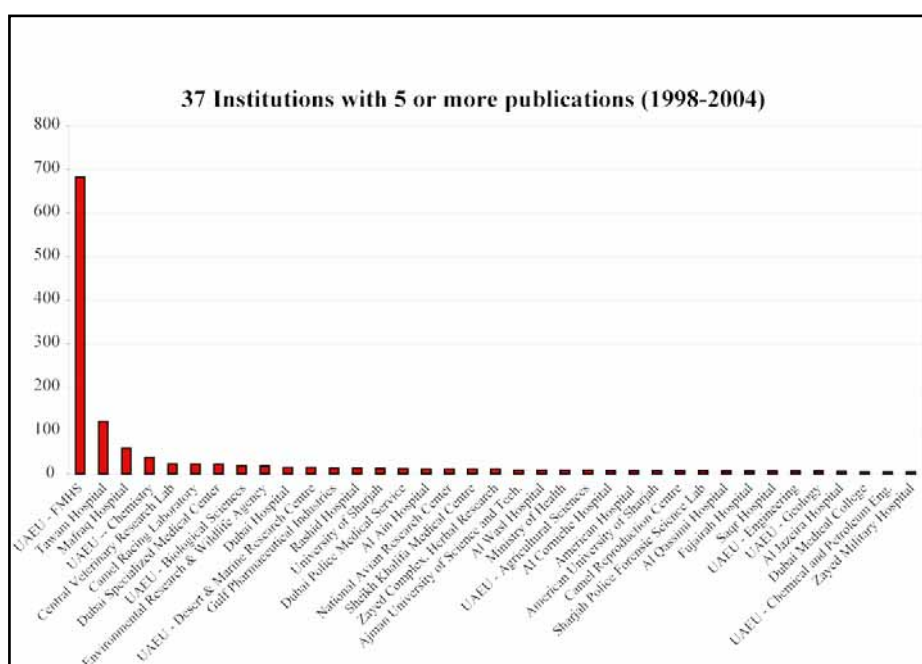


Figure 1: Number of publications from 37 Emirati institutions that produced 5 or more papers in the 1998-2004 period. FMHS = Faculty of Medicine & Health Sciences, UAEU = United Arab Emirates University

