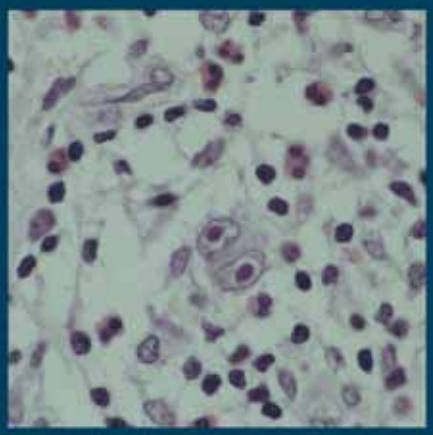
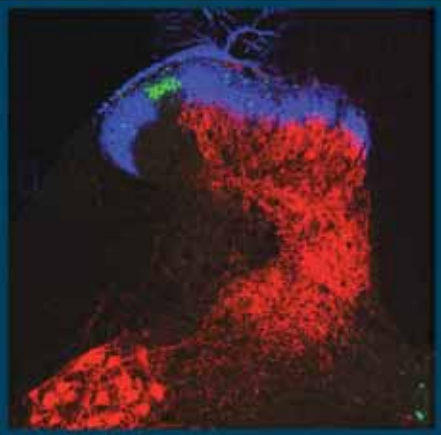
United Arab Emirates University
Faculty of Medicine and Health Sciences

Research Publications 2004 & Research Profiles





Office of the Associate Dean for Research

United Arab Emirates University
Faculty of Medicine and Health Sciences

Research Publications 2004
& Research Profiles

Office of the Associate Dean of Research

Publication of The Office of The Associate Dean for Research

Editor: Prof. Wim Lammers
Secretarial Management: Mr. P Rajagopalan
Graphic Design: Ms. Ivanna Lizarriturri
Formatting & Layout: Ms. Shaikha Al Mazrouei
Photography: Mr. Ashok Prasad
Arabic Translation: Ali Ladahri

Table of Contents

Preface ---------- V

Dean's message ---------- VII

Research Publications by Departments

Anatomy ---------- 3

Biochemistry ---------- 9

Community Medicine ---------- 16

Family Medicine ---------- 22

Internal Medicine ---------- 25

Medical Education ---------- 30

Medical Microbiology ---------- 32

Obstetrics & Gynaecology ---------- 40

Pediatrics ---------- 43

Pathology ---------- 47

Pharmacology ---------- 51

Physiology ---------- 57

Psychiatry ---------- 62

Radiology ---------- 65

Surgery ---------- 66

Research Priority Groups

Diabetes and Cardiovascular ---------- 75

Genetics and Development ---------- 78

Immunoregulation and Infection ---------- 81

Neuroscience ---------- 85

Oncology ---------- 88

Trauma Research Group ---------- 89

International Conference on Emerging Infectious Diseases ---------- 93

Impact factors ---------- 97

Preface

This is the 14th yearly report on **Research Publications and Research Profiles** which includes the directory of research in 2004 for the Faculty of Medicine & Health Sciences, United Arab Emirates University. This volume is a continuation of a series of annual reports and bears testimony to the enduring commitment and success of our individual and collaborative research endeavours.

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. But the most important change was our attempt to publish the booklet in the first part of 2005, hopefully before the summer break.

The work to put all this together, to cater to the individual layouts and to consolidate all the sections into one book was all performed by Ms Shaikha Butti and Mrs Ivanna Lizarriturri. Mr Rajagopalan, as always, took care of editing the initial departmental contribution and the communication between all parties involved.

On behalf of all those who have contributed to this publication, we wish you new exciting achievements in our research environment.

Professor Wim Lammers
Editor

Professor M Lukic
Associate Dean for Research

Dean's Message

Dear Colleagues,

Congratulations to all faculty who have contributed to a very successful year in research during 2004! Behind every Principal Investigator and Senior Author of each publication, there is a team that may include co-investigators, graduate students, medical students, technical staff, secretarial and support staff, as well as volunteers. In some cases, there were also patient subjects in clinical studies, without whom the research would not have been possible. We are grateful to all of them for their contributions to research successes at FMHS.

Among the senior UAE University leadership involved, we are especially grateful to Her Excellency Dr Maitha al Shamsi, Assistant Provost for Research Affairs, and her Advisor, Professor Gharib Aly. They are ably assisted by Professor Mohammed Fahim of FMHS. The recent addition to the University of Professor Jim Fletcher as Assistant Provost for Graduate Studies (Dean for Graduate Studies) indicates the strong commitment of the University to move forward with more diverse Graduate studies, including doctorates in the very near future. We applaud this direction and the rate of progress.

Within our Faculty we continue to benefit from the dedication of Associate Dean for Research Professor Mio Lukic and his team; Professor Gary Nicholls for Clinical Research, Dr. Safa Shehab for Basic Sciences, Dr Chris Howarth for Student Research and Professor Tahir El-Sharkawy for Graduate Studies. We are grateful to Professor Wim Lammers who continues to enhance the quality of the Annual Report year by year.

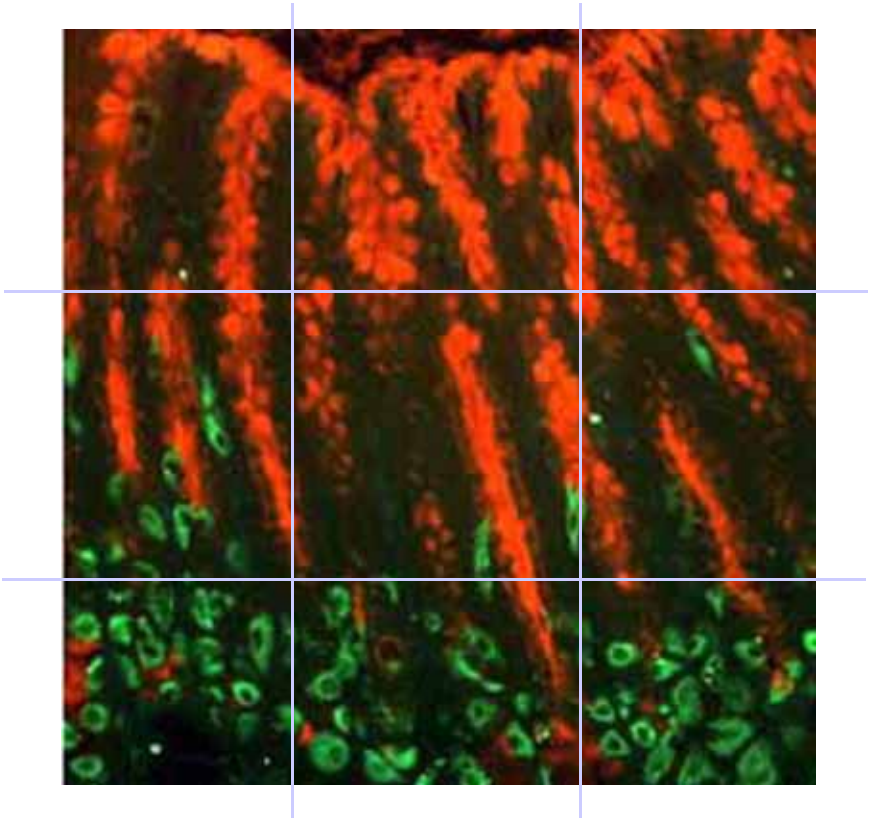
Our Research Priority Groups gather momentum and all have either held, or are planning to hold, a major international research conference. The recent Emerging Infectious Diseases Conference, ably led by Professor Norbert Nowotny, attracted exceptional numbers of international delegates, including a very large North American contingent. Congratulations, Norbert, to you and your colleagues!

Our list of external supporters continues to grow. In addition to the Sheikh Hamdan Awards grants and the Terry Fox Cancer Funds grants, we acknowledge the continuing support of the British Council and the UAE Red Crescent Association. New sponsors include the Michael J Fox Foundation (Parkinson's disease) and the Wellcome Foundation. Research Triangle International has expressed interest in working on a large project on complications of diabetes mellitus in the Emirates. I am confident that these relationships can be fostered and enhanced in future years. Finding sponsors for additions and replacements for our equipment remains a challenge.

Despite their clinical care commitments, investigators in clinical departments continue to be active in research, but there are large unmet opportunities. Recruiting more clinician-researchers remains a priority to enable us to make effective contributions to innovations in patient care management in the UAE.

S George Carruthers, MD
Dean

Research Publications by Department



Department of Anatomy

Prof G Buzzell	Professor, Chairman	**Mr A Gbewonyo**	Technician (EM)
Prof L Garey	Professor	**Mr W Wanniarachi**	Technician (DR)
Prof R Padmanabhan	Professor	**Ms L Ravindranathan**	Secretary
Prof E Adeghate	Professor	**Ms H Ahmed**	Administrative Assistant
Dr E Mensah-Brown	Associate Professor	**Mr TV Basheer**	Office Assistant
Dr S Shehab	Associate Professor	**Ms A Ali**	Technician
Dr S Karam	Associate Professor	**Mr S Ponery**	Technician
Mr S Tariq	Technician (EM)	**Mr M Madathil**	Technician
		Mr RS Hameed	Technician

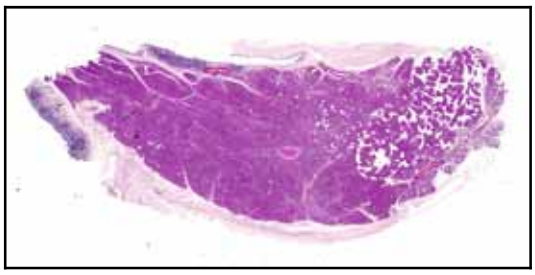
Tel: 7672000 / Fax: 7672033 / http://www.fmhs.uaeu.ac.ae/Departments/Anatomy

Front row: Laurence Garey, Sherif Karam, Rony John, Gerald Buzzell, Lakshmi Ravindranathan, Mohammed Hussein, Soni Lal. *Back row:* Mohammed Madathil, Ernest Adeghate, Saeed Tariq, Padmanabhan Rengaswami, A. Wanniarachi, Armstrong Gbewonyo, Eric Mensah-Brown, R.S. Hameed, Samad Ponery, T.V. Basheer. *Absent:* Safa Shehab, Hessa AlQahtam.

RESEARCH PROFILE

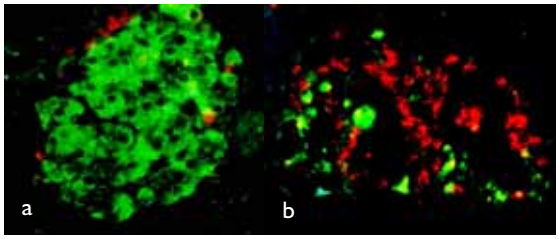
The Department of Anatomy pursues several lines of research in a variety of disciplines. We show considerable strength in the fields of neurobiology, cell renewal, teratology, diabetes, and the structure and function of glands.

Prof. Gerald R. Buzzell, who has studied medial orbital glands (Harderian glands) of hamsters in the past, has initiated a study of the homologous glands in the dromedary camel. Unlike true Harderian glands, these glands secrete a glycoprotein and are therefore more correctly referred to as nictitans glands. They are intimately related to the conjunctiva of the third eyelid (nictitating membrane) and with the conjunctiva associated lymphoid tissue.



Whole scan of a section of camel nictitans gland stained with PAS. Note the conjunctiva-associated lymphoid tissue (left), adipose tissue (right), and the cartilage rod in the center.

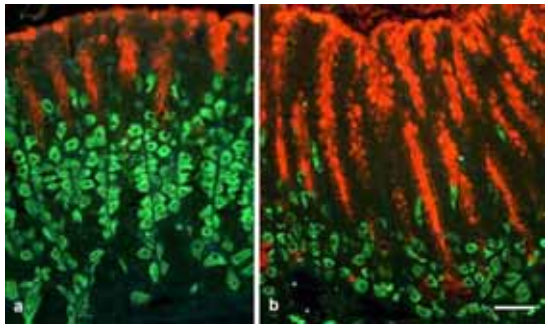
Prof. Ernest Adeghate's major research interest is on the effect of pancreas transplantation on the metabolic parameters in experimental diabetes. He also examines the role of neuropeptides on insulin and glucagon secretion from the pancreas, especially in the diabetic condition.



Orexin-1 receptor (OX_1R)-immunoreactive cells (red) and insulin-positive cells (green) in the pancreatic islets of normal (a) and diabetic (b) rats. Note that some cells (orange-yellow) contain both OX_1R and insulin. X400.

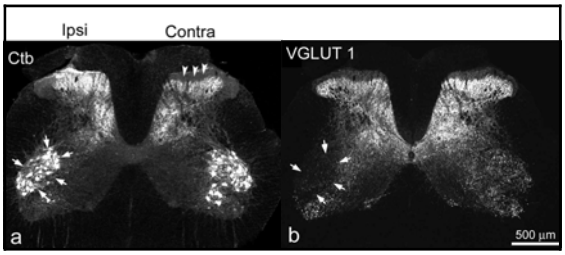
Recent results from his laboratory showed that orexin receptors are found in the islet cells of normal and diabetic rats. The number of orexin receptor-positive cells increased in number after the onset of diabetes. Moreover the number of islets containing both OX-R1 and insulin increased after the onset of diabetes. In addition, orexin stimulates insulin release from pancreatic tissue fragments. This observation showed that orexin may play a role in the modulation of insulin release from the pancreas.

The aim of **Dr. Sherif 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.



Members of pit and parietal cell lineages are labeled with *Ulex europeus* type I agglutinin lectin (red) and anti-H,K-ATPase beta subunit (green) in control (a) and trefoil factor 1-knockout (b) mice. [**Displayed on front cover of Gut, vol. 53, no. 10**]

Dr. Safa 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 axotomy causes sprouting of injured primary afferents in the dorsal horn. In addition, he has shown that primary afferents of intact nerves do not sprout in the dorsal horn of the spinal cord in response to the injury of neighbouring nerves. He is currently investigating the pain pathways that are likely to be critical in the production of the neuropathic pain and the role of the subthalamic nucleus in controlling epileptic seizures using an animal model of epilepsy.



Cholera toxin subunit B- (CTb) and Vesicular glutamate transporter 1- (VGLUT1) labelling in a transverse section of the spinal cord following bilateral injection of CTb into the sciatic nerves 8 weeks after the left sciatic nerve was transected. **a)** CTb-labelling is seen in both primary afferents and motoneurons: on the contralateral (contra) side labelling is absent from substantia gelatinosa (arrow heads), while on the ipsilateral (ipsi) side there is labelling throughout the dorsal horn. In **b** there is obvious depletion of VGLUT1-labelling from the medial dorsal horn on the ipsilateral side, and almost complete loss of labelling from the part of the ventral horn between the arrows.

Current research in **Prof R Padmanabhan**'s laboratory focuses on pathogenetic mechanisms of craniofacial malformations and neural tube defects. Results of recent studies on preventive effects of folic acid on NTD indicate that moderate but repeated doses of folic acid over an extended period during organogenesis maintains an elevated plasma folate concentration in the mother and provides greater protection than single acute doses against VPA-induced exencephaly in the mouse. Additional studies include the roles of vascular disruption in limb malformations, fetoplacental malformations in maternal diabetes, reproductive toxic effects of anticonvulsants, the role of heat shock proteins in craniofacial malformations, the effects of the antioxidant α-lipoic acid on diabetic embryopathy, the effect of antioxidant vitamins on lead-induced implantation failure in the mouse, and human dysmorphic syndromes.

Dr Eric Mensah-Brown's interests have been in the immunohistology of the autoimmune conditions of type-1 diabetes and its complications and the animal model of multiple sclerosis, experimental allergic encephalomyelitis (EAE). Of particular interest has been the study on the effect of various cytokines (IL-15, IL-18, IL-23, IL-27) on apoptosis and diabetogenesis and EAE. He has also been investigating the role of Galectin-3 and Th1/Th2 axis in diabetogenesis with galectin and ST2/T1 mice (Th2 knock out). He has continued to pursue his interest in the role of microglia and astrocytes in EAE pathology. Recently he has examined the effect of monosodium glutamate on insulin secreting β cells in the pancreas of rats to determine the possibility of using it as an experimental model for type-2 diabetes. He has also been investigating the neuroanatomical bases for the ability of the one-humped camel to survive the harsh arid conditions of the desert. So far he has examined the distribution of the neuropeptides in the enteric nervous system to test the hypothesis that the camel employs its gastrointestinal tract to conserve water. He has also examined the distribution of neuropeptides in the superior colliculus and periaqueductal gray mater to determine what roles this might play in the central analgesic pathway involving opioids. He has recently started a collaborative study into the hippocampal formation of the one-humped camel to determine its cellular profile, especially that of the entorhinal cortex which is known to play a significant role in the pathogenesis of febrile convulsions.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Adeghate E, Parvez H. (2004). The effect of diabetes mellitus on the morphology and physiology of monoamine oxidase in the pancreas. Neurotoxicology 25:167-173.

Adeghate E. (2004). Molecular and cellular basis of the aetiology and management of diabetic cardiomyopathy: A short review. Molecular and Cellular Biochemistry 261: 187-191.

Adeghate E. (2004). An update on the biology and physiology of resistin. Cellular and Molecular Life Sciences 61: 2485-2496.

Adeghate E, Ponery AS. (2004). Mechanism of ipamorelin-evoked insulin release from the pancreas of normal and diabetic rats. Neuroendocrinology Letters 25: 1-4.

Adeghate E, Ponery AS. (2004). Diabetes mellitus influences the degree of co-localization of calcitonin-gene-related-peptide with insulin and somatostatin in the rat pancreas. Pancreas 29: 311-319.

Adeghate E, Ponery AS, Parvez H. (2004). Effect of adrenergic and cholinergic agonists on vasoactive intestinal polypeptide release from pancreatic islets of normal and diabetic rats. Biogenic Amines 18: 197-206.

Ahmed I, Adeghate E, Cummings E, Sharma AK, Singh J. (2004). Beneficial effects and mechanism of action of *Momordica charantia* fruit juice in the treatment of streptozotocin-induced diabetes mellitus in rat. Molecular and Cellular Biochemistry 261: 63-70.

Ahmed I, Calle Y, Sayed MA, Kamal JM, Padmanabhan R, Manser E, Meiners S, Nur-E-Kamal. (2004). A.Cdc42-dependent nuclear translocation of non-receptor tyro-

sine kinase, ACK. Biochem Biophys Res Commun. 314: 571-579.

Al Ghafli MH, Padmanabhan R, Kataya HH, Berg B. (2004). Effects of alpha-lipoic acid supplementation on maternal diabetes-induced growth retardation and congenital anomalies in rat fetuses. Molecular and Cellular Biochemistry. 261:123-135.

Al-Ghaithi F, El-Ridi MR, Adeghate E, Amiri MH. (2004). Biochemical effects of *Citrullus colocynthis* in non-diabetic and diabetic rats. Molecular and Cellular Biochemistry 261: 143-149.

Al Shamsi MS, Amin A, Adeghate E. (2004). Beneficial effect of vitamin E on the metabolic parameters of diabetic rats. Molecular and Cellular Biochemistry 261: 35–42.

Cummings E, Hundal HS, Wackerhage H, Hope M, Belle M, Adeghate E, Singh J. (2004). *Mormodica charantia* fruit juice stimulates glucose and amino acid uptake in L6 myotubules. Molecular and Cellular Biochemistry 261: 99-104.

Howarth FC, Qureshi A, Adeghate E. (2004). Contraction and intracellular free Ca 2+ concentrations in ventricular myocytes from rats receiving sucrose-enriched diets. International Journal of Diabetes and Metabolism 12: 5-9.

Hughes, D.I., Polgar, E., Shehab, S.A.S. Todd, A.J. (2004). Peripheral axotomy induces depletion of the vesicular glutamate transporter VGLUT1 in central terminals of myelinated afferent fibres in the rat spinal cord. Brain Research 1017: 69-76.

Karam SM, Tomasetto C, Rio MC. (2004). Trefoil factor 1 is required for the commitment programme of mouse oxyntic epithelial progenitors. Gut, 53:1408-1415.

Karam SM, Ansari HR, Alexander G. (2004). Retinol enhances differentiation of the gastric parietal cell lineage in developing rabbits. Cell Physiology and Biochemistry, 14:333-342.

Mahay S, Adeghate E, Lindley MZ, Rolph CE, Singh J. (2004). Streptozotocin-induced type 1 diabetes mellitus alters the morphology, secretory function and acyl lipid contents in the isolated rat parotid salivary gland. Molecular and Cellular Biochemistry 261: 175-181.

Mahay S, Pariente JA, Lajas AI, Adeghate E, Rolph CE, Singh J. (2004). Effects of ageing on morphology, amylase release, cytosolic Ca2+ signals and acyl lipids in isolated rat parotid gland tissue. Molecular and Cellular Biochemistry 266: 199-208.

Mensah-Brown EPK, Rizk DEE, Patel M, Chandranath SI, Adem A. (2004). Effects of ovariectomy and hormone replacement on submucosal collagen and blood vessels of the anal canal of rats. Colorectal Disease 6: 481-487.

Obineche EN, Adeghate E, Chandranath IS, Benedict S, Ghafri LS, Adem A. (2004). Alterations in atrial natriuretic peptide (ANP) and its receptors in streptozotocin induced diabetic rat kidneys. Molecular and Cellular Biochemistry 261: 3-8.

Osman N, Sabban FF, A, Khawli A, Mensah-Brown EPK. (2004). Effect of foodstuff contamination by aflatoxin on the one humped camel (*Camelus dromedarius*) in Al Ain, United Arab Emirates Aust Vet J. 82:759-761.

Padmanabhan R, Shafiullah M. (2004). Effect of maternal diabetes and ethanol interactions on embryo development in the mouse. Mol Cell Biochem. 261:43-56.

Patel R, Yago MD, Manas M, Martinez-Victoria E, Adeghate E, Singh J. (2004). Interactions of islet peptides with cholecystokinin-octapeptide in the normal and diabetic rat pancreas. Current Topics in Peptide and Protein Research 6: 47-56.

Singh J, Adeghate E, Aparico S, Hopkin R. (2004). Exocrine pancreatic insufficiency in diabetes mellitus. International Journal of Diabetes and Metabolism 12: 35-43.

Shehab SAS, Spike RC, Todd AJ. (2004). Do central terminals of intact myelinated primary afferents sprout into the superficial dorsal horn of rat spinal cord after the injury of a neighbouring peripheral nerve? Journal of Comparative Neurology 474: 427-437.

Syder AJ, SM Karam, JC Mills, JE Ippolito, HR Ansari, V Farook, JI Gordon. (2004). A transgenic mouse model of metastatic carcinoma involving trans-differentiation of a gastric epithelial lineage progenitor to a neuroendocrine phenotype. Proceedings of the National Academy of Sciences USA, 101:4471-6.

PUBLISHED ABSTRACTS, LETTERS AND CORRESPONDENCE

Howarth FC, Adeghate E, Jacobson M, Fatima-Shad K. (2004). Progressive short-term effects of streptozotocin-induced diabetes on electrical activity of the heart. Journal of Physiology (London) 557P: C13.

Lukic ML, Mensah-Brown E, Shahin A, Liew FY. (2004). IL-18 is required for the induction of autoimmune diabetes in mice. FASEB Journal 18: 779.8.

Mensah-Brown EPK, Garey LJ. (2004). The lamination of the superior colliculus of the camel, *Camelus dromedarius*: a neuron-specific nuclear protein and neuropeptidergic immunohistochemical study. Journal of Anatomy 204 231-232.

Padmanabhan, R, Shafiullah, Benedict S. (2004). Exogenous homocystine augments sodium valproate-induced exencephaly in mouse embryos. Teratology 70:306.

Shehab SAS, Spike R.C. Todd A.J. (2004). Lack of sprouting of intact myelinated primary afferents in dorsal horn of rat spinal cord after the injury of a

neighbouring peripheral nerve. Society for Neuroscience Abstracts, 30, 858.7.

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

Adeghate E. (2004). Notes on the reinnervation of pancreatic tissue grafts in rat. 23rd Workshop of the Pancreas and Transplantation Study Group of the EASD held in IGLS-Innsbruck, Austria. January 25-27.