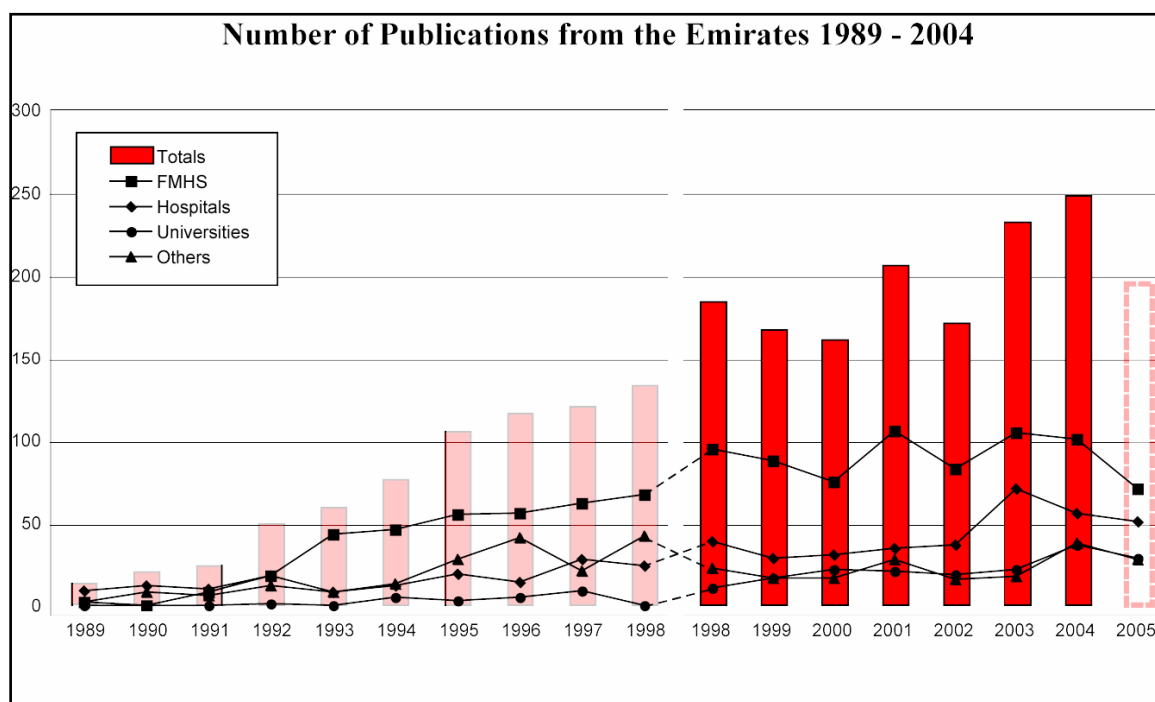


Figure 2: Number of publications from the UAE during the period 1989-2004 for (a) FMHS (b) all hospitals in the nation (c) all colleges and universities (except FMHS) (d) other research centers. The bars represent the total number of publications in every year. The 1998 bar is shown twice, the first time from a previous study (1-4) which only analyzed the Pubmed database and the second time based on data from the current study. The 2005 bar is provisional as the data was still developing when the project was closed.

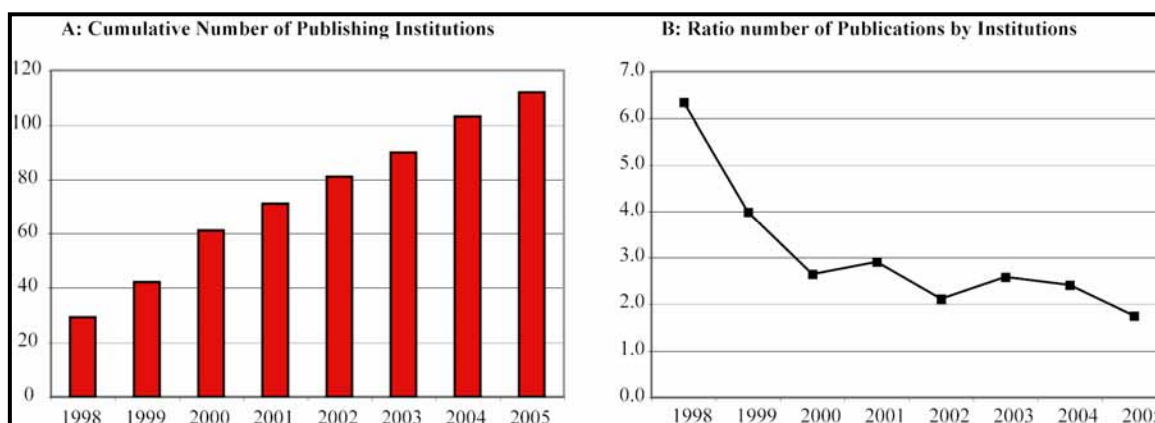


Figure 3: Panel A: Increasing number of institutions that has produced one or more papers in the last eight years as shown by this cumulative graph. Panel B: The average number of publications per institute.

Table 2: Biomedical Publications by Emirates or City

Emirates/City	1998	1999	2000	2001	2002	2003	2004	Total
Al Ain	127	126	115	148	126	163	149	954
Abu Dhabi	36	17	21	24	26	31	30	185
Dubai	18	20	19	23	14	25	42	161
Sharjah	1	3	4	6	3	9	14	40
Ras Al Khaima	0	0	1	4	2	0	5	12
Ajman	1	1	1	1	0	2	4	10
Fujairah	1	0	0	0	0	2	4	7

Table 3: Most frequently used journals
(1998-2004)

	Journals	Total	Impact Factor
1	Saudi Medical Journal	36	0.399
2	Emirates Medical Journal	33	-
3	Annals of Saudi Medicine	26	0.155
4	Eastern Mediterranean Health Journal	21	-
5	Clinical Dysmorphology	17	0.545
6	International Journal of Gynecology and Obstetrics	17	0.754
7	Archives of Physiology and Biochemistry	12	-
8	Molecular and Cellular Biochemistry	12	1.714
9	Transplantation Proceedings	12	0.511
10	Asian Cardiovascular and Thoracic Annals	11	-
11	Biopharmaceutics and Drug Disposition	10	1.068
12	Journal of Tropical Pediatrics	10	0.579
13	Journal of Veterinary Pharmacology and Therapeutics	10	1.23

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ولعل ذلك ما كان ليتحقق لولا تضافر جهود كل من قطاع شؤون البحث العلمي بجامعة الإمارات
بإدارة الدكتور ميثاء الشامسي وفريق البحوث بكلية الطب والعلوم الصحية بإشراف الأستاذ
ميودراغ لوكيتش. إن ما وتبذلونه من جهود من أجل دفع مسيرة البحث العلمي محل تقدير وإجلال
من قبل جميع الباحثين بكلية الطب والعلوم الصحية!