Adeghate E. (2004). Notes on the effect of diabetes mellitus on the morphology and function of the rat lacrimal gland. Fourth International Conference on the Lacrimal Gland, Tear Film and Dry Eye Syndromes: Basic Sciences and Clinical Relevance. Puerto Rico, USA, November 17-21.

Al-Dhaheri A, Kataya H, Karam SM. (2004). Gastric epithelial alterations during stress ulcer formation. Fifth Annual Research Day, UAE University.

Buzzell GR. (2004). Very low power observation of stained sections in the teaching of histology: the use of a slide scanner. Fourth GCC Medical Education Conference, Al Ain.

Garey L, Mensah-Brown E. (2004). Is there a morphine store in the brain of the camel? Emirates Natural History Group. http://www.enhg.org/articles/brain/laurence.htm

Garey LJ, Mensah-Brown E. (2004). The brain of camel, *Camelus dromedarius*: a study of a possible pain inhibiting pathway. Tribulus 14:12-17.

Howarth C, Adeghate E, Jacobson M, Fatima-Shad K. (2004). Progressive short-term effects of streptozotocin-induced diabetes on electrical activity of the heart. Fifth Annual Research Day, UAE University.

Jacobson M, Howarth C, Adeghate E, Fatima-Shad K. (2004). Telemetry-based data acquisition system for chronic physiological measurement. Fifth Annual Research Day, UAE University.

Karam SM. (2004). Origin of gastric neuroendocrine cancer. Fifth Annual Research Day, UAE University.

Karam SM. (2004). Pathogenesis of gastric cancer. The Annual Meeting of Emirates Pathologists, Dubai, UAE.

Karam SM. (2004). Cell commitment program in the gastric glands. The 16th Congress of the International Federation of Associations of Anatomists (IFAA), Kyoto, Japan. Anatomical Science International vol 79, Sept 2004. [invited speaker]

Karam SM. (2004). Role of trefoil factor 1 in the development of the gastric glands. Fourth International Conference on Trefoil Factors, Strasbourg, France. [invited speaker]

Karam SM, Ansari HR. (2004). Retinol upregulates postnatal development of gastric parietal cells. Fifth Annual Research Day, UAE University.

Karam SM, Farook V, Alkhalaf M. (2004). Transcriptional regulation of H,K-ATPase beta-subunit gene in a new gastric epithelial cell line. The XXXII Meeting of the International Society of Oncodevelopmental Biology and Medicine (ISOBM), Helsinki, Finland.

Mensah-Brown EPK, Garey LJ, Ali A, Kubba J. (2004). The lamination of the superior colliculus of the camel, *Camelus dromedarius*: a neuron-specific nuclear protein and neuropeptide study. Fifth Annual Research Day, UAE University.

Mensah-Brown EPK, Shahin A, Garey L, Lukic M. (2004). Microglial expression of Cd 11b/c correlates to resistance to experimental allergic encephalomyelitis. Clinical Inv Med M10.41.

Morrison JFB, Mensah-Brown E. (2004). Changes in Amines, NPY and tyrosine hydroxylase in the seminal vesicle of the STZ-diabetic rat. Proceedings of the Federation of European Neurosciences, Lisbon.

Padmanabhan R, Shafiullah M. (2004). Exogenous homocystine augments sodium valproate-induced exencephalus in mouse. Fifth Annual Research Day, UAE University.

Petroianu, Adeghate E, Hasan MY, Saleh A, Kosanovic M, Ponery AS. (2004). Intraperitoneal exposure to captropril but not to lisinopril activates the peroxisome proliferator activated receptor (PPAR). Fifth Annual Research Day, UAE University.

RESEARCH GRANTS 2004

FMHS Grants

Dr EPK Mensah-Brown
The role of interleukin 1 receptor-related molecule T1/ST2 in pathogenesis of type 1 diabetes.

Dr EPK Mensah-Brown
The roles of interleukin-27 (IL-27) in experimental type-1 diabetes

Dr S Karam
Developmental control of gastric glands

Prof R Padmanabhaban
Interactions in diabetes: The effect of maternal valproate treatment on fetal development in streptozotocin-induced diabetes in the mouse.

Prof R Padmanabhaban
Light and electron microscopic abnormalities of the urinary bladder in streptozotocin-induced diabetes in female rats.

Dr S Shehab
Ascending spinal pathways that are critically involved in the production of hyperalgesia.

Dr S Shehab
A model of chronic muscle pain associated with low-

intensity muscle work and altered muscle sympathetic tone.

UAE University Grants - 2004
Prof E Adeghate
The effect of resistin on the metabolic parameters of type II diabetic rats.

Dr EPK Mensah-Brown
Histological and neurochemical studies on an animal model of type II diabetes.

Prof R Padmanabhaban
Diabetes and Pregnancy: Pathogenetic mechanisms of pregnancy failure, preimplantation loss and embryo re-sorption in streptozotocin-induced diabetes in the mouse.

Hamdan Award Medical Research Grant
Prof R Padmanabhaban
Reproductive toxicologic studies on topiramate in the mouse.

Terry Fox Research Grants
Dr S Karam
Studies on normal & cancerous gastric epithelial cells

Department of Biochemistry

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

Tel: 7672000 / Fax: 7672033 / http://www.fmhs.uaeu.ac.ae/Departments/Biochemistry

Standing left to right: A. Qader, O.M.A. El-Agnaf, S. Galadari, J.M. Conlon, A.H. Al-Marzouqi, M. Qureshi.
Seated left to right: A. John, M. Fernandez-Cabezudo, M. Patel, K. Hammond, M. Panteva.

The year 2004 has seen appreciable turnover of the members of the Biochemisry department. Dr Omar El-Agnaf was recruited from the University of Lancaster, U.K. to the position of Associate Professor. Ms E. Rahman and Ms. N. Al-Ghaferi have joined the department from the Higher College of Technology, Al-Ain as laboratory technicians and Ms G. Jenaibi as departmental secretary. Dr M.P.T. Gillett (Associate Professor), Dr C. Vijayasarathy (Visiting Assistant Professor), Ms S. T. Khan (Laboratory Technician) and Ms A.L. Kumar (Laboratory Technician) have departed.

RESEARCH PROFILE

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: Over the last year, we characterized a novel pathway by which T lymphocytes can be activated. This pathway is induced by ligation of a cell surface-expressed protein known as CD43. We described a role for Lck in the regulation of CD43 signaling in T cells. In a related project, we began to dissect the mechanism by which Lck-deficient T cells are induced to apoptosis. This work, so far, revealed that Lck deficiency leads to (1) the activation of several pro-apoptotic mediators such as Cytochrome c, caspases 3 and 9 and (2) the inhibition of anti-apoptotic proteins including Bcl-2.

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) Comparison of activities between wt and ΔBromodomain SWI/SNF using restriction enzyme remodeling assays and octamer transfer assays.

(2) The Swi2/Snf2 bromodomain deletion SWI/SNF has reduced remodeling activity on SAGA-acetylated nucleosomes compared to the wt SWI/SNF. (3). The Swi2/Snf2 bromodomain deletion SWI/SNF can not transfer SAGA-acetylated nucleosomes to biotinylated or 32P-labelled DNA template as well as the wt SWI/SNF

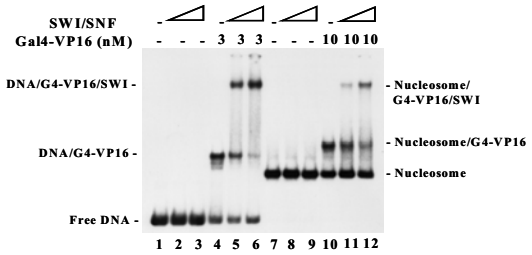


Figure 1. Targeting of SWI/SNF to Gal4-VP16 bound mononucleosomes

SWI/SNF is targeted to Gal4-VP16 bound mononucleosomes. A single Gal4-site DNA probe (183 bp) was reconstituted into mononucleosomes by the octamer transfer method and bound by Gal4-VP16 (lanes 10-12). SWI/SNF and competitor chromatin were subsequently added to the reactions. Approximately 20 to 25-fold excess competitor cellular chromatin was added to all the reactions. The samples were resolved on a native acrylamide gel (3.5%, 79:1 acrylamide to bisacrylamide). The positions of mononucleosomes, Gal4-VP16-bound nucleosomes, and nucleosomes/Gal4-VP16 bound by SWI/SNF are indicated. Targeting of SWI/SNF to Gal4-VP16 bound DNA is shown for comparison (lanes 4-6).

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

The inducibility and differential expression of the xenobiotic metabolising enzymes, cytochrome P450s (CYP) and glutathione S-transferases (GST) in response to exposure to environmental pollutants, toxicants, and carcinogens are being investigated. Glutathione metabolism, oxidative stress and lipid peroxidation, along with the role

of CYP and GSTs are being investigated to elucidate the molecular mechanisms of cellular toxicity and how cellular protection against toxic insults may occur.

***Research Highlights*:** We have discovered a new family of drug metabolizing enzymes, flavin-containing monooxygenases (FMO), in Arabian camel tissues and have demonstrated that catalytically, they are similar to those reported in humans and rats. We have also reported a specific role of mitochondrial oxidative metabolism in the development of diabetic complications in rats.

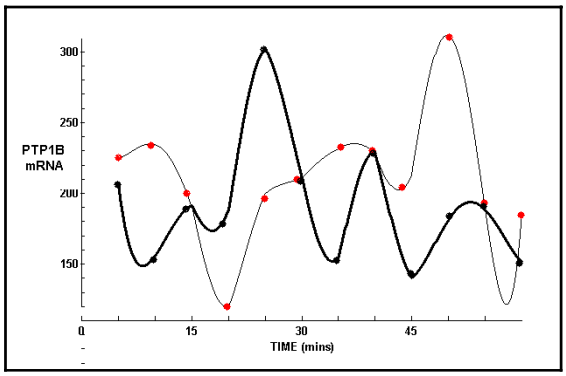
Cell dynamics and the regulation of cell proliferation, differentiation and neoplastic transformation (Prof. K. Hammond)

Research focuses on dynamic aspects of the regulation of phosphorylation of key proteins and the mechanisms by which signal transduction and apoptotic networks can be modulated, in particular in relation to cell proliferation, differentiation and cancer. Proteomic and gene and protein array approaches are being adopted in these studies.

Research highlights:

- Protein tyrosine kinase activity was measured in human lymphocytes. In healthy subjects the values were significantly higher than in leukaemic patients. This finding is interesting as increased activity of protein tyrosine kinase is often thought to be associated with cancer. It is possible that cyclic variations, as seen in cell lines in culture, could also be a factor in regulating kinase activity in lymphocytes in human subjects and investigation of this may be worthwhile. The possibility arises that protein tyrosine kinase could be a useful leukaemia marker; this needs to be explored further in the different forms of the disease.

- The occurrence of rhythmic variations in expression of a phosphatase mRNA was revealed for the first time. Changes in the frequencies and phasings of the rhythms of expression of protein tyrosine phosphatase 1B (PTP1B) mRNA were observed in human leukaemia cells induced to differentiate with all-trans retinoic acid (ATRA); modulation in this way could be an essential regulatory mechanism of importance with respect to reversal of cancer.



Rhythmic patterns of expression of PTP1B mRNA in human leukaemia cells:

–Proliferating cells grown in the absence of ATRA – thin line

–Differentiating cell grown in the presence of ATRA – thick line

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 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.

Our research effort is focused on studying the role of sphingolipids, a novel group of putative second messengers, and the enzymes that produce them. In particular, our effort is focused on ceramide, sphingosine, and sphingosine 1-phosphate. This group of messengers play vital signaling role in apoptosis, angiogenesis and stress responses. We are applying the tools of molecular cell biology as well as classical biochemistry to elucidate the function of these messengers.

***Research Highlights*:** We have been investigating ceramidases which regulate the levels of ceramide, sphingosine, and sphingosine 1-phosphate. Recently, we have purified a second neutral ceramidase and we intend to fully characterize this enzyme.

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 neurodegenrative diseases.

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.

Research highlights: We have developed novel ELISA method that specifically recognizes only oligomeric species of α-synuclein protein associated with Parkinson's disease and dementia with Lewy bodies. 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 as potent inhibitor 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.

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 occuring peptides with increased antimicrobial potency but with decreased toxicity towards mammalian cells are being studied.

***Research Highlights*:** The tailed frog *Ascaphus truei* occupies a unique position in phylogeny as the most primitive extant anuran and is regarded as the sister taxon to the clade of all other living frogs. Eight structurally-related peptides, termed ascaphins 1 – 8, were isolated from norepinephrine-stimulated skin secretions of *A. truei* that possess growth inhibitory activity against a range of pathogenic microorganisms. The ascaphins show no appreciable structural similarity with other families of antimicrobial peptides from frog skin but display limited sequence identity with the cationic, amiphathic α-helical peptides pandinin 1 and opistoporin 1, isolated from the venoms of African scorpions. Our data demonstrate that the host defence strategy of using antimicrobial peptides in skin secretions arose early in the evolution of anurans.

Ascaphin-1	GFRDVLKGAAKAFVKTVAGHIAN.NH_2
Ascaphin-2	GFRDVLKGAAKQFVKTVAGHIANI
Ascaphin-3	GFRDVLKGAAKAFVKTVAGHIANI
Ascaphin-4	GFKDWIKGAAKKLIKTVAANIANQ
Ascaphin-5	GIKDWIKGAAKKLIKTVASHIANQ
Ascaphin-6	GFKDWIKGAAKKLIKTVASSIANE
Ascaphin-7	GFKDWIKGAAKKLIKTVASSIANQ

The phylogenetically ancient tailed frog, *Ascaphus truei* synthesizes peptides in its skin with broad spectrum antimicrobial activity

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

al-Ramadi BK, Fernandez-Cabezudo MJ, Mustafa N, Xu D. (2004). Activation of innate immune responses by IL-2-expressing *Salmonella typhimurium* is independent of Toll-like receptor 4. Molecular Immunology 40; 671-679.

al-Ramadi BK, Bashir G, Rizvi T, Fernandez-Cabezudo MJ. (2004). Poor survival but high immunogenicity of IL-2-expressing *Salmonella typhimurium* in inherently resistant mice**.** Microbes and Infection 6; 350-359.

Bevier CR, Sonnevend A, Kolodziejek J, Nowotny N, Nielsen PF, Conlon JM. (2004). Purification and characterization of antimicrobial peptides from the skin secretions of the mink frog *Rana septentrionalis*. Comparative Biochemistry and Physiology C: 139; 31-38.

Bodles AM, El-Agnaf OMA, Greer B, Guthrie DJS, Irvine GB.(2004). Inhibition of fibril formation and toxicity of a fragment of α-synuclein by an N-methylated peptide analogue. Neuroscience Letters 359; 89-93.

Conlon JM. (2004). The therapeutic potential of antimicrobial peptides from frog skin. Reviews in Medical Microbiology 15; 17-25.

Conlon JM, Kolodziejek J, Nowotny N. (2004). Antimicrobial peptides from ranid frogs: taxonomic and phylogenetic markers and a potential source of new therapeutic agents. Biochimica Biophysica Acta 1696; 1-14.

Conlon JM, Seidel B, Nielsen PF. (2004). An atypical member of the brevinin-1 family of antimicrobial peptides isolated from the skin of the European frog *Rana dalmatina*. Comparative Biochemistry and Physiology C: 137; 191-196.

Conlon JM, Sonnevend A, Davidson C, Smith DD, Nielsen PF. (2004). The ascaphins: a family of antimicrobial peptides from the skin secretions of the most primitive extant frog, *Ascaphus truei*. Biochemical. Biophysical Research Communications 320; 170-175.

Conlon JM, Sonnevend A, Patel M, Al-Dhaheri K, Nielsen PF, Kolodziejek J, Nowotny N, Iwamuro S, Pál T. (2004). A family of brevinin-2 peptides with potent activity against *Pseudomonas aeruginosa* from the skin of the Hokkaido frog, *Rana pirica*. Regulatory Peptides 118; 135-141.

Delarue C, Conlon JM, Remy-Jouet I, Fournier A, Vaudry H. (2004). Endothelins as local activators of adrenocortical cells. Journal of Molecular Endocrinology 32; 1-7.

El-Agnaf OMA, Gibson G, Lee M, Wright A, Austen B. (2004). Properties of neurotoxic peptides related the BRI gene. Protein and Peptide Letters 11; 207-212.

El-Agnaf OMA, Paleologou KE, Abogrein AM, Greer B, Harriott P, Allsop D. (2004). A Strategy for designing inhibitors of α-synuclein aggregation and toxicity as a novel treatment for Parkinson's disease and related disorders. FASEB Journal 18; 1315-1317.

Fernandez-Cabezudo MJ, Vijayasarathy C, Pflugh DL, Bothwell ALM, al-Ramadi BK. (2004). Evidence for a dual pathway of activation in CD43-stimulated Th2 cells: differential requirement for the Lck tyrosine kinase. International Immunology 16; 1215-1223

Gibson G, Gunasekera N, Lee M, Lelyveld V, El-Agnaf OMA, Wright A, Austen B. (2004). Oligomerisation and neurotoxicity of the amyloid ADan peptide implicated in Familial Danish Dementia. Journal of Neurochemistry 88; 281-290.

Iwata T, Conlon JM, Nakada T, Toyoda F, Yamamoto K, Kikuyama S. (2004). Processing of multiple forms of preprosodefrin in the abdominal gland of the red-bellied newt, *Cynops pyrrhogaster*: regional and individual differences in preprosodefrin gene expression. Peptides 25; 1537-1543.

Martin FL,, Williamson SJM, Paleologou KE, Allsop D, El-Agnaf OMA (2004). α-Synuclein and the pathogenesis of Parkinson's disease. Protein & Peptide Letters, 11; 229-237.

Moore SA, Huckerby TN, Gibson G, Fullwood NJ, Turnbull S, Tabner BJ, El-Agnaf OMA, Allsop D.(2004). Both the D(+) and L(-) enantiomers of nicotine inhibit Ab aggregation and cytotoxicity. Biochemistry, 43; 819-826.

Pohajdak B, Mansour M, Hrytsenko O, Conlon JM, Dymond LC, Wright JR. (2004). Production of transgenic tilapia with Brockmann bodies secreting [desThrB30] human insulin. Transgenic Research 13; 313-323.

Raza H.**,** Ahmed I, John A. (2004). Tissues specific expression and immunohistochemical localization of glutathione S-transferase in Streptozotocin-induced diabetic rats: Modulation by *Momordica charantia* (karela) extract. Life Sciences 74; 1503-1511.

Raza H, Bhagwat SV, John A. (2004). Flavin-containing monooxygenase activity in camel tissues: comparison with rat and human liver enzymes. Comparative Biochemistry and Physiology C: 139: 289-293.

Raza H, John A. (2004). Glutathione metabolism and oxidative stress in neonatal rat tissues from streptozotocin-induced diabetic mothers. Diabetes/ Metabolism Research Reviews 20; 72-78.

Raza H, Prabu SK, Robin M-A, Avadhani NG. (2004). Elevated mitochondrial cytochrome P4502E1 and glutathione S-transferase A4-4 in streptozotocin-induced diabetic rats. Tissue specific variations and roles in oxidative stress. Diabetes 53; 185-194.

Sonnevend A, Knoop FC, Patel M, Pál T, Soto AM, Conlon JM. (2004). Antimicrobial properties of the frog skin peptide, ranatuerin-1 and its [Lys-8]- substituted analog. Peptides 25; 29-36.

BOOKS, CHAPTERS, REVIEWS, EDITORIALS

Al-Marzouqi A. (2004). Transcriptional regulation of genes by chromatin-modifying complexes and its link to cancer. In: Genetic Disorders in the Arab World (UAE), Editors: Tadmouri GO, Al-Ali MT, Al-Khaja N. pp. 63-64.

Conlon JM. (2004). Neurokinins. In: The Encylopedia of Endocrine Diseases, Volume 3. Editor: Martini L. Academic Press/Elsevier, pp. 330-334.

Conlon JM. (2004). Substance P. In: The Encylopedia of Endocrine Diseases, Volume 4. Editor: Martini L. Academic Press/Elsevier, pp. 339-342.

Conlon JM. (2004). The tachykinin peptide family with particular emphasis on mammalian tachykinins and tachykinin receptor agonists. In: Handbook of Experimental Pharmacology Vol. 164. Editor: Holzer P. Springer-Verlag, Heidelberg. pp. 25-62.

Tostivint H, Trabucchi M, Vallarino M, Conlon JM, Lihrmann I,Vaudry H. (2004). Molecular evolution of somatostatin genes. In: Somatostatin. Editor: Srikant CB. Kluwer/Springer Verlag, Heidelberg. pp. 47- 64.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Conlon JM. (2004). The roles of neuroendocrine peptides in cardiovascular and metabolic regulation in reptiles. Comparative Biochemistry and Physiology (Part A) 137; S47, 2004.

Galli G, Skovgaard N, Abe AS, Taylor EW, Conlon JM, Wang T. (2004). The cardiovascular actions of native bradykinin South American rattlesnake *Crotalus durissus.* Comparative Biochemistry and Physiology (Part A) 137; S66.

Skovgaard N, Galli G, Taylor EW, Conlon JM, Wang T. (2004). Hemodynamic effects of python neuropeptide γ in the anaesthetized python, *Python regius*. Comparative Biochemistry and Physiology (Part A) 137; S70.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Al-Marzouqi, Panteva M, Workman JL. (2004). Binding of SW1/SNF to DNA and nucleosomes. Proceedings of the Fifth Annual U.A.E. University Research Conference, Al-Ain, U.A.E.

Bromée T, Kukkonen JP, Andersson P, Conlon JM, Larhammar D. (2004). Pharmacological characterization of the ligand-receptor interactions of the zebrafish bradykinin receptor. Proceedings of the 22nd Conference of European Comparative Endocrinologists. Uppsala, Sweden.

Conlon, J.M. Sonnevend, A. and Pal, T. (2004). Design of potent, non-toxic antimicrobial agents based upon the structure of the frog skin peptide, pseudin-2. Proceedings of the Fifth Annual U.A.E. University Research Conference, Al-Ain, U.A.E.

Fernandez-Cabezudo MJ, al-Ramadi BK, Hasan MY, Fahim MA. (2004). Preliminary results of the effect of lead on the immune system. Proceedings of the Fifth Annual U.A.E. University Research Conference, Al-Ain, U.A.E.

Galadari S, Mao C, Hannun YA. (2004). Identification of Catalytically Important Residues in Neutral Ceramidases. Proceedings of the Fifth UAE University Research Conference, Al Ain, U.A.E.

Galadari S, Mao C, Hannun YA. (2004). A catalytically important serine residue in neutral ceramidases. Proceedings of the European Life Sciences Organization Conference and the Eighth World Congress of Cell Biology, Nice, France

Iwata T, Ishizuka Y, Nakada T, Toyoda F, Yamamoto K, Conlon JM, Kikuyama S. (2004). Occurrence of an active form of sodefrin variant in the red-bellied newt. Proceedings of the 22nd Conference of European Comparative Endocrinologists. Uppsala, Sweden.

Kikuyama S, Nakada T, Toyoda F, Iwata T, Yamamoto K, Conlon JM. (2004). Amphibian pheromones and endocrine control of their secretion. Proceedings of the 22nd Conference of European Comparative Endocrinologists. Uppsala, Sweden.

Okada R, Ito Y, Kaneko M, Yamamoto K, Chartrel N, Conlon JM, Vaudry H, Kikuyama S. (2004). Frog corticotropin-releasing factor (CRF): isolation, molecular cloning and biological activity. Proceedings of the 22nd Conference of European Comparative Endocrinologists. Uppsala, Sweden.

Raza H, John A, Kumar LA (2004). Tissue specific oxidative stress and glutathione metabolism in streptozotocin-induced diabetic rats. Proceedings of the 43rd Annual Meeting of Society of Toxicology, Baltimore, USA.

Fernandez-Cabezudo, M.J., C. Vijayasarathy, H. El-Hassana, D.L. Pflugh, A.L.M. Bothwell and B.K. al-Ramadi. (2004). Evidence for a Dual Pathway of Activation in CD43-Stimulated T cells: Differential Requirement for the Lck Tyrosine Kinase. 12th International Congress of Immunology and 4th Annual Conference of FOCIS, Montreal, Canada.