إن غاية كافة البحوث القيمة الخاصة بالعلوم الطبية البيولوجية هي تحسين مستوى الرعاية الصحية
المقدمة للمرضى من خلال توفير تشخيص أحسن وعلاج أفضل. ولبلوغ هذه الغاية ينبغي علينا أن
نسعى لتحسين خدماتنا السريرية وتدعيم علاقات التعاون والشراكة داخل وخارج الدولة. نرحب
بتنامي دور كلية هارفارد الدولية للطب في مدينة دبي وبافتتاح فرع منظمة جون هوبكينز الدولية
بمدينة العين بوصفهما شركاء مرتقبين في مساعينا البحثية.

الأستاذ الدكتور/ صمونيل جورج كرنرس
عميد كلية الطب والعلوم الصحية

الزملاء الأعزاء

مرة أخرى يسرني أن أتوجه بالشكر والثناء إلى كافة المدرسين والفنيين بالكلية على مساهمتهم في رفع مستوى معدل البحوث المنجزة خلال السنة الجامعية 2005. لا يفوتني كذلك أن أشكر ويم لآمارز على ما يبذله من جهود في مراجعة كافة المعلومات المتعلقة بالمنح والمنشورات الخاصة بالكلية وصياغتها في شكل مجلد متكامل من شأنه أن يساهم في إبراز الجهود المبذولة في مجال البحث العلمي بكلية الطب والعلوم الصحية ويساعد على نشرها بين جميع الأطراف المعنية. وبإمكانك أنت، أيها القارئ، أن تساعدنا في سعيينا الدؤوب لتحسين مستوى هذا التقرير السنوي من خلال إبداء آراءك وملاحظاتك حول محتواه وإبلاغنا بما يعجبك أو لم يعجبك فيه.

يعتمد نظام المنح البحثية بكلية الطب والعلوم الصحية على مساهمات عدد كبير من المتبرعين والتي من دونها لا يمكن إجراء أي من البحوث العلمية. وعلى الرغم من القيود المفروضة على ميزانية الجامعة لا يزال التمويل الداخلي للبحوث العلمية من بين أولويات كلية الطب والعلوم الصحية وجامعة الإمارات العربية المتحدة، وهو ما يعد ضرورة أساسية لاستقطاب باحثين من الطراز الأول والاحتفاظ بخدماتهم. كما أننا نقدر حق التقدير ما تقدمه عدة جهات خارجية من مساهمات قيمة لدعم للبحث العلمي نذكر منها جائزة الشيخ حمدان للعلوم الطبية، وصناديق مؤسسة تاري فوكس لدعم بحوث السرطان بدبي وأبو ظبي، وهيئة الهلال الأحمر الإماراتي، ومؤسسة مايكل فوكس ومؤسسة والكام.

ساهمت المؤتمرات العلمية حول مرض السكري وعلم الأعصاب في استقطاب وجلب العديد من الباحثين الدوليين البارزين إلى مدينة العين وقد تم تسجيل إقبال كبير على حضورها ومتابعتها فهنينا لجميع المسؤولين عن التنظيم! ولعل من أبرز النتائج التي عقت مؤتمر علم الأعصاب الزيارة التي قام بها الأستاذ ألبرت أغايو رئيس المنظمة الدولية لأبحاث الدماغ الذي دعا المنظمين إلى التقدم بطلب للانخراط في هذه المنظمة العتيدة، ويسرني بهذه المناسبة أن أعلن أن طلبهم قد حظي بالموافقة. نتمنى لفريق أبحاث علم الأورام حظا مماثلا في تنظيم مؤتمره المقبل حول مستجدات بحوث السرطان.

لقد تمت الموافقة على برنامج الماجستير في العلوم الطبية ومن شأن هذا البرنامج أن يساهم في تعزيز أعمال البحث في مجال علم الأحياء الدقيقة والمناعة وعلم الأدوية والعداوة وعلم السموم. نأمل أن يتم لاحقا توسيع هذا البرنامج ليشمل العلوم العصبية وعلم الوراثة مما من شأنه أن يفتح آفاق واسعة أمام الطلبة والباحثين، وذلك في انتظار إنشاء برنامج الدكتوراه في المستقبل القريب.