RESEARCH GRANTS - 2004

FMHS Grants

Al-Marzouqi AH. Functional analysis of the chromatin-remodelling complex SWI/SNF

Conlon JM. Structural and biological characterization of antimicrobial peptides from the tailed frog, *Ascaphus truei*

Fernandez-Cabezudo MJ. Role of the cellular oncogene, Src-family protein tyrosine kinase Lck, in programmed cell death.

Galadari S. Expression of human neutral ceramidase in yeast cells

Raza H. Molecular characterization of drug metabolism enzymes, flavin-containing monooxygenases, glutathione S-transferases and cytochrome P450s in camel tissues.

UAE University Grants

Al-Marzouqui AH. Interactions between domains in transcriptional activators and histone tails.

Conlon JM. Development of novel peptide-based antimicrobial agents for use in the treatment of diabetic foot ulcers

El-Agnaf OMA. Investigation of the neurotoxicity of alpha-synuclein.

Terry Fox Fund for Cancer Research Grant

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

Galadari S. What is the role of human neutral ceramidase in cancer ?

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

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

El-Agnaf OMA. (Co-PI with Schlossmacher MG, Harvard Medical School) Quantification of plasma alpha-synuclein a biomarker for Parkinson's disease.

Department of Community Medicine

Dr G Nicol[1]	Chairman, Associate Professor	**Dr M El Sadig**	Administrator/Research Fellow
Prof R Reed[2]	Acting Chair	**Dr HO Ahmed**[4]	Occupational Hygienist
Prof N Nagelkerke[3]	Professor	**Mr SV Shinelal**	Technician (Nurse)
Dr F Al-Maskari	Assistant Professor, Divisional Head	**Mr H El Agab**	Technician (Statistician)
Dr J Al-Mutawa	Assistant Professor	**Ms A Kaljee**	Medical Secretary
Dr P Barss	Associate Professor	**Mr M Jamal**	Office Assistant
Dr M Grivna	Assistant Professor		

1 Dr G Nicol, Chair of Community Medicine departed on 30 June 2004
2 Prof R Reed (Chair of Family Medicine) was appointed Acting Chair of Community Medicine on 10 October 2004.
3 Prof N Nagelkerke joined Community Medicine on 1 December 2004.
4 Dr H Omer Ahmed departed on 28 February 2004.

Tel: 7672000 / Fax: 7672022 / http://www.fmhs.uaeu.ac.ae/cmd/

Community Medicine Staff and Visiting Professors with the Group A Senior Clerkship Students Team after their Project Presentations in Yannah Theatre on Tuesday, 15 September 2004.
From left to right standing: Omer Al-Marzouqi, Hussein El Agab (Technician), Shine (Technician), Hamdan Al-Baloushi, Naser Al-Ameri, Prof. Iman Nuwayid (Visiting Professor), Dr. Fatma Al-Maskari (Divisional Head), Prof. Nelson Norman (Visiting Professor), Dr. Chris Frampton (Visiting Professor), Dr. Michal Grivna (Faculty), Dr. Moh'd El-Sadig (Academic and Research Administrator), Dr. Jamal Al Mutawa (Faculty), Dr. Peter Barss (Faculty) and Ali Al-Mehrezi. *From left to right kneeling*: Ammar Al-Banna, Moh'd Rasoui, Abdulla Al-Badawy, Ahmed Al-Bannai, Amer Al-Kendi, and Shakboot Al-Bedwawi.

RESEARCH PROFILE

Due to the Department's continuing staff shortage, Faculty with the support of the Dean, invested considerable time and effort to bring out visiting teaching staff. This effort turned out to be more than worth it, as the visitors succeeded in making a variety of contributions to the research efforts of the Senior Clerkship students as well as to Faculty in the Department and FMHS. Prof. Iman Nuwayhid, an Environmental Health Physician of the Faculty of Health Sciences of the American University of Beirut, and Prof. Nelson Norman, an Occupational Health Specialist from Aberdeen, Scotland, provided specialist supervision of occupational health research projects resulting in some excellent research titles and projects by the senior clerkship students. Together with the ongoing teaching effort of Dr. Jamal Al Mutawa, Assistant Professor in Environmental Medicine and Dr. Mark Newson-Smith, the Department's Adjunct Assistant Professor and Occupational Health Specialist at ADMA-ADCO in Abu Dhabi, the Department was able to maintain its high standards in both teaching and research in the areas of environmental and occupational health.

Dr. Chris Frampton, Senior Biostatistician from Christchurch School of Medicine and Health Sciences at the University of Otago in New Zealand made a substantial contribution to the Community Medicine Senior Clerkship research projects as well, providing supervision to a number of the Senior Clerkship Projects. Faculty of other Departments at FMHS benefitted from his generous assistance with statistical consulting to their research projects. Prof. Nico Nagelkerke, who joined the Department on 1 December 2004 as Senior Biostatician from Leiden University in the Netherlands, has as his main research areas infectious disease modeling, WHO consultancy in "gender and tuberculosis", and World Bank consultancy on "modeling the effects of DOTS (+) on TB control. His is a most welcome appointment after a number of years without a permanent biostatistician, and after the departure of Dr. Frampton is continuing to provide much needed statistical consulting to other Faculty at FMHS.

Drs. Peter Barss and **Michal Grivna** have as their main research interests epidemiological studies in injury prevention and injury research. Dr. Barss studies epidemiology and prevention of unintentional injuries such as drowning and traffic injury. This includes research to clarify incidence and risk factors for vulnerable populations in the United Arab Emirates, with a link to issues pertinent to public policy. Dr. Barss collaborates internationally with the Canadian Red Cross as well as other organizations for national water safety and drowning prevention. He was selected in 2004 to collaborate with WHO Geneva and WHO Eastern Mediterranean Region in Cairo to test and evaluate in the Middle East a new global curriculum on injury research and policy. Dr. Grivna's research interests include injury epidemiology, child injury prevention, and safe community promotion.

Dr. Fatma Al Maskari specializes in non-communicable diseases, chronic diseases epidemiology, evidence-based medicine (EBM), and lifestyle and health. After completing a major research study in epidemiology of asthma among primary school children in the UAE, Dr. Fatma Al-Maskari is currently involved in a research project to determine the prevalence of complications among diabetics in Al-Ain Medical District. This is the first study in UAE to assess the burden of complications of diabetes mellitus (DM). When completed it can be used as a baseline study for future studies to control the problem and to assess the direct and indirect economic impact of DM to the population in general and to the health care resources of the country in particular.

COLLABORATION WITH OTHER AGENCIES

The Department continues to provide advice on clinical research issues and work closely with the MoH, particularly the Preventive Medicine Department, on strategies and tactics for assessing epidemics of infection, non-communicable disease problems and occupational health. It also maintains interaction with other agencies such as the Ambulance Services, Municipality and the Al Ain Traffic Police Department.

Road Crash with Date Palm Tree.

Dr. Moh'd El Sadig, the Department's specialist in road traffic accidents, played a key coordinating role in bringing the UAEU Research Center and the Accidents Research Center of Monash University in Melbourne, Australia together for collaboration in research. This culminated in a research award to the University's Research Centre leading to the establishment of the University's Traffic Safety Research Center at Jimmy Hospital on 14 October 2004. The research project focuses on roadway crashes involving General Motors models in Al-Ain, UAE. The purpose of the study is to provide a scientific database on actual collisions and injury outcomes in the UAE, in an effort that will eventually help to understand the true causal factors of road traffic accidents. Dr. El Sadig is one of three coordinators that have been appointed by the University Research Department to plan, implement and supervise the research.

SENIOR CLERKSHIP RESEARCH PROJECTS

Considerable effort is invested by Faculty of the Department in the supervision of research projects of four senior clerkship groups every year. This year was particularly successful due to the specialist contributions of the visiting teaching staff. Following is a list of the research projects, students and supervisors for 2004:

Al-Ayyan MO, Samhan OM, Al-Tunjiji SH, Al-Shamsi SR. (2004). Knowledge, attitude and practice of lifestyle factors, dietary habits, physical activity and smoking among FMHS students. Supervisors: Barss P (Principal), Al Maskari F, Grivna M.

Al-Hassani NA, Al-Ghafri FH, Al-Ghafri LS. (2004). Patient's lifestyle pre- and post- myocardial infarction in Al Ain City. Supervisors: Al Maskari F (Principal), Norman N, Grivna N.

Al-Jaber MA, Al-Kuwait MMSMS, Al-Marzooqi ASM, Sleem AMAM, Al-Muhairi AAK. (2004). Early Detection of breast cancer – knowledge, attitude and practice of Arab Women in the United Arab Emirates. Supervisors: Barss, P (Principal), Grivna, G.

Al-Kaabi FM, Al-Muhairy AI, Al-Zaabi. (2004). First-aid knowledge among kindergarten teachers in Al Ain District. Supervisors: Norman N (Principal), Al Maskari F, Grivna M, Barss P.

Al-Kendi A, Al-Ameri N, Al-Badawy A. (2004). Assessment of noise exposure and its health effects among smith workers in Al Ain industrial area (Al Saniya). Supervisors: Nuwayhid I (Principal), Barss P, Frampton C.

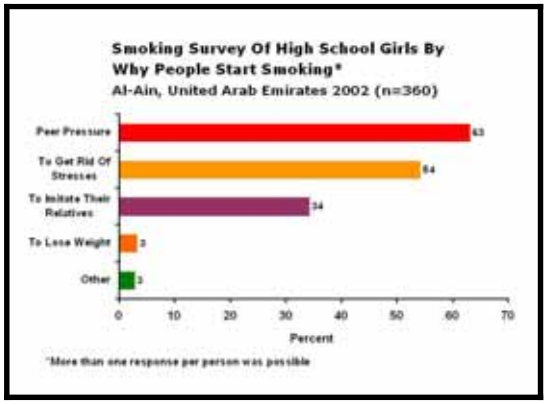
Al-Khajah Z, Mohammed HH, Al-Ali LA. (2004). Knowledge, attitude and practice of pregnant women in Al Ain regarding folic acid intake. Supervisors: Norman N (Principal), Al Maskari F, Barss P, Al Mutawa J.

Al-Kuwaiti F, Al-Dhaheri L, Al-Dhaheri M. (2004). Dietary pattern among primary school children (9-13 years) in Al Ain, UAE. Supervisors: Norman N (Principal), Al Maskari F.

Al-Marzouqi O, Al-Blooshi H, Al Bannai A, Al-Awadhi M. (2004). Knowledge, attitude and practice of construction workers toward prevention of heat-related illnesses in Al Ain district. Supervisors: Nuwahid I (Principal), Barss P, Frampton C.

Al-Meherzi AS, Al-Badwaw S, Al-Banna A. (2004). Prevalence of conduct disorder among juvenile delinquency centers in the UAE. Supervisors: Al Maskari F (Principal), Al Mutawa J, Frampton C.

Al-Suwaidi H, Al-Suwaidi M, Al-Muhairi A. (2004). Knowledge, attitude and practice of medical students at the UAE University regarding road safety measures. Supervisors: Barss P (Principal), Grivna M.



ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Abeku TA, De Vlas SJ, Borsboom GJ, Tadege A, Gebreyesus Y, Gebreyohannes H, Alamirew D, Seifu A, Nagelkerke NJ, Habbema JD. (2004). Effects of meteorological factors on epidemic malaria in Ethiopia: a statistical modelling approach based on theoretical reasoning. Parasitology 128;585-93.

Alley E.S, Basanez MG, Bissan Y, Boatin BA, Remme JH, Nagelkerke NJ, de Vlas SJ, Borsboom GJ, Habbema JD. (2004). The uptake of Onchocerca volvulus (nematoda: onchocercidae) by simulium (Diptera: simuliidae) is not strongly dependent on the density of skin microfilariae in the human host. Journal of Medical Entomology Jan;41(1);83-94.

Araya T., Reniers G, Schaap A, Kebede D, Kumie A, Nagelkerke N, Coutinho R, Sanders E. (2004). Lay diagnosis of causes of death for monitoring AIDS mortality in Addis Ababa, Ethiopia. Journal of Tropical Medicine and International Health Jan;9(1);178-86.

Čapková M, Velemínský M, Benešová V, Grivna M. (2004). Water-related accidents –drowning and near-

drowning in the Czech Republic in 2001-2002. Praktický lékař 84(3); 121-126a.

Dankers MK, Roelen DL, Nagelkerke NJ, de Lange P, Persijn GG, Doxiadis II, Claas FH. (2004). The HLA-DR phenotype of the responder is predictive of humoral response against HLA class I antigens. Journal of Human Immunology 65;13-9.

El-Sadig M, Alam MS, Carter AO, Fares K, Al-Taneuiji H, Romilly P, Norman JN, Lloyd O. (2004). The Effectiveness of the Seatbelt Legislation in the UAE. Accidents Analysis and Prevention 36:399-404.

Franssen EA, , Van Wiechen CM, Nagelkerke NJ, Lebret E. (2004). Aircraft noise around a large international airport and its impact on general health and medication use. Journal of Occupational and Environmental Medicine, May; 61(5);405-13.

Hoebe C, de Melker H, Spanjaard L, Dankert J, Nagelkerke N. (2004). Space-time cluster analysis of invasive meningococcal disease. Journal of Emerging Infectious Diseases Sept.10;1621-6.

Hoebee B, , Bont L, Rietveld E, Van Oosten M, Hodemaekers HM, Nagelkerke NJ, Neijens HJ, Kimpen JL, Kimman TG. (2004). Influence of promoter variants of interleukin-10, interleukin-9, and tumor necrosis factor-alpha genes on respiratory syncytial virus bronchiolitis. . Journal of Infectious Diseases, 189(2);239-47.

Kaul R, Kimani J, Nagelkerke NJ, Fonck K, Ngugi EN, Keli F, MacDonald KS, Maclean IW, Bwayo JJ, Temmerman M, Ronald AR, Moses S; Kibera HIV Study Group. (2004). Monthly antibiotic chemoprophylaxis in Kenyan sex workers to reduce the incidence of sexually transmitted infections and HIV-1: a randomized, placebo-controlled trial. Journal of the American Medical Association, 291;2555-62.

Koppen S, De Groot R, Neijens HJ, Nagelkerke N, Van Eden W, Rumke HC. (2004). No epidemiological evidence for infant vaccinations to cause allergic disease. Vaccine, Sep;3;22(25-26);3375-85.

Luijten M. Thomsen AR, van den Berg JA, Wester PW, Verhoef A, Nagelkerke NJ, Adlercreutz H, van Kranen HJ, Piersma AH, Sorensen IK, Rao GN, van Kreijl CF. (2004). Effects of soy-derived isoflavones and a high-fat diet on spontaneous mammary tumor development in Tg.NK (MMTV/c-neu) mice. Journal of Nutrition and Cancer, 50(1);46-54.

M. Bouwknegt, A. W. van de Giessen, W. D. C. Dam-Deisz, A. H. Havelaar, N. J. D. Nagelkerke and A. M. Henken. (2004). Risk factors for the presence of Campylobacter spp. in Dutch broiler flocks. Journal of Preventive Veterinary Medicine, Jan 30;62(1);35-49.

Nagelkerke NJ, Jha P, de Vlas SJ, Korenromp EL, Moses S, Blanchard JF, et al. (2004). Health and Economic benefits of an accelerated program of research to control global infectious diseases. Global IDEA Scientific advisory committee. Canadian Medical Association Journal, 171;1203-8.

Nagelkerke NJD, De Vlas SJ, MacDonald K, Rieder HL. (2004). Tuberculosis and sexually transmitted infections, Journal of Emerging Infectious Diseases, 10; 2055-6.

Nagelkerke NJD, Hoebee B, Teunis P, Kimman TG. (2004). Combining the transmission disequilibrium test and case-control methodology using generalized logistic regression.. European Journal of Human Genetics, 12; 964-970.

BOOKS, CHAPTERS, REVIEWS, EDITORIALS

Barss P. (2004). Epidemic of injury in the United Arab Emirates: Injury prevention, safety promotion, and patient safety – is there a link? [Invited editorial] Emirates Medical Journal, 22;1-5.

Barss P. (2004). Invited book review: A comparison of Epidemiology by Leon Gordis and Epidemiology, An Introduction by Kenneth Rothman. Emirates Medical Journal, 22:277-278.

Norman JN, El-Sadig M, Al-Masaabi SH. (2004). Emergency First Aid for Remote and Hazardous Settings. (A text book in English language). Trafford Publishing, Victoria, Canada. ISBN 1-4120-2620-2.

Svanström L, Boleslav J, Grivna M. (Eds). (2004). Sustainability within Safe Communities. Center of Injury Prevention, Prague; pp235 (ISBN 80-239-2963-1).

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Al-Dhaheri HS, Al-Shehhi FA, Rafea SJ, Grivna M, Barss P. (2004). Knowledge and attitude of high school girls toward child car safety seats in the United Arab Emirates. Emirates Medical Journal, 22(2):183. ISSN–0250-6882.

Al-Hammadi F, Saif F, Al-Mazrooei W, Al-Amil E, Al-Maskari F, Grivna M, Barss P. (2004). Influence of husbands on breastfeeding and other infant feeding practices in Al Ain city, United Arab Emirates. Emirates Medical Journal, 22(2):184-5.

Al-Obthani M, Al-Hammadi A, Al-Shamsi H, Al-Sadig M, Grivna M, Barss P. Problems with safety belts and child restraints in UAE. [Abstract] In Svanstrom L, Boleslav J, Grivna M (Eds). (2004). Sustainbility within Safe Communities. Center of Injury Prevention, Prague, p.235.

Al-Shamsi H, Al-Obthani M, Al-Hammadi A, Sadig M, Grivna M, Barss P. (2004). Problems with use of safety belts and child restraints in UAE. Emirates Medical Journal, 22(2):183-4.

Barss P, Abu Zinjal A, Al Mansouri D, Al Mazrooei R. (2004). Knowledge of first aid and triage among police

in Al Ain City, United Arab Emirates [Abstract] 7th World Conference on Injury Prevention and Safety Promotion, Vienna. Abstract Book. Vienna, Austria, Institut Sicher Lieben/Kuratorium fur Schutz und Sicherheit, 2004, p. 49.

Barss P, Grivna M. (2004). Injury epidemiology, prevention, and treatment: An integrated curriculum [Abstract for verbal presentation] World Safe Communities Conference, Prague. In: Svanstrom L, Boleslav J, Grivna M (Eds). Sustainbility within Safe Communities. Center for Injury Prevention, Prague, 2004, p. 102. Also in 4th GCC Medical Education Conference, Programme and Abstracts. Faculty of Medicine & Health Sciences, UAE University, Al Ain, United Arab Emirates, 39-40.

Barss P. (2004). Data sources for injury surveillance and prevention: Coroner, journalist or both? [Abstract for keynote address] Svanstrom L, Boleslav J, Grivna M (Eds). Sustainability within Safe Communities. Center for Injury Prevention, Prague, 10-12.

Barss P. Incidence and risk factors for snowmobile fatalities from drowning and immersion hypothermia in Canada 1991-2000 [Abstract for poster] 7th World Conference on Injury Prevention and Safety Promotion, Vienna. Abstract Book. Vienna, Austria, Institut Sicher Lieben/Kuratorium fur Schutz und Sicherheit, p.48.

Barss P. Injury epidemiology, prevention, and treatment: An integrated curriculum [Abstract] 7th World Conference on Injury Prevention and Safety Promotion, Vienna. Abstract Book. Vienna, Austria, Institut Sicher Lieben/Kuratorium fur Schutz und Sicherheit, 48-49.

Čelko AM, Brož L, Dáňová J, Grivna M. (2004). Epidemiology of the childhood burns injuries in Czech Republic 1993-2000. Book of Abstracts 7th World Conference on Injury Prevention and Safety Promotion, 6 to 9 June 2004, Vienna Austria:104.

Grivna M, Barss P, Carter A, Kershaw G, Neumann K, Al-Maskari F. (2004). Lifestyle project as a basis for integrated self-directed learning. University of Edinburgh, Scotland, Association for Medical Education in Europe Conference Abstract Book, September 2004, p.4.94.

Krejčí F, Benešová V, Grivna M, Hodyc D, Pelíšek M. (2004). Child injury care in traumacenter Motol. Book of Abstracts 7th World Conference on Injury Prevention and Safety Promotion, 6 to 9 June 2004, Vienna Austria:389.

Nagelkerke NJD, deVlas SJ. (2004). Interactions between infections. Oberwolfach Reports 49; 403-405.

Nencka P, Benešová V, Grivna M. (2004). Hospitalization costs of children´s playground injuries in Czech Republic. Book of Abstracts 7th World Conference on Injury Prevention and Safety Promotion, 6 to 9 June 2004, Vienna Austria:550.

Nencka P, Grivna M, Benešová V. (2004). Playground injuries on Czech Republic. In: Svanström L, Boleslav J, Grivna M. (Eds) Sustainability within Safe Communities. Praha: Centrum urazove prevence, 77-78.

Newson-Smith M, Omer H, Al-Maskari F, Frampton C. (2004). Respiratory Sequele of Cement Manufacturing in a Rapidly Developing Country; The Tale of Two Factories. Journal of Occupational and Environmental Medicine 46(9):1000, September 2004.

Newson-Smith MS, Nicol AG. (2004). Teaching of occupational medicine to undergraduates. Occupational Medicine (London) Mar; 54(2);134-5.

Newson-Smith MS. (2004). Dust and asthma: diagnosis clarification. International Journal of Occupational Environmental Health Oct-Dec; 10(4); 470-471.

Newson-Smith MS. (2004). Employment of NHS staff following retirement on the grounds of ill-health. http://oem.bmjjournals.com/cgi/eletters/61/7/572, OEM Sep 2004.

Subait M, Al Ali MH, Grivna M, Barss P. (2004). Drowning in the United Arab Emirates: A Comparison of Official and Newspaper Reporting of Incidence and Risk Factors. [Abstract for poster]. World Safe Communities Conference, Prague In: Svanstrom L, Boleslav J, Grivna M (Eds). Sustainbility within Safe Communities. Praha: Center of Injury Prevention, Prague, 230-231.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Al-Maskari F, El-Sadig M. (2004). Prevalence of complications among diabetic patients in Al-Ain medical district. The 5th Annual University Research Conference, Al-Ain-FMHS.

Barss P. (2004). Invited Plenary Keynote Speaker for 13th International Conference on Safe Communities, Prague Czech Republic, June 2004.

Barss P. (2004). Invited speaker for Surgical Grand Rounds, McGill University, Sept 2004: Injury Epidemiology, Prevention, and Treatment, an Integrated Curriculum; also given as an invited presentation for Trauma Group, UAE University, 2004.

Barss P. (2004). Member: International Program and Scientific Committee, 13th International Conference on Safe Communities, Prague Czech Republic.

Barss P. (2004). Member: International Scientific Planning Committee, 7th World Conference on Injury Prevention and Control, Vienna Austria.

El-Sadig M. (2004). First Aid and Casualty Handling for Sports Injuries. 7th UAE Conference and I.O.C.M.C Course in Sports Medicine. International Olympic Medical Committee, Dubai, 3-5 April 2004.

El-Sadig M. (2004). Road Traffic Accidents in the UAE: The Debate Continues. 2nd International Medical Services Congress. IIR, Dubai, 10-12 October 2004.

Nagelkerke N.J.D. et al. (2004). The projected impact of alternative policies towards ART on HIV transmission and mortality in India: a mathematical epidemiological model. A background paper for : HIV/AIDS treatment and prevention in India. World Bank. Washington, DC.

Newson-Smith M. (2004). Health surveillance in the offshore oil and gas industry. SPE/OGP Middle East Health and Safety Symposium, Doha, Qatar.

Newson-Smith M, Al-Maskari F. (2004). Respiratory morbidity amongst Cement Factory workers in the United Arab Emirates. 3rd GCC International Conference on Occupational and Environmental Health, Dubai, United Arab Emirates.

Norman JN. (2004). Immediate care for medical emergencies in Sport. 7thUAE Conference and I.O.C.M.C Course in Sports Medicine. International Olympic Medical Committee, Dubai, 3-5 April 2004.