يعد البحث العلمي الذي يقوم به الطلبة أحد أهم السمات المميزة لهذه الكلية ومن شأن طلبتنا أن يفخروا بمعية مشرفيهم الأكاديميين بما يحققونه من إنجازات في هذا الصدد. سواء كان مجال البحث العلوم الأساسية أو السريرية وسواء كان الموضوع بسيطا أو معقدا فإن التحدي المتمثل في تناول مسألة ما بالدراسة والبحث لإيجاد حل لها يعد تجربة تعليمية مميزة جدا لكل طبيب مستقبلي.

يسرنا أن نضع بين أيديكم التقرير السنوي الخامس عشر حول المنشورات والبحوث العلمية بكلية الطب والعلوم الصحية بجامعة الإمارات العربية المتحدة. ويعد هذا الإصدار بمثابة امتداد لسلسلة من التقارير السنوية التي دأبنا على إصدارها منذ نشر أول تقرير لنا سنة 1991.

وكما جرت العادة في كل عام فقد سعينا إلى تطوير وتحسين مستوى هذا الدليل ليشمل كالمعتاد لمحات عامة عن مختلف الأقسام العلمية بالكلية بالإضافة إلى التقارير الصادرة عن فرق أولويات البحث. كما أدرجنا كذلك ضمن هذا الإصدار تقارير موجزة حول أبرز المؤتمرات العلمية لهذا العام وخاصة منها مؤتمر علم الأعصاب والمؤتمر الرابع لطلبة كليات الطب بدول مجلس التعاون الذي تم عقده بمسقط. وقد تم كذلك إدراج ملخص للعمل الذي قام به كل من كارن نيفز وويم لامارز حول سجل المنشورات العلمية الخاصة بالعلوم الطبية البيولوجية بدولة الإمارات العربية المتحدة خلال السنوات الماضية.

وكعادتنا دائما نود أن نشكر كل من السيدة شيخة المزروعي والسيدة إيفانا ليزاريتوري لما قاما به من جهود في إعداد هذا التقرير وصياغة كافة أقسامه ضمن مجلد واحد. وقد تولى السيد راجاكوبالان كعادته مراجعة محتوى المساهمات التي قدمتها الأقسام العلمية والتنسيق بين جميع الأطراف. وتولى التقاط الصور المدرجة ضمن هذا المجلد السيد أشوك وقام بالترجمة إلى العربية السيد محمد زقر.

أ.د. وليم لامرز
رئيس التحرير

أ.د. ميودراج لوكيتج
العميد المشارك لشؤون البحث العلمي

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منشورات مكتب العميد المشارك للبحث العلمي

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الترجمة للغة العربية: السيد محمد زافر و السيد عدنان طاهر



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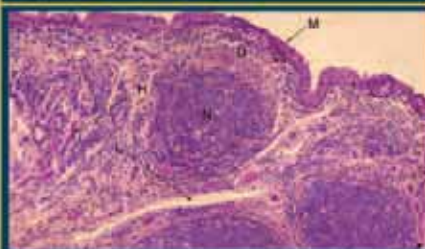
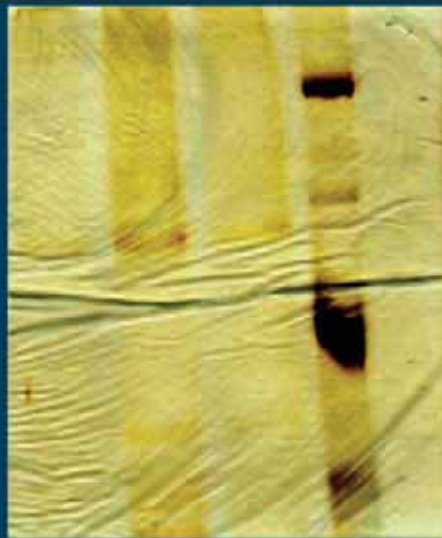
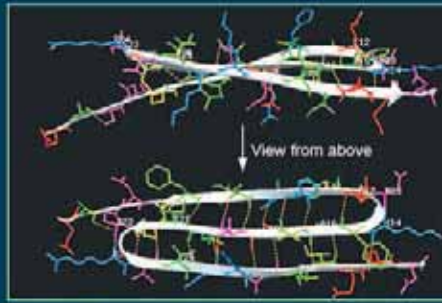
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