Norman JN. (2004). The effect of environment on peak performance in Sport. 7th UAE Conference and I.O.C. M.C Course in Sports Medicine. International Olympic Medical Committee, Dubai, 3-5 April 2004.

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Drs J Al-Mutawa (PI), M Newson-Smith (CI), H Omer (CI), M El Sadiq (CI)
The prevalence of respiratory symptoms and lung function impairment amongst sewage workers. (NP0417).

UAE University Grants – 2004

Drs F Al-Maskari (PI), El-Sadiq M (CI)
Economic costs of diabetes complications in UAE. (01-14-8-11/04).

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

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.

Others

Dr M Grivna (CI). (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)

Dr M Grivna (PI) (2001-2004).
Epidemiology and prevention of childhood injuries.
Research Grant - Ministry of Health, Czech Republic (VZ 111300003-18.2).

Dr M Grivna (CI). (2002-2004).
The evaluation of development, current status and conditions toward healthy physical, mental and social development of new generation until 2010.
Research Grant Agency - Ministry of Health, Czech Republic (IGA MZ č. NO/7346-3)

Dr M Grivna (CI). (2002-2004).
The health and social problems with drowning and water-related injuries.
Research Grant Agency - Ministry of Health, Czech Republic (IGA MZ č. NE/7302-3).

PICTURES OF ACTIVITIES AND EVENTS

Dr. Fatma Al-Maskari (center back) with students during the final day of the Third Scientific Conference for GCC Medical Students that was held in Kuwait .

From left to right standing are: Fatma Ismail, Khulood Younis, Dr. Fatma Al Maskari, Haifa Al-Auoadhi, Hassa Al-Zaabi. From left to right kneeling are: Mona Al-Hammadi and Budoor Al-Shehi.

Department of Family Medicine

Prof R Reed	Chairman, Professor	**Mr W Al Mohtaseb**	Research Assistant
Dr G Griffin	Associate Professor	**Ms Hala Mustafa**	Research Assistant
Dr C Leduc	Associate Professor	**Mr M Balshe**	Administrative Assistant
Dr P Flood	Assistant Professor	**Mr J Cherian**	Assistant Technician
Dr S Margolis	Assistant Professor	**Ms P Conaghan**	Medical Secretary
Dr C Miller	Assistant Professor	**Ms N Al Ketbi**	Secretary
Dr T Revel	Consultant in Family Medicine, PHC		

Tel: 7672000 / Fax: 7672022 / http://www.fmhs.uaeu.ac.ae/Departments/Family Medicine

Front row: M Balshe, S Margolis, G Griffin, R Reed, C Leduc, P Flood, J Cherian
Back row: P Conaghan, W Al Mohtaseb, H Mustafa

RESEARCH PROFILE

The Department of Family Medicine faculty continue to focus their research on:

Characterising conditions of high prevalence seen in primary health care centres and the community. The frequency, presentation, diagnosis and management of diabetes, asthma, and conditions associated with aging are areas of emphasis for our research.

Developing methods for improving the delivery of primary health care services focusing on improving management of chronic diseases.

Research on improvement of the process and outcomes of medical education for Family Medicine with special emphasis on issues related to increasing the effectiveness of educational methods and measurement of educational outcomes.

This year has been very productive with numerous papers despite significant changes in staffing levels during the middle of the year. In addition, departmental members have been actively involved in presenting data at scientific meetings in the UAE and worldwide.

Our department members have also been active in several interdisciplinary research groups serving as a core member of the Diabetes and Cardiovascular Disease Research and actively participating in the Medical Education Group.

A new project which was funded for the FMHS interdisciplinary grants program is the Diabetes Complications Study (DCS) which will study in depth the nature of diabetic vascular complications including their inter-relationship in a population of UAE Nationals.

Two major research projects, which are ongoing this year include a research project on improving diabetes care in primary health care funded by the Sheikh Hamdan Award and a project on quality improvement for Asthma also funded by the Sheikh Hamdan Awards Committee.

Other ongoing projects, which characterise high prevalence conditions in primary care include a study on the validity of an asthma questionnaire and another on the use of laboratory testing in primary health care. One of our department members continues active involvement in the Cochrane Collaborative.

Our department looks forward to 2005, which we anticipate will continue to be a productive year for research for our department.

Richard Reed MD, MPH
Professor and Chairman
Department of Family Medicine

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Andrews D, Popiel A, Margolis S, Reed R. (2002). Improving diabetic patients in General Practice in the United Arab Emirates. Eastern Mediterranean Health Journal: A WHO Journal. 8 (4-5) 566-573. (published in 2004).

Carter AO, Saadi HF, Reed RL, Dunn EV. (2004). Obesity, lifestyle, and reproductive health in a representative sample of women citizens of Al Ain, United Arab Emirates. Journal of Health, Population and Nutrition, 22:75-83.

Margolis S, Reed RL. (2004). Effect of religious practices of Ramadan on sleep and perceived sleepiness of medical students. Teaching & Learning in Medicine, 16 (2) 145-149.

Miller CJ, Dunn EV, Abdouni SF, Shaheen HM, Ullah MS. (2004). Factors associated with iron depletion and iron deficiency anemia among Arabic preschool children of the United Arab Emirates. Saudi Medical Journal, 25 (7): 843-847.

Saadi HF, Reed RL, Carter AO, Dunn EV, Qazaq HS, Al-Suhaili AR. (2004). Correlation of quantitative ultrasound parameters of the calcaneus and bone density of the spine and hip in women with prevalent Hypovitaminosis D. Journal of Clinical Densitomitry, 7(3): 313-318.

Ypinazer VA, Margolis SA. (2004). Western medical ethics taught to junior medical students can cross cultural and linguistic bondaries. BMC Medical Ethics, 5:4-11.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEBSITES

Margolis, SA, Shahin A, Reed RL, Lukic ML. (2004). Increased circulating interleukin-18 levels in aging and dementia. Immunology 2004. 12th International Congress of Immunology and 4th Annual Conference of FOCIS: 135-138.

Reed RL. (2004). Unexpected Outcomes in Diabetes Improvement Clinical Trial: Results of a Focus Group Study. Society of Teachers of Family Medicine, 37th Annual Conference, Toronto, Ontario, Canada. May 13 2004.

Suhaili A., Mohammadiyeh M., Reed R., Agarwal M., Benedict S. (2004). Vitamin D status in Arabian women: Predictors and effects of hypovitaminosis D on bone turnover. 12th International Congress of Endocrinology, Lisbon, Portugal, Aug 31-Sep 4, 2004.

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Dr C Leduc
The UAE Diabetic Complications Study: Determinants of Microvascular Disease and Macrovascular disease.

Prof RL Reed
The UAE Diabetic Complications Study (UAE-DCS): Relationship of proinflammatory cytokines to retinopathy, nephropathy and peripheral vascular disease.

Department of Internal Medicine

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

Tel: 7672000 / Fax: 7672995 / http://www.fmhs.uaeu.ac.ae/Departments/Internal Medicine

Standing from left: Dr. S Benedict, Mr. H Hassan, Dr. J Al Kaabi, Dr. E E Kazzam, Dr. M Al Houqani, Mr. A M Abdulle, Dr. W Conca, Ms S Ogilvie, Ms R John, Mr. J Yasin, Mr. Pocker, Mr. Billa
Setting from left: Dr. S Denic, Dr. I Galadari, Prof. M Ellis, Prof .E N Obineche, Prof. M G Nicholls, Dr. Ulla Hedstrom, Dr. J Joseph, Dr. H Saadi

Scientific research in Department of Internal Medicine, 2004

RESEARCH PROFILE

This Department has remained active in the three significant fields of Teaching, Research and Clinical Duties through 2004.

Dr Walter Conca, Rheumatologist, joined the Department in May 2004. Dr Leo Streletz, Neurologist, will join us in August 2005, as will our Teaching Assistant Dr Abdulla Shehab (Cardiologist and Clinical Pharmacologist) in September 2005.

In relation to Teaching Assistants, we had nine in 2004, eight carrying out their Internship Programmes in USA and Canada, and one finishing his Postgraduate Programme in the United Kingdom. They are as follows:

Dr A Shehab
Teaching Assistant (UK) - joining the Department September 2005

Dr S Al Suwaidi
Teaching Assistant (Canada)

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 J Al Kaabi
Teaching Assistant (Canada) - possibly returning to the Department early 2006

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. We expect a research nurse to join us early in 2005.

Ms Sheena Ogilvie and Ms Reena John continue to provide secretarial services and Mr Hisham Hassan vital general services for the Department. Ms Shaikha Al Marar joined the Department in March 2004 to assist with our expanding research studies.

The Departmental laboratory is located on the 3rd floor and research interests and publications covered in 2004 were:

genetics	*vasoactive peptides*
dermatology	*diabetes*
cytokines	*hypertension*
cancer	*osteoporosis*
infections, including fungi	*cardiovascular disease*
lipids	*chronic renal failure*
pleural disorders	*rheumatic disease*

The Department published approximately 30 papers and members presented a good number of papers at international meetings in 2004. Funding was forthcoming from 13 grants.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Al-Ramadi BK, Ellis M, Pasqualini F, Mantovani A. (2004). Selective induction of pentraxin 3, a soluble innate immune pattern recognition receptor, in infectious episodes in patients with haematological malignancy, Clinical Immunology, 112; 221-4.

Bukachi F, Waldenström A, Mörner S, Lindqvist P, Henein MY, Kazzam E. (2004). Pulmonary venous flow

reversal and its relationship to atrial mechanical function in normal subjects – Umeå General Population Heart, European Journal of Echocardiography. Available online 22 September 2004.

Carter A, Saadi H, Reed RL, Dunn EV. (2004). Obesity, lifestyle and reproductive health in a representative sample of women citizens of Al Ain, United Arab Emirates, J Health Popul Nutr, 22(1); 75-83.

Ciulla MM, Paliotti R, Esposito A, Diez J, Dahlof B, Nicholls MG, Smith RD, Gilles L, Magrini F, Zanchetti A. (2004). Different effects of antihypertensive therapies based on losartan or atenolol on ultrasound and biochemical markers of myocardial fibrosis: results of a randomized trial, Circulation, 110; 552-7.

Davis MD, Pemberton CJ, Yandle TG, Lainchbury JG, Rademaker MT, Nicholls MG, Frampton CM, Richards AM. (2004). Urocortin-1 infusion in normal humans, Journal of Clinical Endocrinology and Metabolism, 89; 1402-9.

Denic S, Khatib F, Awad M, Milenkovic J. (2004). Cancer excess from consanguinity in United Arab Emirates: Analysis of effect of consanguinity rate and relative risk, Emirates Med J, 22; 71-4.

Denic S, Khatib F, Saadi H. (2004). Quality of age data in patients from developing countries, J Public Health (Oxf), 26(2); 168-71.

Ellis ME. (2004). Prevention of bacterial translocation, Br J Haematol, 125; 282-93.

Galadari I, Galadari H. (2004). Nonspecific urethritis and reactive arthritis, Clin Dermatol, 22(6); 469-75.

Galadari I, Galadari H. (2004). Case study: erythrokeratodermia variabilis, Skin Med J, 3(4); 231-2.

Galadari I, Al-Kuwaiti R. (2004). Lipoid proteinosis: a case report, Int J Dermatol, 43(5); 368-70.

Galadari I, Al-Mazroei M, Alkaabi J. (2004). Prostatic-specific antigen and idiopathic hirsutism in females, Int J Dermatol, 43(4); 275-7.

Gill D, Seidler T, Troughton RW, Yandle TG, Frampton CM, Richards AM, Lainchbury JG, Nicholls MG. (2004). The vigorous response in plasma NT-BNP to acute myocardial infarction, Clinical Science, 106; 135-9.

Gillett MPT, Obineche EN, Khan ST, Abdulle AM. (2004). Plasma concentrations of non-esterified fatty acids in end stage renal disease in the UAE. Saudi Med J 25(11); 1611-6.

Joseph J, Benedict S, Safa W, Joseph M. (2004). Serum interleukin-5 levels are elevated in mild and moderate persistent asthma irrespective of regular inhaled glucocorticoid therapy, BMC Pulmonary Medicine, 4; 2.

Kaaja R, Leinonen A, Moore P, Yandle T, Frampton CM, Nicholls MG. (2004). Effect of change in body posture on vasoactive hormones in preeclamptic women, J Human Hypertension, 18; 789-94.

Lindqvist P, Waldenström A, Wikström G, Kazzam E. (2004). The use of isovolumic contraction velocity to determine right ventricular state of contractility and filling pressures: A pulsed Doppler tissue imaging study, European Journal of Echocardiography. Available online 29 December 2004.

Nicholls MG. (2004). Adrenomedullin: hemodynamic and hormone actions, Brazilian Journal of Medical and Biological Research, 37; 1247-53.

Obineche EN, Adeghate E, Chandranath IS, Benedict S, Al Gafri LS, Adem A. (2004). Alterations in atrial natriuretic peptide and its receptors in streptozotocin-induced diabetic rat kidneys, Molecular and Cellular Biochemistry, 261; 3-8.

Oude LAML, De Bock R, Hebrecht R, Ellis M, et al. (2004). An open multicentre comparative study of the efficacy, safety and tolerance of fluconazole and itraconazole in the treatment of cancer patients with oropharyngeal candidiasis, European Journal of Cancer, 40; 1314-19.

Prickett TCR, Kaaja RJ, Nicholls MG, Espiner EA, Richards AM, Yandle TG. (2004). NT-proCNP but not CNP is greatly elevated in the fetal circulation, Clinical Science, 106; 535-40.

Rademaker MT, Charles CJ, Espiner EA, Frampton CM, Nicholls MG, Richards AM. (2004). Combined inhibition of angiotensin II and endothelin suppresses the brain natriuretic peptide response to developing heart failure, Clinical Science, 106; 569-576.

Saadi H, Reed R, Carter A, Al- Suhaili A. (2004). Correlation of quantitative ultrasound parameters of the calcaneus with bone density of the spine and hip in women with prevalent hypovitaminosis D, Journal of Clinical Densitometry, 7(3); 313-8.

Yandle TG, Fisher S, Livesey JH, Espiner EA, Richards AM, Nicholls MG. (2004). Exponential increase in clinical use of plasma BNP assays, N Z Med J, 117; 1-4.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Ellis M. (2004). Fungal infections of the gastrointestinal system. In Encyclopaedia of Gastroenterology. Academic Press, 79-82.

Nicholls MG. (2004). LIFE and SCOPE: what guidance do they offer alongside ALLHAT and ANBP2? J Hum Hypertens, 18; 295-300.

Nicholls MG, Obineche EN, Frampton CM, Richards AM. (2004). Plasma cardiac natriuretic peptide levels in screening for cardiac disease, Am J Med, 116(8); 561-3.

Nicholls MG, Richards AM. (2004). Looking at the adrenals as a primary source. In: Handbook of Hypertension. Eds: Birkenhager WH, Robertson JIS, Zanchetti A. Lippencott, Williams and Wilkins, pp 104-22.

Nicholls MG, Robertson JIS. (2004). The renin system and hypertension. In: Handbook of Hypertension. Eds: Birkenhager WH, Robertson JIS, Zanchetti A. Lippencott, Williams and Wilkins, pp 262-97.

Obineche EN. (2004). Chapter in "Glomerular Diseases". Membrano-proliferative glomerulonephritis, Publisher: Janssen-Cilag.pp. 267-91.

Raef H, Frayha HH, El-Shaker M, Al-Humaidan A, Conca W, Sieck U, Okane J. (2004). Osteoporosis Working Group. Recommendations for the diagnosis and management of osteoporosis: a local perspective, Annals of Saudi Medicine, 24(4); 242-52.

Richards AM, Lainchbury JG, Troughton RW, Espiner EA, Nicholls MG. (2004). Clinical applications of B-type natriuretic peptides, Trends in Endocrinology and Metabolism, 15; 170-4.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Joseph J, Benedict S, Safa W, Joseph M. (2004). Effect of oral prednisolone on serum IL-5, IgE and TGF beta-1 in asthmatics. Am J Respir Crit Care Med. 169: A575.

Lindqvist P, Waldenström A, Henein M, Mörner S, Kazzam E. (2004). Age and gender influences the right heart function in healthy subjects Umeå general population heart study. European Journal of Echocardiography. 5(1): 1-185.

Lindqvist P, Wikström G, Waldensröm A, Kazzam E. (2004). Isovolumic contraction velocity and left ventricular contractility. Circulation. 110: III-784.

Lindqvist P, Wikström G, Waldensröm A, Kazzam E. (2004). Isovolumic contraction velocity is a potential measurement of left ventricular state of contractility. A simultaneous pulsed Doppler tissue imaging and cardiac catheterization study. European Journal of Echocardiography. 5(1): 1-185.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Adem A, Agarwal M, Punnose J, Kosanovic M, Obineche E. (2004). Trace elements' profile of type-2 diabetic patients in the UAE. 5th Annual UAE Research Conference, Al Ain, UAE.

Adem A, Ali-Saleh AM, Mensah-Brown EPK , Galadari S, Vijayasarathy C, El Huda MN, Obineche EN. (2004). Apoptotic pathways in diabetic nephropathy. Poster presentation at the XLI ERA-EDTA Congress, Lisbon, Portugal.

Al-Muhairi SSB, Khan ST, Abdulle AM, Obineche EN, Gillet MPT. (2004). Measurement of high density lipoprotein (HDL) phospholipids in normotensive and hypertensive subjects: ongoing research. The Second Scientific Conference for Medical Students in the GCC countries, Al Ain, UAE.

Denic S. (2004). Consanguinity and cancer genes - theory, animal and human studies, and computer simulation results. Course in consanguinity and Mediterranean community genetics. Lecture book of abstracts, pp.84-5. Alexandria, Egypt, (invited presentation).

Denic S. (2004). Computer simulation of a-thalassemia in consanguineous and non-consanguineous populations. Course in consanguinity and Mediterranean community genetics. Lecture book of abstracts, p.86. Alexandria, Egypt (invited presentation).

Denic S. (2004). Genetics benefits of consanguinity: computer simulation of the effect of inbreeding on alpha-thalassemia genotype frequencies. Genetics and Population Health. Fremantle, Western Australia.

Denic S et al. (2004). Consanguinity and breast cancer in Gulf Arabs - a case control study. HGM, Berlin, Germany.

Galadari I. (2004). Laser in Dermatology. American Academy of Dermatology meeting, Washington, DC, USA.

Galadari I. (2004). Mesotherapy & Radio Frequencies in Dermatology, Dubai Derma Meeting, Dubai, UAE.

Gillett MPT, Obineche EN, Abdulle AM, Khan ST, Bokhari A. (2004). Association between blood pressure, dyslipidemia and plasma levels of endothelin-1 in UAE nationals. 5th Annual UAE Research Conference, Al Ain, UAE.

Joseph J. (2004). Pathogenesis of asthma. 2nd Al Zahara Symposium on management of pediatric asthma, Sharjah, UAE.

Joseph J. (2004). Immunopathogenesis of asthma. CME by Al Ain Asthma and Allergy Research group, Al Ain, UAE.

Karbani G, Katibh F, Denic S. (2004). Parental consanguinity and cancer risk - a case-control study. HGM, Berlin, Germany.

Mann DL, McMurray JJ, Packer M, Swedberg K, Borer JS, Colucci WS, Djian J, Drexler H, Feldman A, Kober L, Krum H, Liu P, Nieminen M, Tavazzi L, van Veldhuisen DJ, Walderstrom A, Warren M, Westheim A, Zannad F, Fleming T. (2004). Targeted anticytokine therapy in

patients with chronic heart failure, Circulation, 109; 1594. Dr Kazzam, Principal Investigator.

Nicholls MG. (2004). B-type natriuretic peptide in nephrology and cardiology. International Society of Nephrology Update Course, Dubai.

Nicholls MG. (2004). (a) Use of BNP in monitoring therapy. (b) Translating research findings into clinical practice. 7th Annual Conference on Advances in Cardiology and Cardiovascular Therapeutics, Kuala Lumpur, Malaysia.

Nicholls MG. (2004). Adrenomedullin: hemodynamic and hormone actions. 5th International Symposium in Vasoactive Peptides, Ouro Preto, Brazil.

Nicholls MG. (2004). BNP, left ventricular hypertrophy and heart failure. Lecture - 20th Scientific Meeting of the International Society of Hypertension, Sao Paulo, Brazil.

Nicholls MG. (2004). Clinical uses of cardiac natriuretic peptides. 6th International Symposium on Hypertension and Related Diseases, Beijing, China.

Obineche EN, Abdulle A, Khan ST, Bokhari A, Mushtaque A, Javed Y. (2004). Raised plasma ET-1 levels and altered lipid profile in a homogenous Gulf Arab population with untreated essential hypertension. National Kidney Foundation (NKF): 13th Annual Spring Clinical Nephrology Meetings, Chicago, Ill, USA.

Obineche EN, Abdulle AM, Abouchacra S, Pathan JY, Benedict S, El-Rukhaimi M, Suleiman MN, Mathew CM, Gillet MP. (2004). Endothelin-1, nitric oxide, homocysteine, lipid and lipoprotein profile as cardiovascular risk factors in normotensive and hypertensive UAE nationals compared to selected expatriate groups. Sheikh Hamdan Bin Rishid Al Maktoum Grant Award Conference, Dubai, UAE.

Saadi H, Al-Suhaili A, Mohammadiyeh M, Reed R, Agarwal M, Benedict S. (2004). Vitamin D status in Arabian women: Predictors and effects of hypovitaminosis D on bone turnover. Presented at the 12th International Congress of Endocrinology, Lisbon, Portugal.

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Dr E Kazzam
Cardiac remodeling and ventricular interaction in patients with thalasssemia major: Detailed echocardiograific evaluation in relation to neurohormones and collagen markers.

Dr H Saadi
Influence of endocrine factors on bone density of Arabian women.

UAE University Grants - 2004

Dr E Kazzam
Effects of volume-depletion and volume-repletion on neurohormones in the camel.

Prof EN Obineche
Atrial natriuretic peptide and its receptors in the rat kidney: Effects of long-term diabetes mellitus.

Hamdan Award Medical Research Grant – 2004

Dr S Denic
Effect of consanguinity on the spreading and prevalence of gene mutations of common hemoglobinopathies and other red-blood cell disorders: a computer simulation study.

Dr H Saadi
Bone mineral density of the United Arab Emirates female reference population.

Terry Fox Cancer Research Grant - 2004

Professor M Ellis
A study of chemokines and cytokines in cancer patients receiving rhIL-11.

UAE University Seed Grant - 2004

Dr E Kazzam
Effects of volume-depletion and volume-repletion on neurohormones in the camel.

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

Externally Funded Grant - 2004

Professor M Ellis
Differential dosing of liposomal amphotericin B in treating neutropenic fever.

Department of Medical Education

Prof D Lloyd	Associate Dean for Education	**Mr A Wahab**	Technician Manager, Teaching Lab
Dr. U Hedstrom	Coordinator, Skills Laboratory	**Ms S Al Mazrouei**	Technician, Teaching lab
Dr A Sherif	Teaching Assistant	**Mr A Prasad**	Photographer
Ms B Thorsteinson	Director, Learning Resource	**Ms H Mansour**	Secretary
Mr K Neumann	English Unit	**Mr M Nazimmuddin**	Secretary, OSC Office
Ms G Kershaw	English Unit	**Mr C P Nair**	Secretary, MSC Office
Mr A Mohammad	IT telemedicine Specialist	**Mr K Unnikrishnan**	Supervisor, Skills Laboratory
Ms M Al Baloushi	IT Specialist	**Mr M Aboobacker**	Photocopy Technician
Ms S Al Shamsi	IT Specialist	**Mr Pandian**	Office Assistant, Skill lab
Ms L Mohammed	IT Specialist	**Mr B Abubakkar**	Office Assistant, Teaching lab.
Ms A Al Shamsi	IT Specialist	**Mr Usman**	Office Assistant, Al Ain Pavillion
Ms I Lizarriturri	Graphic Designer		
Mr Mosa	Audio/Visual specialist		

Tel: 7672000 / Fax: 7672167 / http://www.fmhs.uaeu.ac.ae/Departments/Medical Education

Standing from left : Mr C P Nair, Mr AlSajir Mohammed, Mr A Wahab, Mr Pandian, Dr Samy Shaban, Mr K Neumann Mr Mosa, Mr A Prasad, Mr K Unnikrishnan, Mr M Nazimmuddin, Mr B Abubakkar
setting from left: Mr Ahmed Fathi (LRC-NML), Ms Nada Naji (LRC-NML), Ms B Thorsteinson, Dr U Hedstrom, Prof Lloyd, Ms G Kershaw, Ms H Mansour, Ms I Lizarriturri.

RESEARCH PROFILE

The Department of Medical Education supports the research mission of the Faculty of Medicine and Health Sciences in a number of ways. First, the Media Center provides technical assistance through high quality graphics and photography. These services are particularly relevant for production work related to journal submissions, poster presentations at professional conferences and other reports of findings.

Second, the Department can provide background and contextual data regarding student performance and assessment for staff engaged in research on curriculum and medical education topics and issues.

Selected research interests:

1. Student communication skills.

2. Utilization of a North American exam (National Board of Medical Examiners Clinical Subject Area Exams) as an external indicator of student achievement.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Thorsteinson EA. (2004). Med Movies: A Catalyst for Teaching Ethics and Professionalism. 2005 Annual Meeting of the Association for Medical Education in Europe, Edinburgh, UK.

Hedstrom U. (2004). Learning Resource Centre Ward Rounds brings reality to problem based learning. Association for Medical Education in Europe. Edinburgh.

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	Associate Professor	**Mr M K Jahabar**	Assistant senior Technician
Dr T Pal	Associate Professor	**Mr H Hasasna**	General Technician
Dr T Rizvi	Associate Professor	**Ms S R Amithr**	General Technician
Dr M B Al Shamsi	Assistant Professor	**Ms G Bashir**	Assistant Technician
Dr P Jumaa	Assistant Professor	**Ms G Dawood**	Secretary
Mr A Usmani	Chief Technician	**Ms N J S Al Dhafri**	Secretary
		Mr M Hashiq	Office Assistant

Tel : 7672000 / Fax : 7671966 / http://www.fmhs.uaeu.ac.ae/Departments/Microbiology

Standing from left : Dr. T Pal, Prof N Nowotny, Prof M Lukic, Mr A Al Haj, Dr. B al-Ramadi, Ms G Bashir
Dr A Sonnevend, Dr E Zilahi, Dr P Jumaa, Dr T Rizvi, Mr J Ali, Mr H Hasasna,
Dr M Al Shamsi, Ms M Dawood, Mr A Usmani, Mr M Hashiq

RESEARCH PROFILE

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.

Several groups of medical students were working in departmental laboratories and Miss Noora Al-Kuwait, Senior Clerkship student won the first prize for oral presentation at the GCC Medical Student Conference for her work on immunology of diabetes.

The intergration of graduate students in departmental research activities were also significant; two candidates were in the final phase of completing their M.S. thesis on the topics in molecular bacteriology and virology. Finally, part-time Ph.D. candidate working on immunology on hepatitis C infection obtained her Ph.D. degree from the University of Wells.

Several members of the department have had a very productive year in terms of number and quality of publications, in particular Professor N. Nowotny with eleven contributions to the international peer reviewed journals. The international exposure of the department was remarkable. Dr. al-Ramadi was chair and speaker of the session at the Euro-Mediterranean Congress on New Targets in Cancer Therapy (Sousse, Tunisia) and selected speaker at the International Conference on Lymphopoiesis (Puerto Rico) and International Endotoxin Society Meeting (Kyoto). Professor Lukic was selected speaker at the Annual Meeting of American Association of Immunologists (Washington) and Program Organizer and Chair of European Federation of Immunological Societies Meeting on Autoimmunity (Belgrade). Professor N. Nowotny was invited to give keynote presentations at the International Zoonoses Conference (Szeged, Hungary), the European Society for Infectious Diseases (Alfort, France) and at the Equine arteritis virus workshop (Lexington, Kentucky). Dr. T. Rizvi was selected participant and speaker at the Retroviral Assembly Meeting (Prague).

The departmental research greatly benefited from competent and dedicated technical and secretarial staff and continuous contribution by two volunteer research associates Drs. Farah Mustafa and Agnes Sonnevend. Finally, under the leadership of Professor N Nowotny, all members f the Department participated in the organization of the International Conference on Emerging Infectious Diseases (2005), which is high-lightened elsewhere in this publication.

Research interests of the departmental laboratories are as follows:

Over the last year, work in **Dr.Basel al-Ramadi's** laboratory was centered on studies exploring regulatory mechanisms in immunity to infections. This was done utilizing experimental animal models as well as analysis of cytokine production in a cohort of haematology patients undergoing chemotherapy. In both the animal and human studies, the primary interest was in the contribution of the various factors to innate immunity, the earliest phase of the immune response. In the animal studies, a number of strains with mutations in specific immune regulatory genes (e.g. TLR-4, CD154, and MyD88) are being used to characterize their role in intracellular microbial infections. Recently, novel findings have emerged demonstrating an essential role for CD40-CD154 interactions in innate immunity. Moreover, laboratory analysis of serum chemokines and inflammatory mediators in patients with haematological malignancy has revealed novel independent correlations between effector molecules, such as Pentraxin-3 and RANTES, and disease states in patients in response to different types of human infections. Further relationships are currently being examined in an effort to delineate the significance of serum cytokines/ chemokines in various infections and disease states.

The main area of research in **Professor Senarath Dissanayake's** laboratory is on the development of immunoadjuvants and understanding their modes of action. The model used is cutaneous leishmaniasis (*L. mexicana*) in Balb/c mice. Prototype adjuvants are derived from immunomodulatory glycans of another parasite, *Taenia crassiceps*. Previously, it has been shown that *Taenia* glycans modulate the Th-1/Th-2 balance in immune responses to defined antigens. Current emphasis is on identifying the glycan moieties that have specific immunomodulatory activities. Physico-chemical characterization is performed by mass spectrometric analysis (in collaboration with Professor Anne Dell, Imperial College, London). The second major area of study is on the early

events of immunomodulation by parasitic glycans. The main thrust in this study is to define the role of macrophages in generating Th-1 or Th-2 type immune responses. Preliminary data support the hypothesis that parasite glycan induced and macrophage derived IFN-g could favour the direction of the immune response to a Th-1 type prior to T cell involvement.

Dr Pauline Jumaa has set up two major research projects investigating the molecular epidemiology of *Stenotrophomonas maltophilia* strains isolated from bacteraemia episodes in Tawam Hospital and the in vitro susceptibility patterns against newer antifungals of *Candida* spp isolated from invasive infections. These expand on previous and current studies on the epidemiology of nosocomial bloodstream infection and antimicrobial resistance, which are being performed in collaboration with clinical teams in the Faculty and the hospital. She has recently set up an investigation of airborne fungi in the hospital environment in collaboration with the Infection Control, Microbiology and Oncology departments in the hospital. Dr Jumaa is also collaborating with clinical colleagues in the Faculty and the hospital in an international study of candidaemia in oncology patients.

Professor Miodrag Lukic's main research interests is cellular and molecular basis of the T cell mediated autoimmune diseases and their regulation at the level of the target tissue. Experimental models are autoimmune encephalomyelitis and multiple-low dose STZ induced diabetes. Based on previous evidence that macrophages and macrophage derived cytokines produce *in-situ* may determine level of organ-specific immunopathology this laboratory studies the effects of newly defined member of Interleukin (IL)-12 family of cytokines: IL-23 and IL-27 in development of mononuclear cell infiltration and b cell damage in an experimental model of autoimmune diabetes. The evidence obtained demonstrating the importance of IL-23 in the effector phase of organ specific autoimmune response as well as effector and immunoregulatory role of IL-27. These data are first demonstration of the roles of these two proinflammatory cytokines in pathogenesis of diabetes. Related to this line of research is the project which analyse the role of galactin-3, and the role of T1/STZ molecule in modulating mediated immunopathology using corresponding "knock out" mice. Collaboration with the Department of Family Medicine led to the report indicating the possible role of IL-18 in aging and dementias.

Professor Norbert Nowotny's lab finalized in 2004 the laboratory investigations on the mitochondrial genes of autistic children from different ethnic backgrounds compared to healthy children. A high number of mutations (and some deletions) have been identified in the mitochondrial genes of autistic children, some of them occurred in several patients, and some of them were unique and have not been found in any genome database, neither GenBank nor specific mitochondrial databases. Also, several of these mutations lead to amino acid changes, and some also introduced stop-codons. Now the large number of results is being analyzed in detail in order to come to final conclusions and maybe to identify a mutation which might be linked to the disease. Also, the joint Sultan Qaboos University - U.A.E. University interdisciplinary grant on the molecular characterization of camelpox and rabies virus isolates from the U.A.E. and from Oman was finalized with quite interesting results; including the phylogenetic analysis of these isolates. Collection of potential viral pathogens in ticks, mosquitoes and rodents; dangerous for human, which may be transmitted by these vectors is in progress.

The main are of interest in **Dr Tibor Pal's** laboratory is the identification and molecular characterization of bacterial pathogens of local relevance. Recently we have completed the first study in this country on the carriage of Shiga toxin producing *E. coli* by local farm animals. An unexpected outcome of this study was the first demonstration of such a pathogen in a camel (*manuscript in preparation*). The first study concerning the detection of various diarrhea causing pathotypes of *E. coli* in adults in the U.A.E. has also been completed this year. A surprisingly large number of aggregative and atypical enteropathogenic strains were found in patients with diarrhea, as well as in healthy carriers. A similar study is currently in progress in children. During these studies five multidrug resistant enteroaggregative *E. coli* strains producing extended spectrum beta lactamase, a phenomenon never characterized before, were isolated. The plasmid coded nature of the enzyme has been proven and its gene was completely sequenced (*submitted for publication*). Currently, further projects, such as the molecular characterization of local *Campylobacter jejuni* isolates, as well as MRSA strains, and the molecular detection of *Legionella* at ADCO fields are in progress.

The primary focus of **Dr Tahir Rizvi's** laboratory is to delineate the fundamental steps involved in retroviral replication and pathogenesis, including viral RNA packaging and cross-packaging among retroviruses and regulation of viral gene expression. The ultimate goal of these studies is the establishment of safe and effective retroviral/ lentiviral vectors for human gene therapy. One of the exciting projects in the laboratory currently is the delineation of the packaging determinants of the feline immunodeficiency virus (FIV). FIV is being solicited as the retrovirus of choice in efforts to develop safer vectors for human gene therapy over primate lentiviruses such as HIV and SIV due to its greater phylogenetic distance from these lentiviruses. The evolutionary distance should reduce the chances of generation of pathogenic variants by recombination between similar retroviruses. Thus, Dr Rizvi's group are working on designing next generation of FIV-based expression vectors and packaging cell lines, including "self-inactivating (SIN)" FIV gene transfer vectors that will deliver the gene of interest to the target cells, but in the process result in their own "self-inactivation" so that no packageable RNA is generated that can result in replication competent variants that can propagate further in the host.

ARTICLES IN PEER REVIEWED JOURNALS

al Ramadi BK, Bashir G, Rizvi TA, Fernandez-Cabezudo M J. (2004). Poor survival but high immunogenicity of IL-2-expressing Salmonella typhimurium in inherently resistant mice. Microbes Infect., 4:350-359.

al-Ramadi BK, Ellis M, Pasqualini F, Montovani A. (2004). Selective induction of Pentraxin 3, a soluble innate immune pattern recognition receptor, in infectious episodes in patients with haematological malignancy. Clinical Immunology, 112:221-224.

al-Ramadi BK, Fernandez-Cabezudo MJ, Mustafa N, Xu D. (2004). Activation of innate immune responses by IL-2-expressing *Salmonella typhimurium* is independent of Toll-like receptor 4. Molecular Immunology, 40:671-679.

Bakonyi T, Gould EA, Kolodziejek J, Weissenböck H, Nowotny N. (2004). Complete genome analysis and molecular characterization of Usutu virus that emerged in Austria in 2001; comparison with the South African strain SAAR-1776 and other flaviviruses. Virology, 328; 301-310.

Benetka V, Kübber-Heiss A, Kolodziejek J, Nowotny N, Hofmann-Parisot M, Möstl K. (2004). Prevalence of feline coronavirus types I and II in cats with histopathologically verified feline infectious peritonitis. Veterinary Microbiology, 99; 31-42.

Brevier CR, Sonnevend A, Kolodziejek J, Nowotny N, Nielsen PF, Conlon JM. (2004). Purification and characterization of antimicrobial peptides from the skin secretions of the mink from (Rana septentrionalis). Comparative Biochemistry and Physiology, Part C 139; 31-38.

Chvala S, Kolodziejek J, Nowotny N, Weissenböck H. (2004). Pathology and viral distribution in fatal Usutu virus infections of birds from the 2001 and 2002 outbreaks in Austria. Journal of Comparative Pathology, 131; 176-185.

Chvala S, Nowotny N, Kotzab E, Cain M, van den Hoven R. (2004). Use of the meridian test for the detection of equine herpesvirus type 1 infection in horses with decreased performance. Journal of the American Veterinary Medical Association, 225; 554-559.

Conlon JM, Kolodziejek J, Nowotny N. (2004). Antimicrobial peptides from ranid frogs: taxonomic and phylogenetic markers and a potential source of new therapeutic agents. Biochimica et Biophysica Acta - Proteins and Proteomics, 1696; 1-14.

Conlon JM, Sonnevend A, Patel M, Al-Dhaheri K, Nielsen PF, Kolodziejek J, Nowotny N, Iwamuro S, Pal T. (2004). A family of brevinin-2 peptides with potent activity against Pseudomonas aeruginosa from the skin of the Hokkaido frog, Rana pirica. Regulatory Peptides, 118; 135-141.

Conlon JM, Sonnevend Á, Patel M, Al-Dhaheri K, Nielsen PF, Kolodzijek J, Nowotny N, Iwamuro S, Pál T. (2004). A family of brevenin-2 peptides with potent activity against *Pseudomonas aeruginosa* from the skin of the Hokkaido frog, Rana pirica. Reg. Peptides, 118:135-141.

Dissanayake S, Amith RS, Shahin A. (2004). *Taenia crassiceps* carbohydrates stimulate IL-6 expression in naive murine macrophages via Toll-like receptors (TLRs). Molecular Immunology, 41(4):391-8.

Dissanayake S. (2004). Relative lack of clinical disease among household contacts of tuberculosis patients compared to leprosy households. Trans R Soc Trop Med Hyg, 98(3):156-64.

Fernandez-Cabezudo, M.J, Vijayasarathy C, Pflugh DL, Bothwell ALM, al-Ramadi BK. (2004). Evidence for a dual pathway of activation in CD43-stimulated Th2 cells: differential requirement for the Lck tyrosine kinase. International Immunology, 16: 1215-1223.

Gavier-Widén D, Bröjer C, Dietz HH, Englund L, Hammer A-S, Hedlund K-O, Hård af Segerstad C, Nilsson K, Nowotny N., Puurula V, Thorén P, Uhlhorn H, Weissenböck H, Ågren E, Klingeborn B. (2004). Laboratory investigations into shaking mink syndrome: an encephalomyelitis of unknown cause in farmed mink (Mustela vison) kits in Scandinavia. Journal of Veterinary Diagnostic Investigation, 16; 305-312.

Hassler D, Pfeffer M, Weissenböck H, Nowotny N. (2004). Erst die Krähen, dann der Mensch? Usutu-Virus in Österreich erinnert an West-Nil-Virus in den USA. Deutsche Medizinische Wochenschrift, 129; 2339-2340.

Juncker-Voss M, Prosl H, Lussy H, Enzenberg U, Auer H, Lassnig H, Müller M, Nowotny N. (2004). Untersuchungen auf Antikörper gegen Zoonoseerreger bei Angestellten des Wiener Tiergartens Schönbrunn. Berliner und Münchner Tierärztliche Wochenschrift, 117; 404-409.

Margolis SA, Shahi A, Reed RL, Lukic ML. (2004). Increased circulating Interleukin-18 levels in aging and dementia. Immunology, (Medimond) 135 – 138.

Mustafa F, Lew KA, Schmidt RD, Browning MT, Rizvi TA. (2004). Mutational analysis of the predicted secondary RNA structure of the Mason-Pfizer monkey virus packaging signal. Virus Research, 99: 35-46. 2004.

Mustafa F, Phillip PS, Jayanth P, Ghazawi A, Lew KA, Schmidt RD, Rizvi TA. (2004). Close proximity of MPMV CTE to the polyadenylation sequences is important for efficient function in the subgenomic context. Virus Research, 105:209-218.

Sonnevend Á, Knoop FC, Patel M, Pál T, Soto AM, Conlon JM. (2004). Antimicrobial properties of the frog skin oeotide, ranatuerin-1 and its [Lys-8]-substituted analog. Peptides, 25:29-36

Weissenböck H, Bakonyi T, Chvala S, Nowotny N. (2004). Experimental Usutu virus infection of suckling mice causes neuronal and glial cell apoptosis and demyelination. Acta Neuropathologica, 108; 453-460.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Al-Awadhi FAM, Al-Shehhi HAM, Nowotny N. (2004). Human brucellosis in the United Arab Emirates. Emirates Medical Journal 22 (1) Suppl.; 139.

Dissanayake S, Amith R, Shahin A, Lee J, Shahin A, Dell A. (2004). A carbohydrate adjuvant vaccine for cutaneous leishmaniasis. Int J Infect Dis, 11th ICID Abstracts, S38.

Lukic ML, Mensah-Brown E, Shahin A, Liew FY. (2004). IL-18 is required for the induction of autoimmune diabetes in mice. FASEB J, 18(4): A.779.8.

Mensah-Brown EPK, Shahin A, Garely L, Lukic M. (2004). Microglial expression of Cd 11 b/c correlates to resistance to experimental allergic encephalomyelitis. Clinical Inv. Med. M10.41.

Weissenböck H, Chvala S, Bakonyi T, Seidel B, Nowotny N. (2004). Continuing spread of Usutu virus, a mosquito-borne flavivirus, in central Europe. American Journal of Tropical Medicine and Hygiene, 71; 294.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Ghazawi A, Mustafa F, Jayanth P, Phillips PS, Rizvi TA. (2004). Fine Mapping of Sequences Important for FIV RNA Packaging and Their Mechanism of Action. Presented at the Fifth UAE University Research Conference, Al Ain, 2004.

Ghazawi A, Mustafa F, Jayanth P, Phillip PS, Rizvi TA. (2004). Further Refinement of the Packaging Determinants of FIV RNA Encapsidation. Retroviral Assembly Meeting, Prague, 2004.

al-Ramadi B. (2004). Maintenance of mucosal integrity in cancer patients by administration of recombinant human interleukin-11: correlation with reduced rate of bacterial infections and sepsis. Invited Speaker, First Euro-Mediterranean Congress on New Targets in Cancer Therapy: Biology and Clinical Applications. Sousse, Tunisia.

al-Ramadi B. (2004). Immune regulation in experimental *Salmonella* infections. Invited Speaker, College of Medicine, Arabian Gulf University, Bahrain.

al-Ramadi B. (2004). Invited Speaker, Thymus 04: International Conference on Lymphopoiesis, T cell differentiation, and Immune Reconstitution. San Juan, Puerto Rico.

al-Ramadi B. (2004). CD154 is essential for protection against Gram-negative *Salmonella* Infections. 8th Conference of the International Endotoxin Society, Kyoto, Japan,

al-Ramadi BK, Fernandez-Cabezudo MJ. (2004). Multiple roles of Lck in T lymphocyte function. Thymus 04: International Conference on Lymphopoiesis, T cell differentiation, and Immune Reconstitution. San Juan, Puerto Rico.

al-Ramadi BK, Ullah A, Bashir G, Fernandez-Cabezudo MJ. (2004). Induction of Innate Immunity by Cytokine-encoding *Salmonella* Vaccine Vectors. 12th International Congress of Immunology and 4th Annual Conference of FOCIS, Montreal, Canada.

al-Ramadi BK, Ullah A, Bashir G, Fernandez-Cabezudo MJ. (2004). Endotoxin-independent induction of innate immunity by IL2-expressing recombinant *Salmonella typhimurium*. 8th Conference of the International Endotoxin Society, Kyoto, Japan.

al-Ramadi BK, Ullah A, Fernandez-Cabezudo MJ, Flavell RA. (2004). CD154 is essential for protection against Gram-negative *Salmonella* Infections. 8th Conference of the International Endotoxin Society, Kyoto, Japan.

al-Ramadi BK, Hasan MY, Fahim M, Fernandez-Cabezudo MJ, Adeghate E, Zoubeidi T, Behjat S, Karlsson E, Adam A. (2004). Anti-diabetic herbs: Putative mechanism of action of potential novel anti-diabetic drug candidates. The Fifth Annual Research Conference at UAE University, Al Ain, UAE, 2004.

Baran H, Kepplinger B, Lang Ch, Draxler M, Schmoll F, Strasser A, Schuh M, Nowotny N. (2004). Enhancement of kynurenic acid (KYNA) and neopterin levels in serum of piglets after encephalomyocarditis virus (EMCV) infection. 18th IPVS Congress, Hamburg.

Chvala S, Bakonyi T, Nowotny N, Weissenböck H. (2004). Pathologie und Virusverteilung bei Usutu Virus Infektionen von Wildvögeln. Lecture. 47. Tagung der Fachgruppe, Rostock.

Chvala S, Weissenböck H, Bakonyi T, Nowotny N. (2004). Pathology and viral distribution in Usutu virus infections of birds. 6th Conference of the European Wildlife Disease Association, Uppsala.

Dissanayake S, Amith R, Abraham S, Shahin A. (2004). Development of a carbohydrate adjuvant vaccine for cutaneous leishmaniasis. Fifth Annual U.A.E. University Research Conference.

Draxler M, Baran H, Schmoll F, Nowotny N, Kepplinger B, Url A, Schmidt P, Strasser A, Niedermüller H, Hofecker G, Schuh M. (2004). Affected choline acetyltransferase (ChAT) activity in piglet brain after encephalomyocarditis (EMCV) virus infection. 18th IPVS Congress, Hamburg.

Draxler M, Kepplinger B, Schmoll F, Nowotny N, Url A, Schmidt P, Strasser A, Niedermüller H, Schuh M, Baran H. (2004). Choline acetyl transferase (ChAT) and glutamic acid decarboxylase (GAD) activities in control piglet brain. 18th IPVS Congress, Hamburg.

Mustafa F, Jayanth P, Phillips PS, Ghazawi A, Rizvi TA. (2004). Regulation of Retroviral Gene Expression by the Constitutive Transport Element (CTE). Presented at the Fifth UAE University Research Conference, Al Ain.

Mustafa F, Jayanth P, Phillips PS, Ghazawi A, Rizvi TA. (2004). Regulation of Retroviral Gene Expression by the Constitutive Transport Element (CTE). Presented at the Fifth UAE University Research Conference, Al Ain.

Fernandez-Cabezudo MJ, al-Ramadi BK, Hasan MY, Fahim MA. (2004). Preliminary results of the effect of lead on the immune system. The Fifth Annual Research Conference at UAE University, Al Ain, UAE.

Fernandez-Cabezudo MJ, Vijay C, El-Hassana H, Pflugh DL, Bothwell ALM al-Ramadi BK. (2004). Evidence for a Dual Pathway of Activation in CD43-Stimulated T cells: Differential Requirement for the Lck Tyrosine Kinase. 12th International Congress of Immunology and 4th Annual Conference of FOCIS, Montreal, Canada .

Lukic, ML. (2004). (Invited speaker). Proinflammatory cytokines (IL-15, IL-18, IL-23 and IL-27) in the Pathogenesis of Type-1 Diabetes (2004). Proceedings EFIS Symposium on Autoimmunity.

Muss WH, Emberger M, Kolodziejek J, Nowotny N. (2004). Variola? Morphological findings in two historic skin specimens from Vienna, Austria. Invited Lecture. Electron microscopy workshop, Berlin (GE).

Nowotny N, Bakonyi T, Kolodziejek J, Lussy H, Seidel B, Chvala S, Weissenböck H. (2004). Emergence and spread of Usutu virus, an African mosquito-borne flavivirus, closely related to West Nile virus, in Central Europe. International Conference on Emerging Infectious Diseases, Atlanta, Georgia, U.S.A.

Nowotny N, Bakonyi T, Kolodziejek J, Lussy H, Seidel B, Chvala S, Weissenböck H. (2004). Emergence and spread of Usutu virus, an African mosquito-borne Flavivirus, in central Europe. 2nd European Congress of Virology , Madrid, Spain.

Nowotny N, Bakonyi T, Kolodziejek J, Lussy H, Seidel B, Chvala S, Weissenböck H. (2004). Emergence and spread of Usutu virus, an African mosquito-borne Flavivirus, in central Europe. 3rd Congress of the European Society for Emerging Infections, Alfort, France.

Nowotny N, Kindermann J, Lussy H, Kolodziejek J, Schwarz A, Westcott DG, Paton DJ, Belak S. (2004). Development and application of a highly sensitive RT-PCR assay for the direct detection of equine arteritis virus nucleic acid in semen of stallions, and comparison with other RT-PCR assays. Workshop, M.H. Gluck Equine Research Center, University of Kentucky, Lexington, Kentucky, U.S.A.

Nowotny N, Zilahi E, Al Hadj MA, Wernery U, Kolodziejek J, Lussy H, Al Dhahry S, Al-Kobaisi MFM, Al Rawahi A, Al Ismaily S. (2004). Molecular characterization of camelpox viruses isolated in the U.A.E. 5th Annual UAE University Research Conference, Al Ain.

Nowotny N, Zilahi E, Al Hadj MA, Wernery U, Kolodziejek J, Lussy H, Al Dhahry S, Al-Kobaisi MFM, Al Rawahi A, Al Ismaily S. (2004). Molecular epidemiology of camelpox and rabies viruses isolated in the United Arab Emirates and in Oman. International Symposium, Würzburg, Germany.

Nowotny N. (2004). SARS. Invited Lecture. Infection Control Meeting, Dubai, 11. - 13.09.2004.

Nowotny N. (2004). Selected viral zoonoses in Austria. Invited Lecture. International Zoonoses Conference, Szeged, Hungary.

Nowotny N. (2004). Tollwut – Epidemiologie und Prävention. Invited Lecture. Österreichische Gesellschaft für Infektionskrankheiten, Vienna, Austria.

Nowotny N. (2004). Usutu virus: an example of a mosquito-borne virus infection emerging in another continent. Invited Lecture. Infectious Disease Meeting, Dubai.

Pelkonen P, Kolodziejek J, Nowotny N, Syrja P, Cizinauskas S, Johansson M, Raekallio M, Weissenböck H, Palva A, Vaheri A, Vapalahti O. (2004). First verified case of Borna disease in a horse in Finland: clinical characterization and genetic properties of the BDV strain. 2nd European Congress of Virology, Madrid, Spain.

Steineck T, Kolodziejek J, Nowotny N, Schilcher F. (2004). A case of swine pox in a wild boar (Sus scrofa) in Austria. 6th Conference of the European Wildlife Disease Association, Uppsala.

Weissenböck H, Chvala S, Bakonyi T, Seidel B, Nowotny N. (2004). Usutu virus spread in Austria monitored by dead bird surveillance. 6th Conference of the European Wildlife Disease Association, Uppsala.

Westcott DG, King DP, Frossard JP, Nowotny N, Kindermann J, Hannant D, Belak S, Paton DJ, Deregt D, Drew TW. (2004). Further development of a closed one tube reverse transcription single polymerase chain reaction with fluorescent probes, for the detection of equine arteritis virus RNA . Workshop, M.H. Gluck Equine Research Center, University of Kentucky, Lexington, Kentucky, U.S.A.

Website: The website for the International Conference on Emerging Infectious Diseases was established in 2004: http://www.iceid-uae.com

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Dr S Dissanayake
Characterization and identification of glycosidic residues in the candidate vaccine TCHO for cutaneous leishmaniasis.

Prof ML Lukic
The Role of Interleukin 1 Receptor-Related Molecule T1/St2 in Pathogenesis of Type -1 Diabetes.

Dr. T Pal
Phenotypic and Molecular Typing of Methicillin Resistant *Staphylococcus aureus* (MRSA) isolated in a UAE Hospital (2004).

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

Dr. TA Rizvi
Delineation of Sequences Involved in the Packaging and Dimerization of FIV Genome.

UAE University Grants - 2004

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

Prof ML Lukic
Interleukin 18 and Interleukin 18 Gene Polymorphisms in Dementia and Alzheimer's Disease: An analysis In Aging United Arab Emirates Population.

Dr B al-Ramadi
Cellular and molecular aspects of immunotoxicity induced by lead: A major environmental pollutant. (2004-2005).

Hamdan Award Medical Research Grant - 2004

Prof S Dissanayake
A Carbohydrate Adjuvant Vaccine for Cutaneous Leishmaniasis.

Prof ML Lukic
Role of Galectin-3 In The Induction of Inflammatory Autoimmunity: An Analysis In Experimentally Induced Type-1 Diabetes In Mice.

Dr TA Rizvi
Development of Feline Immunodeficiency Virus (FIV)-Based Self-Inactivating Vectors and Packaging Cell Lines for Potential Use in Human Gene Therapy.

Terry Fox Cancer Research Grant - 2004

Dr B al-Ramadi
Development of cytokine-based immunotherapies for the treatment of cancer using live attenuated *Salmonella* as targeting carriers. (2004-2007)

Dr TA Rizvi
The Role of Multiple Promoters in the Regulation of Gene Expression by the Mouse Mammary Tumor Virus (MMTV).

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

Others

ADCO Grants

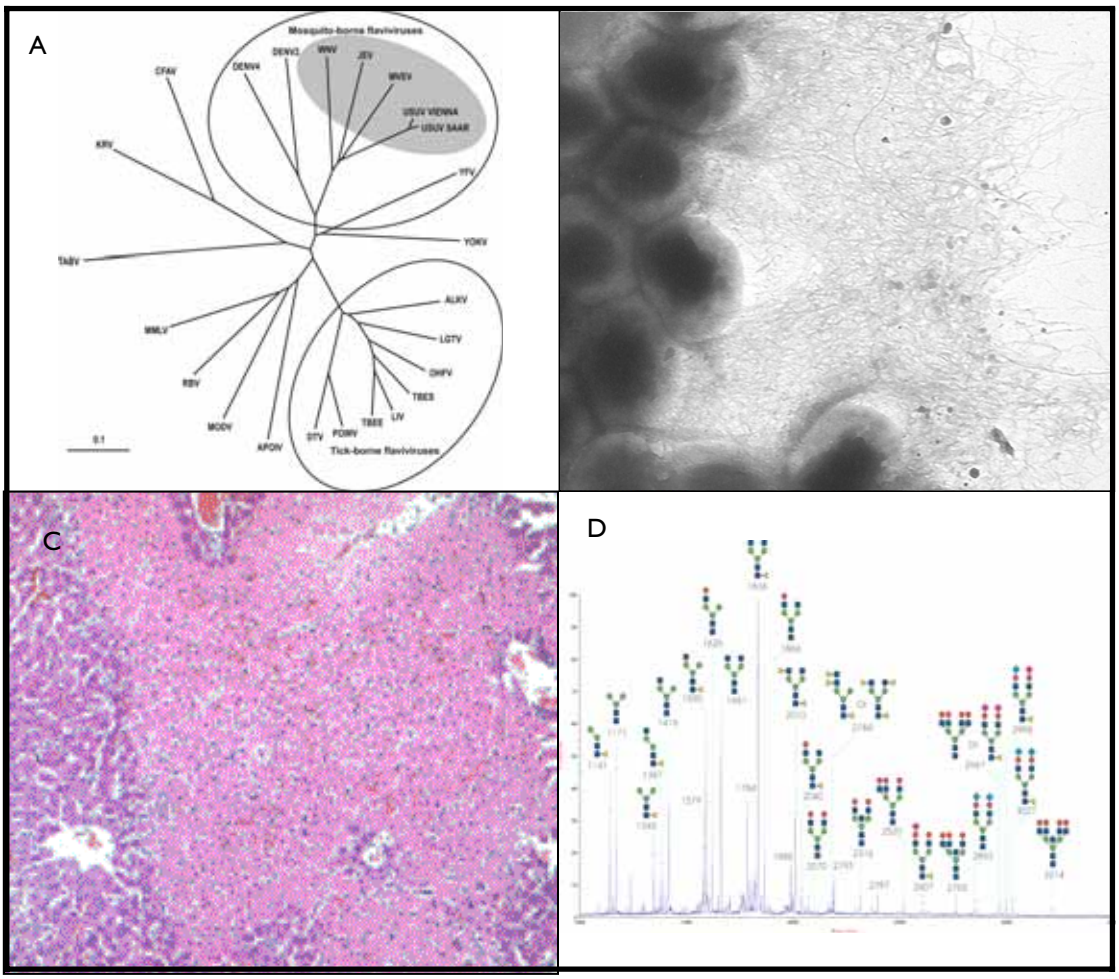
Prof N Nowotny
Identification and assessment of biological health hazards within ADCO fields and terminals - with special emphasis on legionella and micro-organisms transmitted by mosquitoes, ticks and flies

GCC Cooperation Grants

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

ILLUSTRATIONS OF DEPARTMENTAL RESEARCH



A.Phylogenetic tree illustrating the genetic relationship between flaviviruses. From: Bakonyi T, Gould EA, Kolodziejek J, Weissenböck H, **Nowotny N.** (2004). *Virology* 328; 301-310.

B.Curli expression of enterotoxigenic *Escherichia coli* . These appendages are used by bacteria to form aggregates and thus they are more likely to withstand environmental stresses. From: Szabó, E., Skedsmo, A., Sonnevend. Á., Al-Dhaheri, K., Emődy, L., Usmani, A., **Pál, T**.:– *Folia Microbiologica – in press*

C.Liver section of CD154-deficient mouse infected with *Salmonella typhimurium*. Large areas of necrosis are observed. These non-healing lesions lead to death of animal. **al-Ramadi** et al (2005)-*Submitted for publication*

D.Matrix Assisted Laser Desorption Ionization (MALDI) mass spectrometric analysis of Taenia glycans showed the composition as a mixture glycans of putative high mannose structures and truncated cores with or without fucose. The adjuvant effects are believed to be associated with fucosylated sugars. **Dissanayake.S** (on going research).

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		

Tel: 7672000 / Fax: 7672167 / http://www.fmhs.uaeu.ac.ae/Departments/ ObstetricsGynaecology

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: Perinatal Medicine, Oncology, Women's Health and Urogynecology and Laparoscopic surgery

PERINATAL MEDICINE

Hypertension and Preterm Labour

Professor M. Ezimokhai is interested in the pathogenesis of pregnancy induced hypertensive and preterm labour, vascular and uterine smooth muscle reactivity in normal and pathological pregnancies in animal and human models.

Fetal Medicine

Dr. H. Mirghani is interested in the study of fetal biophysical profile.

Women Health and Urogynaecology

Dr. D. Rizk is interested in epidemiological studies of various aspects of Women's Health with major focus on Urogynaecology.

Oncology

Dr. S. G. Aswad is interested in Cancer detection and prevention.

Laparoscopic surgery

Dr. T. Bossmar is interested in Uterine Physiology, development of new drugs in management of dysmenorrhea and preterm labour and new techniques in Laparoscopics Surgery.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Aswad SG, Badrinath P, Osman P, Khaliq S.A, McIlvenny S, Sidky I. (2004). Prevalence of Chlamydia trachomatis infection among women in a Middle Eastern community. BMC Women's Health 4:3.

Badrinath P, Aswad SG, Deemas E. McIlvenny S, Osman N. (2004). A Study of Knowledge, Attitude and Practice of Cervical Screening among female primary care physicians in the United Arab Emirates. Health Care for Women International, 25: 663-670.

Mensah-Brown EP, Rizk DEE, Patel M, Chandranath SI, Adem A. (2004). Effects of ovariectomy and hormone replacement on submucosal collagen and blood vessels of the anal canal of rats. Colorectal Dis 6: 481-487.

Mirghani HH, Weerasinghe S, Al-Awar S, Hamud OA. (2004). Intrauterine fetal transfusion. Saudi Med J. 12:2001-3.

Mirghani HM, Hamed M, Ezimokhai M, Weerasinghe. (2004). DS.Pregnancy-related admissions to the intensive care unit. Int J Obstet Anesth. 2: 82-5.

Mirghani HM, Weerasinghe SD, Smith JR, Ezimokhai M. (2004). The effect of intermittent maternal fasting on human fetal breathing movements. Journal of Obstetrics and Gynaecology 24(6): 635-637.

Mosallam M, Rizk DEE, Thomas L, Ezimokhai M. (2004). Women's attitudes towards psychosocial support in labour in United Arab Emirates. Arch Gynecol Obstet 269: 181-187.

Rizk DEE, Elzubeir MA. (2004). Self-reported assessment of senior medical students and interns of unprofessional practice. Teach Learn Med 16: 39-45.

Rizk DE, Czechowski J, Ekelund L. (2004). Dynamic assessment of pelvic floor and bony pelvis morphologic condition with the use of magnetic resonance imaging in a multi-ethnic, nulliparous, and healthy female population. Am J Obstet Gynecol 191: 83-89.

Steinwall M, Hansson S, Bossmar T, Larsson I, Pilka R, Akerlund M. (2004). Oxytocin mRNA content in the endometrium of non-pregnant women. British Journal of Obstetrics and Gynaecology 111(3):266-270.

Steinwall M, Akerlund M, Bossmar T, Nishii M, Wright M. (2004). ONO-8815Ly, an EP2 agonist that markedly inhibits uterine contractions in women. British Journal of Obstetrics and Gynaecology 111(2):120-124.

Steinwall M, Bossmar T, Gaud C, Akerlund M. (2004). Inhibitory effects of SR 49059 on oxytocin- and vasopressin-induced uterine contractions in non-pregnant women. Acta Obstetrica and Gynecologica Scandinavica 83(1):12-18.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Rizk DEE, Nasser M, Thomas L, Ezimokhai M. (2004) Views of women towards cesarean section. Saudi Med J.25: 1774-1775

Rizk DEE. (2004) Some doctors are not scientists, others are semi-scientists but all are scholars: Pride and prejudice. Rapid response to the Editor: bmj.com, 20 Jun

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Al-Ali LY, Al-Mansouri FR, Al-Dhaheri AM, Al-Jenaibi HS, El-Zubeir MA, Rizk DEE. (2004). Priorities and determinants of women's choice of their obstetrician and gynecologist provider in Al-Ain, United Arab Emirates. IInd Scientific Conference for Medical Students in the GCC Countries, Al-Ain, United Arab Emirates

Czechowski J, Ekelund L, Rizk DEE, Khalek W, Smith

K, Somanthan P, Kutty M. (2004). MRI of pelvic floor in a multi-ethnic, nulliparous and healthy female population VII European Congress of Radiology, , Vienna, Austria

Rizk DEE. (2004). Invited Keynote Lectures: II Regional Conference on Medical Journals in the WHO Eastern Mediterranean Region, October 2004, Riyadh, Kingdom of Saudi Arabia

Rizk DEE, Mensah-Brown EP, Patel M, Chandranath SI, Nasser O, Ahmed I, Al-Haj M, Adem A. Effects of ovariectomy and hormone replacement on submucosal collagen and blood vessels of the anal canal of rats. Joint XXXIV Annual Meeting of the International Continence Society and the International UroGynecolgical Association, August 2004, Paris, France.

Rizk DEE, Padmanabhan RK, Tariq S, Shafiullah M, Ahmed I. Ultra-structural abnormalities of the urinary bladder in streptozotocin-induced diabetic female rats. Joint XXXIV Annual Meeting of the International Continence Society and the International UroGynecolgical Association, August 2004, Paris, France

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Dr D EE Rizk

Principal Investigator: Light and electron microscopic abnormalities of the urinary bladder in streptozotocin-induced diabetes in female rats.

Dr T Bossmar

Vasopressin and Oxytocin in rat uterus .

UAE University Grants – 2004

Dr D EE Rizk (2004-2006)

Effects of ageing versus ovariectomy on pelvic floor function in a female rat model.

Department of Pediatrics

Prof S A Uduman	Professor, Chairman	**Dr R A M Mahmoud**	Teaching Assistant
Prof L Al Gazali	Professor	**Dr S Eisa**	Teaching Assistant
Prof Y Abdulrazzaq	Professor	**Dr A D Al Suwaidi**	Teaching Assistant
Dr I Amirlak	Associate Professor	**Ms S Al Falahi**	Research Assistant
Dr A Gururaj	Associate Professor	**Mr A Ibrahim**	General Technician
Dr L Sztriha	Associate Professor	**Mr T Pramathan**	General Technician
Dr S E Al-Hammadi	Assistant Professor	**Mr J Kochiyil**	General Technician
Dr B G Balhaj	Teaching Assistant	**Ms B Wood**	Medical Secretary
Dr M Al Samri	Teaching Assistant	**Ms R Clemente**	Secretary
Dr Fatma Al-Jasmi	Teaching Assistant	**Ms M Al Badwawi**	Secretary

Tel: 7672000 / Fax: 7672022 / http://www.fmhs.uaeu.ac.ae/Departments/Pediatrics

Standing from left to right: Mr. Jamal, Dr. Gururaj, Dr. G Bal-Haj, Mr. A Ibrahim, Ms. R Clemente, Mr. K Assinair, Dr. S Al-Hammadi, Mrs. B Wood, Mr. J Kochiyil, Mr. Pramathan
Seated from left to right: Dr. L. Sztriha, Dr. P. Thompson, Prof. SA Uduman, Prof. A. Dawodu (Chair), Prof. Y. Abdulrazzaq, Prof. L. Al-Gazali, 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.

X ray of the arm and hand in a patient with Acromesomelic dysplasia showing shortening and bowing of the radius and ulna, shortening and widening of metacarpals and phalanges. A homozygous mutation in the Transmembrane Natriuretic Peptide Receptor NPR-B (c. 2869C→T) was found in this patient. Am J Hum Genet 2004; 75: 27-34.

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 embryos 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 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) con-

tamination 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, Osman N, Yousif ZM, Trad O. (2004). Morbidity in neonates of mothers who have ingested aflatoxins. Ann Trop Paediatr, 24(2): 145-51.

Bartels CF, Bukulmez H, Padayatti P, Rhee DK, Ravenswaaiji-Arts CV, Pauli RM, Mundlos S, Chitayat D, Shih L, AL-Gazali LI, Kant S, Cole T, Morton J, Cormier-Daire V, Faivre L, Lees M, Kirk J, Mortier GR, Akker FVD, Barman ML. (2004). Human skeletal growth is regulated by transmembrane natriuretic peptide receptor NPR-B. Am J Hum Gene, 75:27-34.

Dagoneau N, Scheffer D, Huber C, Al-Gazali LI, Di Rocco M, Godard A, Marrinovic J, Raas-Rothschild A, Sigaudy S, Unger S, Nicole S, Fontaine B, Taupin J, Moreau J, Superti-Furga A, Le Merrer M, Bonaventure J, Munnich A, Legeai-Mallet L, Cormier-Daire V. (2004). Null Leukemia Inhibitory Factor Receptor (LIFR) mutations in Stuve-Wiedemann/Schwartz-Jampel 2 syndrome. Am J Hum Genet, 74: 298-305.

Dixon-Salazar T, Silhavy JL, Marsh SE, Louie CM, Scott LC, Gururaj A, Al-Gazali L, Al-Tawari A A, Kayserili H, Sztriha L, Gleeson G G (2004). Mutations in the AHI 1 gene, encoding Jouberin, cause Joubert syndrome with cortical polymicrogyria. Am J Hum Genet, 75:979-987.

Georgiou T, Drousitou A, Campos Y, Caciotti A, Sztriha L, Gururaj A, Ozand P, Zammarchi E, Morrone A, D'Azzo A. (2004). Four novel mutations in patients from the Middle East with the infantile form of GM1 gangliosidosis. Human Mutation, 24(4): 352. Online.

Langer R, Al-Gazali LI, Haas D, Raupp P, Varady E. (2004). Osseous Abnormalities and CT Findings in Stueve-Wiedemann-Syndrome (SWS). Fortschr. Roentgenstr. 176: 215-221.

Langer R, Al-Gazali LI, Raupp P. (2004). Body stalk anomaly - an extremely rare congenital malformation. Fortschr Roentgenstr. 176: 768-769.

Sztriha L. Guerrini R, Harding B, Stewart F, Chelloug N, Johansen JG. (2004). Clinical, MRI, and pathological features of polymicrogyria in chromosome 22q11 deletion syndrome. Am J Med Genet, 127A; 313-317.

Sztriha L, Dawodu A, Gururaj A, Johansen JG. (2004). Microcephaly associated with abnormal gyral pattern. Neuropediatrics, 35; 346-352.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Abdulrazzaq YM. (2004). Medical aspects of the management of amino acid inborn errors (editorial). Middle East Paediatrics, 9(3): 76-77.

Abdulrazzaq YM, Osman N. (2004). Risk of aflatoxin exposure and its effects on the fetus and child (review). Middle East Paediatrics, 9(2): 44-46.

Abdulrazzaq YM. (2004). Pathogenesis, prevention and treatment of chronic lung disease (review). Journal of the Arab Neonatology Forum, 1: 23-26.

Al Gazali LI. (2004). Congenital malformation & osteochondrodysplasia in the UAE. In: Genetic Disorders in the Arab World (UAE). Editors: Tadmouri GO, Al Ain, MT, Al-Khaja N.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Sztiha L, Esponosa-Parrilla Y, Gururaj A, Amiel J, Lyonnet S, Gerami S, Johansen JG. (2004). Frameshift mutation of the zinc finger homeo box 1B gene is syndromic corpus callosum agenesis (Mowat-Wilson syndrome). Neurology 62, Suppl. 5; A72.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Abdulrazzaq YM. (2004). Pathology, prevention and treatment of Chronic Lung Disease, Annual Conference of EAN, ESMANEH and ANF, Cairo.

Abdulrazzaq YM. (2004). Asthma in the Middle East,

Paediatric Asthma in the UAE, Sharjah.

Abdulrazzaq YM (2004). Kidney in the newborn period, 3rd World Congress of Perinatal Medicine in Developing Countries, Beirut, Lebanon.

Abdulrazzaq YM (2004). Breast milk trace metals and nutrients in UAE women in the first postpartum month. 24th International Paediatric Association Congress, Cancun, Mexico.

AbdulrazzaqYM. (2004). Effect of maternal administration of Vigabatrin during late gestation on fetoplacental amino acid profile in the mouse. 24th International Paediatric Association Congress, Cancun, Mexico.

Abdulrazzaq YM. (2004). Treatment of Asthma in Children, Practi-Med Dubai.

Al-Gazali LI, Shather Z, Feng A, Varady E, Giunta C, Randolph A, Kraeenzlin M, Steiumann B. (2004). Clinical & Molecular Study of Kyphoscoliotic Ehlers Danlos Syndrome (EDSVI) in the UAE. International Symposium on congenital malformations, Kyoto, Japan.

Desnick RJ, Tukel T, Diaz N, Al-Gazali LI, Marion RW, Clark RD, Cadilla C. (2004). Homozygous nonsense mutations in TWIST2 gene cause Setleis syndrome. Am Soc Hum Genet. Toronto.

Gururaj AK, Sztriha L, Nork M, Hass D. (2004). Neuroimaging in cerebral palsy. 8th Asian & Oceanian Congress of Child Neurology, New Delhi,

Uduman SA. (2004). Enterally transmitted Hepatotrophic Viruses. Post Graduate seminar. Sri Ramachandra Medical College and Research Center, Chennai, India.

Uduman SA. (2004). Seasonal and Clinical aspects of respiratory Syncytial Virus outbreaks in Al Ain, UAE- A 10-year (1993-2003) observational study. UAE University Research Conference. Al Ain, UAE.

RESEARCH GRANTS 2004

FMHS Continuation Grants

Dr I Amirlak
Micronutrient levels and pregnancy outcome in mothers in the United Arab Emirates.

Prof SA Uduman
Immunological and Longitudinal Clinical assessment of Infants of Toxoplasma and cytomegalovirus (CMV) infected mothers in Al Ain, UAE.

Sheikh Hamdan Award for Medical Research Grant

Prof L Al-Gazali
Subtelomeric Chromosome re-arrangement in children with unexplained mental retardation in the population of UAE.

Department of Pathology

Dr A Castella	Associate Professor, Acting Chairman	**Saeeda Al Marzooqi**	Teaching Assistant
Dr A Castella	Associate Professor	**Dr Alia Al Bawardi**	Teaching Assistant
Dr M Agarwal	Associate Professor	**Ms A Matera**	Senior Technician
Dr N Chan	Associate Professor	**Ms A Mathew**	General Technician
Dr SM Chong	Associate Professor	**Ms K Al Ghanem**	Secretary
Dr S Al Salam	Teacher Outside Faculty		

Tel: 7672000 / Fax: 7671966 / http://www.fmhs.uaeu.ac.ae/Departments/Pathology

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.

Histopathology/renal pathology/cytology (Dr. Norman Chan)

Renal diseases are common in the Middle East, yet little has been written on the subject of glomerulonephritis in the Gulf region. Geographical variation in the distribution of the various type of renal/glomerular disease in this region is unknown. We undertake, in collaboration with Tawam Hospital to study the pattern of glomerular disease in the UAE. The aim of this study is to analyze the distribution of the various kind of glomerulonephritis in a native and expat Arab population of the UAE. The results will then be compared with the distribution of glomerulonephritis in other Asian and European countries.

In collaboration with Dr Saad Ghazal Aswad, the initial stages of the study on the distribution of intraepithelial neoplasia (CIN/SIL) has been completed. This was followed by a Consensus Meeting (September 2004 Abu Dhabi), with invited interested participants across the UAE, the Ministry of Health (MOH) UAE and WHO Collaborating Center participating. This document has been submitted to the (MOH). Population-based screening of cervical cancer by cervical cytology is tentatively planned to start in the year 2006. We look forward to collect, analyze and learn from the data to be collected through this screening program.

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.

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-Bars 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: (Drs. Mukesh Agarwal)

The prevalence of diabetes mellitus in the UAE is among the 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 in the UAE? 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. The findings of this initial review will be presented in a forthcoming meeting of the World Association of Societies of Pathology and laboratory Medicine in Istanbul in May 2005.

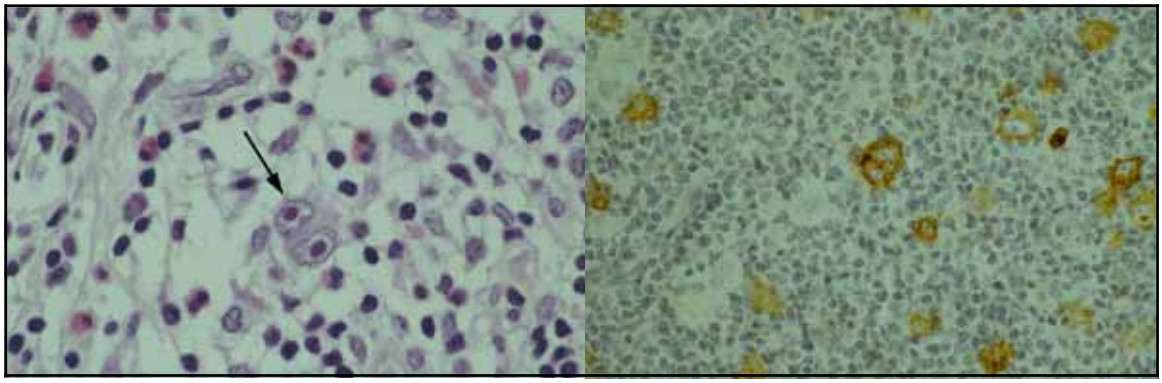


Figure: Left side, classic binucleated Reed-Sternberg cell in a case of Hodgkin's disease (arrow) (H & E x 40), right side, immunohistochemistry with CD30 antibodies highlights the Reed-Sternberg cells (dark brown color).

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 1 (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 (Drs. N Chan, S Joshi and A Castella). A web-based "COM - Case of the Month" series on interesting cases recently diagnosed in the Al Ain Medical District (AAMD) will be incorporated into the departmental listing under the FMHS website (to appear in 2004). These cases are presented as quizzes and are chosen to illustrate unusual diagnoses seen in Al Jimi and Tawam Hospitals. Classical pathological features and well as explanations with relevant recent publications are presented. In the future, a discussion forum and perhaps a monthly contest for the correct diagnosis of COM will be initiated.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Agarwal MM, Punnose J, Dhatt GS. (2004). Gestational Diabetes: implications of variation in post-partum follow-up criteria, European Journal of Obstetrics & Gynecology and Reproductive Biology, 113; 149-153.

Agarwal MM, Punnose J, Dhatt GS. (2004). Gestational Diabetes: problems associated with the oral glucose tolerance test, Diabetes Research and Clinical Practice, 63; 73-74.

Agarwal MM, Punnose J. (2004). Recent advances in the treatment of gestational diabetes, Expert Opinion on Investigational drugs, 13; 1103-1111.

Chng WJ, Chen J, Lim S, Chong SM, Kueh YK, Lee SH. (2004). Translocation (8;22)
in cold agglutinin disease associated with B-cell lymphoma, Cancer Genet Cytogenet,152(1); 66-9.

Dhatt GS, Agarwal M, Bishawi B. (2004). Evaluation of a glucose meter against analytical quality specifications for hospital use, Clin Chem Acta, 343; 217-221.

Jaafar H, Kristensen J, Zwaan F, Castella A, Gorka W, Berry L, Alizadeh H, Trab F, Branicki F, Hunyady B. (2004). Life-threatening gastrointestinal bleeding related to the treatment of strongyloidiasis hyperinfection in an immunocompromised patient, ORV Hetil, 145(4); 181-5.

Nga ME, Tan SH, Teh M, Koay ES, Chong SM, Putti TC, Salto-Tellez M. (2004). Lymphocytic gastritis-like T cell lymphoma: molecular evidence of an unusual recurrence, J Clin Pathol, 57(11); 1222-4.

Nga ME, Lim GL, Nilsson B, Chan NH. (2004). Successful retrieval of fine-needle aspiration biopsy material from previously stained smears for immunocytochemistry: a novel technique applied to three soft tissue tumors, Mod Pathol, doi:10,1038. 3800356 (online publication).

Tan KB, Chang SA, Soh VC, Thamboo TP, Nilsson B, Chan NH. (2004). Quality indices in a cervicovaginal cytology service: before and after laboratory accreditation, Arch Pathol Lab Med, 128(3); 303-7.

Thamboo TP, Sivaraman P, Chan NH. (2004). Pathologic Quiz Case: An Unsuspected Cause of Nephrotic Syndrome, Arch Pathol Lab Med, 128(5); 593–594.

PROCEEDINGS, CONFERENCE, INVITED LECTURES, WEB SITES AND OTHERS

Agarwal MM. (2004). Trace element profile of DM2 Patients. The Fifth Annual Research Conference at UAE University, Al Ain, UAE; 25-27.

Agarwal MM. (2004). Screening for gestational diabetes mellitus in the United Arab Emirates. Arab-Laboratory Symposium, Dubai, UAE.

Dhatt GS, Agarwal MM. (2004). Gestational diabetes mellitus: implications of analytical performance on the diagnosis. Quality in the spotlight on European medical laboratories, Antwerp.

Dhatt GS, Agarwal MM. (2004). Evaluation of a glucose meter against analytical quality specifications for hospital use. Quality in the spotlight on European medical laboratories, Antwerp.

Chan NH, Aswad S. (2004). Recent Changes in Nomenclature and Management Guidelines in Cervical Smears. Annual Medical Conference, Saqar Hospital, RAK.

Chan NH, Aswad S. (2004). Recent Changes in Nomenclature and Management Guidelines in Cervical Smears. Al Corniche Hospital Thursday Lecture Series, Abu Dhabi.

Chan NH, Aswad S. (2004). Recent Changes in Nomenclature and Management Guidelines in Cervical Smears. Emirates Pathology Society Meeting, Rotana Hotel, Al Ain.

Chan NH, Aswad S. (2004). Recent Changes in Nomenclature and Management Guidelines in Cervical Smears. Obstetric and Gynecology Society of Dubai, Dubai.

Chan N. (2004). Interstitial Nephritis, SG Experience. Emirates Pathology Society Meeting, Dubai Medical College.

Chan NH, Castella A**.** (2004). Langerhans Cell Granulomatosis (LCG) – Etiology, Pathogenesis and Report of a case in Al Ain. Emirates Pathology Society Meeting, Rotana Hotel, Al Ain.

Chan NH, Castella A. (2004). Lymphomatoid Granulomatosis (LYG) – Etiology, Pathogenesis and Report of a case. Emirates Pathology Society Meeting, Dubai Medical College.

Chan NH. (2004). Concensus Conference, National Workshop for Cervical Cancer prevention and control in the UAE, Abu Dhabi.

Al-Salam S. (2004). The role P53 in colorectal tumors. 5th Pan Arab Gastroenterology Conference, Sharja, Dubai, United Arab Emirates.

Al-Salam S. (2004). Recent Advances in the diagnosis of colorectal tumors. Al-Dhed Hospital conference, Sharja, United Arab Emirates.

Department of Pharmacology

Prof G Petroianu	Professor, Chairman	**Central Facilities**	
Prof A Adem	Professor		
Dr MY Hasan	Associate Professor	**Dr M Kosanovic**	Chief Technician
Dr S Bastaki	Associate Professor	**Mr R Sheen**	Senior Technician
Dr S Attoub	Assistant Professor	**Dr M Al sultan**	Veterinarian (Animal House)
Dr I Chandranath	General Technician	**Mr M Shafiullah**	Technician(Animal House)
Ms K Arafat	General Technician	**Mr M Elwasila**	Technician(Animal House)
Mr SM Nurulain	General Technician		
Ms S Duncan	Secretary		

Tel: 7672000 / Fax: 7672033 / http://www.fmhs.uaeu.ac.ae/Departments/Pharmacology

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.

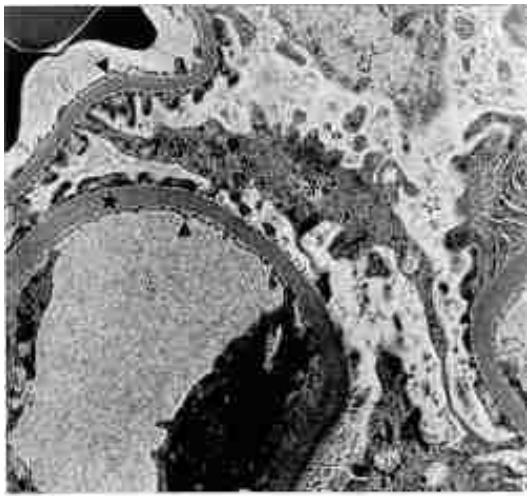


Figure 1

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, 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

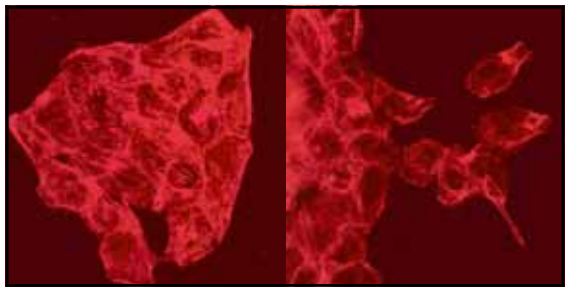
Therapy of acute poisoning, organo phosphates

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

Signal transducer and Activator of Transcription 3 (STAT3) and metastasis

Cancers present overexpression and constitutive activation of several signaling pathways including the phosphatidylinositol 3-kinase and STAT3 which are implicated in cell survival, proliferation, invasion and metastasis. We demonstrated that disruption of the STAT3 transcription pathway by expression of the STAT3-Y705F mutant induced scattering (Fig) motility and invasion in colonic HCT8/S11 and kidney MDCK ts-src cancer cells through alterations in the E-cadherin/ ß-catenin-based tumor invasion suppressor complexes. Our data imply that both invasion promoter and repressor genes are controlled by the STAT3 transcription pathways and identified STAT3 as a new cancer therapeutic target.



MDCK ts-src MDCK ts-src/ STAT3-Y705F

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Alshuaib WB, Hasan M, Cherian SP, Fahim MA. (2004). Increased calcium influx through acetylcholine receptors in dunce neurons. Int J Neurosci 114(1): 115-128.

Alshuaib WB, Mathew MV, Hasan MY, Fahim MA. (2004). PKC-A differentially affects rutabaga and wild-type Drosophila neuronal potassium current Int J Neurosci., 114(5):607-621.

El-Bakri NK, Islam A, Suliman I, Lindgren U, Winblad B, Adem A. (2004). Ovariectomy and gonadal hormone treatment: effects on insulin-like growth factor-1 receptors in the rat brain. Growth Horm IGF Res., Oct;14 (5):388-93.

El-Bakri NK, Islam A, Zhu S, Elhassan A, Mohammed A, Winblad B, Adem A. (2004). Effects of estrogen and progesterone treatment on rat hippocampal NMDA receptors: relationship to Morris water maze performance. Cell Mol Med., Oct-Dec;8(4):537-44.

Hasan MY, Alshuaib WB, Adem A, Singh S, Fahim MA. (2004). a-Tocopherol modifies lead induced functional changes at murine neuromuscular junction. Free Radical Research, 38:12, 1321-1328.

Hasan MY, Kosanovic M, Fahim MA, Adem A, Petroianu G. (2004). Trace metal profiles in hair samples from children in urban and rural regions of the United Arab Emirates. Veterinary and Human Toxicology, 46(3): 199-121.

Hasan MY, Nurulain SM, Arafat K, Naseer OP, Petroianu GA. (2004). *In-vivo* metoclopramide protection of cholinesterase from paraoxon inhibition: direct comparison with pralidoxime in sub-chronic low dose exposure. J Appl Toxicol 24: 257-260.

Mensah-Brown EP, Rizk DE, Patel M, Chandranath SI, Adem A. (2004). Effects of ovariectomy and hormone replacement on submucosal collagen and blood vessels of the anal canal of rats. Colorectal Dis., Nov;6 (6):481-7.

Obineche EN, Adeghate E, Chandranath Is, Benedict S, Al Gafri LS, Adem A. (2004). Alterations in atrial natri-

uretic peptide and its receptors in streptozotocin-induced diabetic rat kidneys. Mol Cell Biochem. Jun;261 (1-2):3-8.

Olianas MC, Adem A, Karlsson E, Onali P. (2004). Action of the muscarinic toxin MT7 on agonist-bound muscarinic M1 receptors. Eur J Pharmacol, Mar 8;487 (1-3):65-72.

Petroianu GA, Kuehn F, Thyes C, Ewald V, Missler A, (2004). In vitro protection of plasma cholinesterases by metoclopramide from inhibition by mipafox. J Appl Toxicol, 24:143-146.

Petroianu GA, Kosanovic M, Shehatta IS, Mahgoub B, Saleh AM, Maleck WH (2004). Green coconut water (GCW) for intravenous use: Trace and minor element content. J Trace Elements Experiment Med, 17: 273-282.

Petroianu GA, Missler A, Zuleger K, Thyes C, Ewald V, Maleck WH. (2004). Enzyme Reactivator Treatment in Organophosphate Exposure: The Clinical Relevance of Thiocholine-Esteratic Activity of Pralidoxime. J Appl Toxicol, 24: 429-435.

Rivat, De Wever O, Bruyneel E, Mareel M, Gespach C and Attoub S. (2004). Disruption of STAT3 signaling leads to tumor cell invasion through alterations of homotypic cell-cell adhesion complexes. Oncogene, 23, 3317-3327.

Schmitt A, Wilkzek K, Blennow K, Maras A, Jatzko A, Petroianu G, Brauss DF, Gattaz WF. (2004). Altered thalamic membrane phospholipids in schizophrenia: A post-mortem study. Biological Psychiatry, 56: 41-45.

Zhu W, Mix E, Nennesm I, Adem A, Zhu J. (2004). Anti-cytokine autoantibodies in experimental autoimmune neuritis in Le rats. Exp Neurol. Dec; 190(2): 486-94.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Emami S, Rodrigues S, Rodrigue CM, Le Floch N, Rivat C, and Attoub S, Bruyneel E and C Gespach. (2004). Trefoil factors family (TFFs) peptides and cancer progression. PEPTIDES, 25 (5): 885-898.

Petroianu G. (2004). Chronic Idiopathic Singultus: is there life after cisapride? (letter) NZ Med J. http://www.nzma.org.nz/journal/117-1188/756/

Petroianu G, Maleck W. (2004). Detection of an esophageal intubation: a Bayesian approach (2004). Middle E J Emerg Med, 4: 35 – 46.

Petroianu G. (2004). Out of Hospital Analgesia: A Pharmacology Review. Middle E J Emerg Med, 4: 30 – 34.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Newson-Smith M, Hasan MY, Arafat K, Kosanovic M, Nurulain S, Schafiulah M, Nasser O. (2004). RBC-Cholinesterase activity is not a reliable marker for low-dose long-term organophosphate exposure. Clin Pharmacol Therapeutics, 75: P43.

Petroianu G, Adeghate E, Hasan MY, Saleh A, Kossanovic M, Ponery AS. (2004). Intraperitoneal exposure to captopril but not to lisinopril activates the peroxisome proliferator activated receptor (PPAR). Clin Experiment Pharmacol Physiol, 31 (Suppl 1): A100.

Petroianu G, Hassan MY, Nurulain SM, Arafat K, Naseer O. (2004). In vivo protection of RBC-cholinesterase (RBC-ACHE) from inhibition by paraoxon: Ranitidine (RAN) vs. Pralidoxime (PRX). J Clin Pharmacol, 44: 1188.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Adem A, Ali-Saleh AM, Mensah-Brown EPK, Galadari S, Vijayasarathy C, El Huda MN, Obineche EN. (2004). Apoptotic pathways in diabetic nephropathy. 2004. European Renal Association, European Dialysis and Transplant Assoication. Lisbon/Portugal.

Adem A, Mulugeta E, Chandranath SI, Karlsson E, Winblad B. (2004). Temporal and region-dependent changes in muscarinic M4 receptors in the hippocampus of adrenalectomized rats. 4th Forum of European Neuroscience. Lisbon/Portugal.

Adem A. (2004). Streptozotocin induced diabetic rat kidneys: Changes in atrial natriuretic peptide and its receptors. The 11th annual workshop on diabetes mellitus and its complications, Al Ain, United Arab Emirates.

Agarwal M, Obineche EN, Kosanovic M, Yasin J, Punnose J, Adem A. (2004). Trace elements profile of Type 2 diabetic patients in the United Arab Emirates. The fifth annual UAE, University Research Conference, Al Ain, United Arab Emirates.

Al-Ramadi BK, Hasan MY, Fahim M, Fernandez-Cabezudo MJ, Adeghate E, Zoubeidin T, Behjat S, Karlsson E, Adem A. (2004). Anti-diabetic herbs: Putative mechanism of action of potential novel anti diabetic drug candidates. The fifth annual UAE, University Research Conference, Al Ain, United Arab Emirates.

Alshuaib WB, Hasan MY, Fahim MA. (2004). Effect of nicotine on calcium homeostasis in CA1 hippocampal neurons during aging. Soc. Neurosci. Abstr., Vol. 30, Program No. 399.19.

Attoub S. (2004). Implication of src and STAT3 oncogenes in colon cancer cell invasion and tumor growth. Servier Pharmaceutical's, France.

Bastaki SMA and Chandranath SI. (2004). Antisecretory and antiulcer activity of a new proton pump inhibitor esomeprazole. Oral presentation at the 5th Pan Arab Gastroenterology Conference in Sharjah, UAE.

Bastaki SMA, Adeyemi E, Chandranath SI, Adem A. (2004). The role of prostaglandin E_2 in the ulcer preventing ability of leptin. BSG Meeting in Glasgow, UK, (Gut, 2004;53, (suppl.111): A-77).

Fahim MA, Alshuaib WB, Hasan MY. (2004). Effect of caffeine on calcium influx in CA1 hippocampal neurons during aging. Soc. Neurosci. Abstr., Vol. 30, Program No. 399.20.

Fahim MA, Hasan MY, Singh S, Alshuaib WB. (2004). The effects of ascorbic acid and a-tocopherol on nicotine induced platelet aggregation in cerebral microcirculation. Experimental Biology, Washington DC, Abst No. 1187

Hasan MY, Arafat K, Nurulain SM, Naseer O, Petroianu G. (2004). Ranitidine (RAN) protects in vitro cholinesterases from inhibition by paraoxon (POX). 33rd Annual ACCP Meeting, Phoenix, Arizona. J Clin Pharmacol 44: 1189.

Hasan MY, Galadari S, Fahim M, Fahim A, Adem A. (2004). Biochemical and morphological manifestations in experimental rat model for neurodegeneration. The fifth annual UAE, University Research Conference, Al Ain, United Arab Emirates.

Howarth FC, Adem A, Adeghate EA, Al Alina, Al Bastaki AM, Srour Fr, Hmoudi RO, Ghaleb NA, Chandler NJ, Dobrzynski H. (2004). Distribution of atrial natriuretic peptide and its effects on contraction and intracellular Ca^{2+} in ventricular myocytes from streptozotocin-induced diabetic rat, The Physiological Society, King's College, London, 51P-52P, C100.

Kossanovic M, Hasan MY, Petroianu G, Adem A. (2004). Trace metal profiles in hair samples from children living in urban and rural regions of the UAE. Dubai International Conference on Atmospheric Pollution.

Mulugeta E, Fahim MA, Hasan MY, El-Bakri N, Winblad B, Karlsson E, Adem A. (2004). Muscarinic M_4 receptor changes in the hippocampus and entorhinal cortex of adrenalectomized rats. Experimental Biology, Washington DC, Abst No. 1190

Petroianu G, Adeghate E, Hasan MY, Saleh A, Kossanovic M, Ponery AS. (2004). Intraperitoneal exposure to captopril but not to lisinopril activates the peroxisome proliferator activated receptor (PPAR). UAE University Fifth Annual Research Conference, Al Ain.

Petroianu G. (2004). Detection of an esophageal intubation: a Bayesian approach. Second Qatar International Trauma Care, Disaster & Emergency Medicine Conference. Doha, Qatar.

Petroianu G. (2004). Ko-Analgetika: Antidepressiva, Antikonvulsiva, Myotonolytika, Akademie für Ärztliche Fortbildung und Weiterbildung Landesärztekammer Hessen: Spezielle Schmerztherapie.

Petroianu G. (2004). New drugs and formulations in OPD, Third Annual Workshop in Asthma, Allergy & Pulmonology, Asthma & Allergy Research Group: Emirates Respiratory Society. Al Ain, UAE.

Petroianu G. (2004). Out of Hospital Analgesia: A Pharmacology Review. Second Qatar International Trauma Care, Disaster & Emergency Medicine Conference. Doha, Qatar.

Petroianu G. (2004). Opioidanalgetika in der Schmerztherapie, Akademie für Ärztliche Fortbildung und Weiterbildung Landesärztekammer Hessen: Spezielle Schmerztherapie.

Petroianu G. (2004). Second Annual Workshop on Pain Therapy, Pain Therapy Research Group, AL Ain, UAE. Chairman of the Organizing Committee.

Rodrigues S, Rivat C, Le Floch N, Attoub S, Emami S, Bruyneel E, Brake M, and Gespach C. (2004). Differential signaling by TFF1 and TFF3 in human colorectal and kidney cancer cells. Fourth International Conference on Trefoil Factors, Illkirch, France, December 2-5.

Drug updates

Drug Update: Bastaki SMA. (2004). [Aciclovir and valaciclovir-report of toxicity, allopurinol-adverse reactions include fatal aplastic anaemia, bleomycin-vascular complications, bupropion- early predictions of adverse drug reactions, citirazine-serious liver disorders---------] Em Med J, 22 (1): 83-89

Drug Update: Bastaki SMA. (2004). [Nefazodone-risk of severe liver injury, NSAIDS-risk of lower gastrointestinal tract damage, Omeprazole-iron deficiency anaemia, Pramipexole and ropinirole-sleep attacks, Propofol-warning against heart failure, ranitidine-serious haemolytic anaemia, Rosiglitazone-hepatic and cardiovascular adverse drug reactions, sildenafil------] Em Med J, 22 (2): 165-170

Drug Update: Bastaki SMA. (2004). [Traztuzumab-avoid anthracyclines for 22 weeks following therapy, Sumatriptan and other triptans-mesentric ischaemia, clopidogrel-interactions with medicine, itraconazole-use during pregnancy---]. Em Med J, 22 (3): 261-268.

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Prof A Adem
Effects of volume-depletion on Insulin-like growth factor-1 (IGF-1) and its receptor in the one-humped camel (Camelus dromedarius)

Dr MY Hasan
The role of antioxidants in modulating lead induced neurotoxicity

Prof G Petroianu
PPAR activating effect of ACE Inhibitors

UAE University Grants - 2004

Prof A Adem (2004-2005)
Mechanisms of neuronal cell death in the hippocampus after bilateral adrenalectomy.

Prof A Adem (2004-2006)
In vitro and In vivo animal studies of Nigella sativa extract as an antioxidant in petrochemical pollutant induced oxidative stress.

Dr MY Hasan
Biochemical and neuropathological mechanisms of toxin induced Parkinson's disease.

Prof G Petroianu
Novel therapy of organophosphate compounds (OPC) intoxication using the benzamide derivative SULPIRIDE: Alternatives to oxime enzyme reactivators

Hamdan Award Medical Research Grant – 2004

Prof A Adem (2004-2006)
Effects of Volume-Depletion on Neurohormones in the Camel.

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

Tel: 7672000 / Fax: 7671966 / http://www.fmhs.uaeu.ac.ae/Departments/Physiology

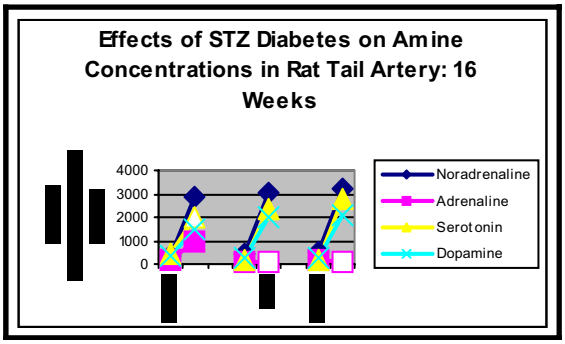
RESEARCH PROFILE

Members of Staff of the Physiology Department have interests in neuroscience and muscle (including skeletal, cardiac and smooth muscle). The experimental work includes normal physiology as well as 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 a length-dependent changes in noradrenaline and other amines in the sympathetic nervous system. The long nerve fibres of the sympathetic nervous system show an 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.



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 electronmicroscopy 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 susceptibilty 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 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 intramuscle 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.

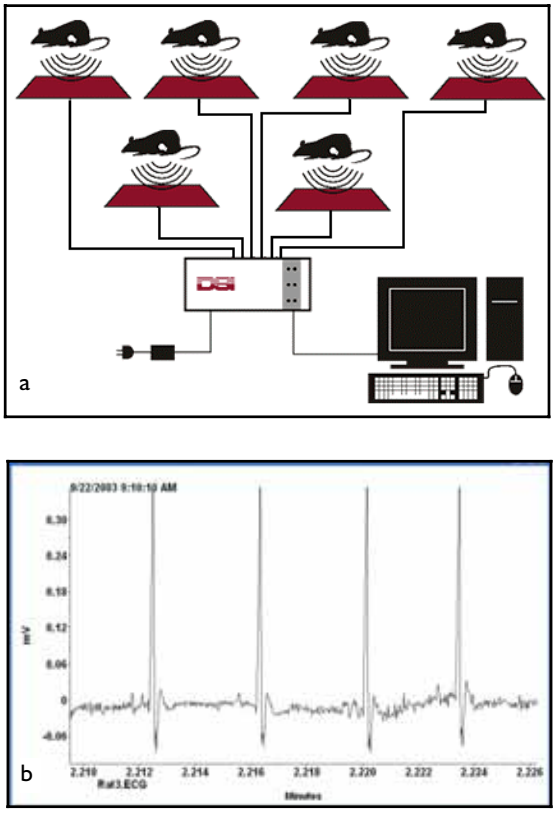


Figure 1:Telemetry system (a) and typical ECG data (b)

Telemetry data can provide the basis for further detailed 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).

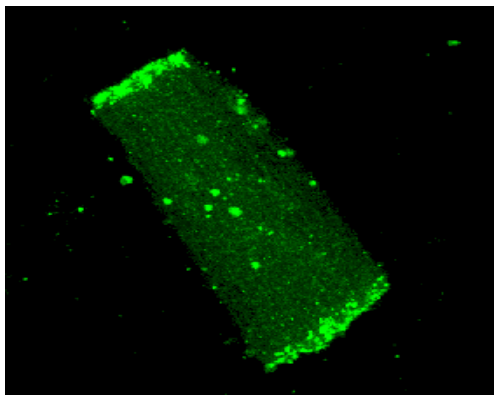


Figure 2 : Connexin-43 labeling in a rat ventricular myocyte. Labeling is particularly obvious at the ends of the cell.

SMOOTH MUSCLE MAPPING

Smooth muscle studies have continued in the mapping lab as in previous years with the emphasis on mapping the propagation of electrical impulses in smooth muscle organs, especially in the small intestine. In addition, motility mapping was further improved and several studies (in rabbit and mice isolated small intestines) were performed in which both electrical and motility mapping were combined. As before, several collaborators from abroad spent time working in the lab on joint projects. Dr T Seerden (Dept of Gastroenterology, University of Antwerp, Belgium) used a mini-electrode row of 16 electrodes (length of 5.5 mm) to discover a new type of contraction in the murine small intestine. Professor K Gharzouli (Dept of Biology, University of Setif, Algeria) worked on the isolated rabbit ileum to map the propagation of the peristaltic reflex and discovered that this propagation is regularly interrupted by 1-3 seconds delays, possibly caused by a phase delay between slow wave and peristaltic propagations. Often forgotten in this work is the fact that electrodes have to be developed and constructed to make this research possible.

Thanks to the dedication of Mr Wahab, Mr Dhanasekaran and Mrs Stephen, several electrode arrays have been designed and constructed as illustrated in the following figures. A current catalogue of our electrodes can be seen at www.smoothmap.org.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Alshuaib WB, Hasan MY, Cherian SP, Fahim MA. (2004). Increased calcium influx through acetylcholine receptors in dunce neurons. Int J of Neuroscience, 114: 161-174.

Alshuaib WB, Mathew MV, Fahim MA, Hasan MY. (2004). PKC-A Differentially Affects rutabaga and Wild-Type Drosophila Neuronal Potassium Current. Int J of Neuroscience, 114: 665-679.

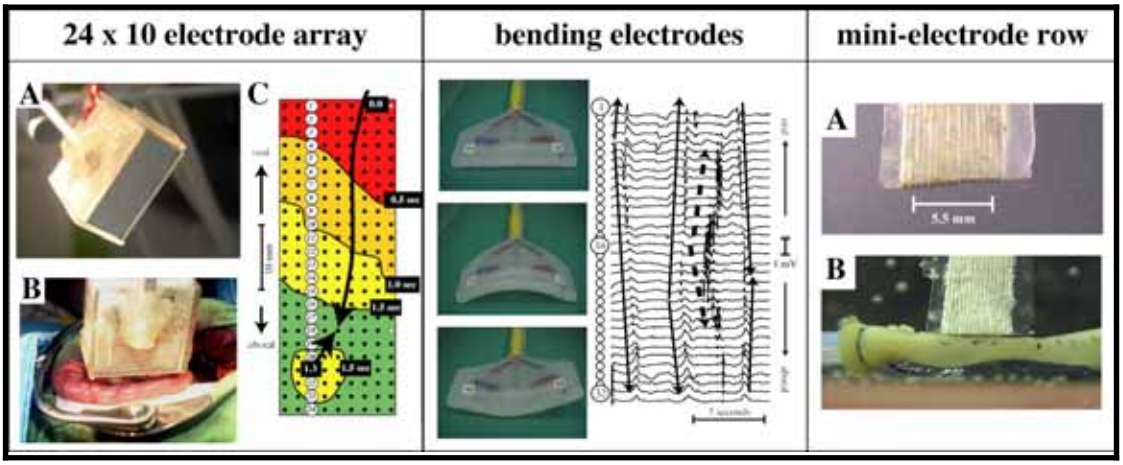
Bracken N, Woodall A, Howarth FC, Singh J. (2004). Voltage-dependence of contraction in streptozotocin-induced diabetic ventricular myocytes, Molecular and Cellular Biochemistry, 261(1): 235-243.

Bjorklund M, Radovanovic S, Ljubisavljevic M, Windhorst U, Johansson H. (2004) Muscle stretch induced modulation of noxiously activated dorsal horn neurons of cat spinal cord. Neuroscience Research, 48: 175-184.

Graham M, Qureshi A, Noueihia R, Harrison S, Howarth FC. (2004). Effects of halothane, isoflurane, sevoflurane and desflurane on contraction of ventricular myocytes from streptozotocin-induced diabetic rats, Molecular and Cellular Biochemistry, 261(1): 209-215.

Hasan MY, Alshuaib WB, Adem A, Singh S, Fahim MA. (2004). a-Tocopherol modifies lead induced functional changes at murine neuromuscular junction. Free Radical Research, 38:12, 1321-1328.

Hasan MY, Kosanovic M, Fahim MA, Adem A, Petroianu G. (2004). Trace metal profiles in hair sam-



Left panel: a 240-electrode array (inter-electrode distance of 2 mm) used for two-dimensional electrical mapping. A: view of the electrode array. B: positioning of the electrode array on top of a selected intestinal loop in an anaesthetized animal. C: reconstruction of slow wave propagation in this segment.

Center panel: Left: Row of 32 electrodes (1 mm inter-electrode distance) that can bend in one or the other direction to follow the curvature of an intestinal loop. Right: examples of slow waves and spike burst recorded from the canine jejunum in vivo.

Right panel: A mini-electrode row of 16 electrodes (inter-electrode distance 350 microns). B: View of the electrode on top of an isolated murine duodenum in a tissue bath. The duodenum here is approximately 2 mm thick.

ples from children in urban and rural regions of the United Arab Emirates. Veterinary and Human Toxicology, 46(3): 199-121.

Howarth FC, Qureshi MA, Adeghate E. (2004). Contraction and intracellular free Ca^{2+} concentrations in ventricular myocytes from rats receiving sucrose-enriched diets, International Journal of Diabetes & Metabolism, 12: 5-9.

Howarth FC, Qureshi MA, Singh J. (2004). Effects of acidosis on ventricular myocyte shortening and intracellular Ca^{2+} in streptozotocin-induced diabetic rats, Molecular and Cellular Biochemistry, 261(1): 227-233.

Kalezic I, Bugaychenko LA, Kostyukov AI, Pilyavskii AI, Ljubisavljevic M, Windhorst U, Johansson H. (2004) Fatigue-related depression of the feline monosynaptic gastrocnemius-soleus reflex. Journal of Physiology. 556: 283-296.

Lammers, Faes C, Stephen B, Bijnens L, Ver Donck L, Schuurkes JAJ. (2004). Spatial determination of successive spike patches in the isolated cat duodenum Neurogastroenterology & Motility 16, 775-783

Mantilla CB, Rowley KL, Fahim MA, Zhan WZ, Sieck GC. (2004). Synaptic vesicle cycling at type-identified diaphragm neuromuscular junctions. Muscle Nerve, (6): 774-83.

Morrison JFB, Dhanasekaran, S, Sheen, R. (2004). The effects of age and STZ-induced diabetes on biogenic amines in the rat tail artery. Molecular and Cellular Biochemistry 261: 77-82.

Rithalia A, Qureshi MA, Howarth FC, Harrison SM. (2004). Effects of halothane on contraction and intracellular Ca^{2+} in ventricular myocytes from streptozotocin-induced diabetic rats, British Journal of Anaesthesia, 92 (2): 246-253.

Rizk EE D, Fahim MA, Hassan HA. (2004). Urogenital atrophy in climacteric women: menopause or geripause? Middle East Journal of FamilyMedicine, 7(7).

Woodall A, Bracken N, Qureshi A, Howarth FC, Singh J. (2004). Halothane alters contractility and Ca^{2+} transport in ventricular myocytes from strepozotocin-induced diabetic rats, Molecular and Cellular Biochemistry, 261(1): 251-261.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Morrison, JFB. (2004). Physiology of the Striated Muscles. In Textbook of the Neurogenic Bladders, edited by J Corcos and E Schick, ISBN 1 84184 206 0. pp 37-55. Published by Martin Dunitz, New York.

Sieck GC, Mantilla CB, Fahim MA. (2004). Functional development of respiratory muscles. In Polin R, Fox WW and Abman SH (eds). Fetal and Neonatal Physiology, 3rd edition, XII; 848-863, Saunders, Orlando.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Alshuaib WB, Hasan MY, Fahim MA. (2004). Effect of nocotine on calcium homeostasis in CA1 hippocampal neurons during aging. Society of Neuroscience, 2004, P No. 399.19.

Fahim MA, Alshuaib WB, Hasan MY, (2004). Effect of caffeine on calcium influx in CA1 hippocampal neurons during aging. Society of Neuroscience, 2004, P No. 399.20.

Fahim MA, Hasan MY, Singh S, Alshuaib WB. (2004). The effects of ascorbic acid and a-tocopherol on nicotine induced platelet aggregation in cerebral microcirculation. Experimental Biology, Washington DC, Abst No. 1187

Howarth FC, Adeghate E, Jacobson M, Fatima-Shad K. (2004). Progressive short-term effects of streptozotocin-induced diabetes on electrical activity of the heart, The Physiological Society, University of Glasgow, Journal of Physiology 557P, C13.

Lammers WJEP, Mirghani H, Dhanasekaran S, Stephen B, Wahab A. (2004). Patterns of spike propagation in the intact pregnant guinea-pig uterus. J Soc Gynecologic Investigation 11, 75A.

Lammers WJEP, Mirghani H, Dhanasekaran S, Stephen B, Wahab A. (2004). The initiation of bursts in the intact pregnant guinea-pig uterus. J Soc Gynecologic Investigation 11, 75A.

Lammers WJEP, S Dhanasekaran, B Stephen, A Wahab, JR Slack. (2004). Propagation of the slow wave mapped along the full length of the small intestine. Neurogastroenterology & Motility 16, 846.

Mulugeta E, Fahim MA, Hasan MY, El-Bakri N, Winblad B, Karlsson E, Adem A. (2004). Muscarinic M_4 receptor changes in the hippocampus and entorhinal cortex of adrenalectomized rats. Experimental Biology, Washington DC, Abst No. 1190

Morrison JFB, Mensah-Brown E. (2004). Changes in Amines, NPY and Tyrosine Hydroxylase in the Seminal Vesicle of the STZ-diabetic rat. Proceedings of the Federation of European Neurosciences, Lisbon. A091.5

Morrison JFB, Kibble Alex, Jiang Wen, Namasivayam, S. (2004). Sensory Processing by Bladder Afferents. Annual Conference of the Physiology Society of Southern Africa, A1.1, p 15.

Seerden TC, Lammers WJEP, Stephen B, De Man JG, Pelckmans PA. (2004). Spatio-temporal electrical and motility mapping of propagating oscillations in the murine small intestine. Neurogastroenterology & Motility 16, 864.

Singh S, Fahim MA. (2004). Acute nicotine treatment accelerates photochemically induced platelet aggregation in cerebral arterioles of mice: an in vivo study. 2nd FAONS

Symposium and 3rd Iranian Neuroscience Congress, Tehran, Iran, May 16-19, 2004, p 117.

Singh S, Fahim MA. (2004). In vivo antiplatelet aggregatory activity of *Aloe vera* juice on mice cerebral micro vessels. Iran Journal of Pharmaceutical Research, Supplement 2: 209, 70-70.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Howarth FC, Adem A, Adeghate EA, Al Alina, Al Bastaki AM, Srour Fr, Hmoudi RO, Ghaleb NA, Chandler NJ, Dobrzynski H. (2004). Distribution of atrial natriuretic peptide and its effects on contraction and intracellular Ca^{2+} in ventricular myocytes from streptozotocin-induced diabetic rat, The Physiological Society, King's College, London, 51P-52P, C100.

Howarth FC, Adeghate E, Jacobson M. (2004). Progressive short-term effects of streptozotocin-induced diabetes on electrical activity of the heart, The 5th Annual UAE University Research Conference, MHS 42-46.

Jacobson M, Howarth FC, Adeghate E, Fatima-Shad K. (2004). Telemetry-based data acquisition system for chronic physiological measurement, The 5th Annual UAE University Research Conference, ENG 252-256

Lammers WJEP, Dhanasekaran S, Stephen B, Slack J. (2004). Electrical imaging of slow wave propagation and digital video imaging of contractions in order to determine the mechanism of pendular contractions in the small intestine. First Workshop in Medical Physics at UAE, Dubai, March 2004.

Lammers WJEP, S Dhanasekaran, B Stephen, A Wahab. (2004). Propagation of individual slow waves along the full length of the feline small intestine. American Motility Society. September 2004, Rochester, USA

Lammers WJEP, S Dhanasekaran, B Stephen, JR Slack. (2004). The direction of propagation of the slow wave determines the direction of pendular contractions in the small intestine. UAE Research Day, April 2004.

Ljubisavljevic M, Kacar S, Milanovic S, Svetel M, Kostic VS. (2004) Changes in cortical inhibition during task-specific dystonic contractions in patients with Primary Writing Tremor – A transcranial magnetic stimulation study. The MDS 8th International Congress of Parkinson's Disease and Movement Disorders, Rome, Italy. Movement Disorders, 19: S447, P1310 Suppl. 9.

Ljubisavljevic M. and Qureshi A. (2004) Contractile properties of gastrocnemius muscle in streptozotocin diabetic rats? Effects of ischemia and Neuropeptide-Y. 4th Forum of European Science, July 10-14, Lisbon, Portugal, Poster A166.3 Poster 448.

Radovanovic S, Ljubisavljevic M, Milanovic S, Dragasevic N, Kostic VS, Johansson H (2004) The effects of altered sensory afferent input by muscle vibration and exercise on movement performance accuracy in patients with Complex Regional Pain Syndrome (type I). The MDS 8th International Congress of Parkinson's Disease and Movement Disorders, Rome, Italy. Movement Disorders, 19: S34-S35 P48, Suppl 9.

RESEARCH GRANTS 2004

FMHS Grants

Dr FC Howarth
FMHS Project Grant (NP/04/05) entitled: "Effects of ageing complicated by diabetes on heart function in the streptozotocin-induced rat".

Prof M Fahim
FMHS Project Grant: "The influence of Leptin on rat gastric mucus, growth factor and Pepsinogen I secretion"

Prof W Lammers
Propagation of the slow wave through the entire length of the feline small intestine.

Dr M Ljubisavljevic
A model of chronic muscle pain associated with low-intensity muscle work and altered muscle sympathetic tone.

Prof J Morrison
The spread of electrical activity in normal and denervated detrusor smooth muscle.

UAE University Grants - 2004

Dr FC Howarth (2003-2005)
Mechanisms underlying the progressive long-term effects of type 2 diabetes on heart muscle function.

Prof M Fahim (2003-2004)
Effects of ageing versus ovariectomy on pelvic floor function in a female rat model.

Hamdan Award Medical Research Grant /2004

Prof W Lammers
Mapping the mechanism of birth.

Others

PI: Konrad Schulze; W Lammers Co-investigator
Mechanics of stomach and intestine
VA Merit Review Grant, USA

Department of Psychiatry

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

** *President, Arabian Gulf University, Bahrain.*
* *Joint Appointments with the Dept. of Psychology, Faculty of Humanities and Social Sciences.*

Tel: 7672000 / Fax: 7672995 / http://www.fmhs.uaeu.ac.ae/Departments/Psychiatry

RESEARCH PROFILE

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

(a) Developmental and behavioural problems in school children in the UAE (in collaboration with School Health Department).

(b) Cognitive functioning among type 2 diabetic patients: A primary care controlled study.

(c) Eating attitudes and disorder among adolescents in the UAE.

(d) Child psychiatric disorders in primary care.

(e) First-episode psychosis presenting at the psychiatric department of Al-Ain Hospital.

(f) A study on the primary care referrals to the psychiatric department of Al-Ain Hospital.

2. Personality, psychosocial and transcultural aspects of physical illness

(a) Psychosocial aspects of chronic physical illness in children.

(b) Personality disorders and personality traits among type 2 diabetic patients: Association with blood glucose control.

3. Cultural aspects of psychiatry

Help seeking behaviour of psychiatric patients before attending the psychiatric services at Al-Ain Hospital.

4. Psychiatric Genetics

(a) Family and phenomenological aspects of Obsessive Compulsive Disorder in collaboration with Obsessive Compulsive Foundation Genetics Collaborative and Neurodevelopmental Genetic Unit, Harvard, USA.

(b) A study examining the genetic aspects of nocturnal enuresis in collaboration with the Department of Biochemistry and Medical Genetics, Sultan Qaboos University, Muscat.

(c) "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).

(d) "Subtelomeric chromosome rearrangements in children with unexplained mental retardation 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) Cross-cultural validation of Harter's Self-Perception Profile.

(c) School Mental Health Screening Questionnaire.

(d) Primary Health Questionnaire (a multi-centre study involving UAE, Jordan and India).

6. Family and phenomenological study on Tourette Syndrome

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

ORIGINAL ARTICLES IN PEER REVIEWED JOURNALS

Bener A, El-Rufaie OF, Siyam A, Abuzeid MSO, Toth F, Lovasz G. (2004). Epidemiology of low back pain in the United Arab Emirates. APLAR Journal of Rheumatology 7;189-195.

Eapen V, Ghubash R. (2004). Mental Health Problems in children and Help seeking patterns in the U.A.E. Psychological Reports 94; 663-667.

Eapen V, Fox-Hiley P, Banerjee S, Robertson MM. (2004). Tourette's Syndrome: A clinical and psychopathological study in an adult U.K cohort. Acta Neurologica Scandinavica 109(4); 255-260.

Eapen V, Mabruk A. (2004). Hashimoto's thyroiditis in school girls in the United Arab Emirates. Saudi Medical Journal 25(3); 384-386.

Eapen V, Al Sabosy MM, Saeed M, Sabri S. (2004). Child psychiatric disorders in a primary care Arab population. International Journal of Psychiatry in Medicine 34(1); 51-60.

Eapen V, Yunis F, Zoubeidi T, Sabri S. (2004). Problem Behaviours among 3 year old children in the United Arab Emirates. Journal of Pediatric Health Care 18(4);186-191.

Eapen V, Al Sabosy MM, Saeed M, Sabri S. (2004). Children with psychiatric disorders: The hidden morbidity. Acta Psychiatrica Scandinavica (S); 421 (110);10.

Eapen V, Zoubeidi T, Yunis F. (2004). Screening for Language Delay in the United Arab Emirates. Child: Care, Health and Development 30(5); 541-549.

Ghubash R, El-Rufaie O, Zoubeidi T, Al-Shboul QM, Sabri SM. (2004). Profile of mental disorders among the elderly United Arab Emirates population: sociodemographic correlates. International Journal of Geriatric Psychiatry 19; 344-351.

Manjula M, Prasadarao PS, Kumariah V, Mishra H, Raguram R. (2004). Sexual dysfunction in single males: a perspective from India, Journal of Clinical Psychology, 59; 701-713.

Raguram R, Raghu TM, Weiss M. (2004). Stigma and the cultural epidemiology of schizophrenia. Journal of Nervous and Mental Diseases 192; 734-744.

Raguram R, Weiss M. (2004). Stigma and somatisation, British Journal of Psychiatry 185; 174-175.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Eapen V. (2004). Child Psychology and Psychiatry: An Introduction by David Skuse Ed. The Medicine Publishing Company, Oxfordshire, UK, 2003. Book review in Emirates Medical Journal 22(2):181.

Eapen V, Robertson MM. (2004). Obsessive Compulsive Disorder and Self Injurious Behaviour. In Handbook of Tourette Syndrome 2nd Edn, Eds Kurlan R., Wiley publications, New York .

Raguram R. (2004). On delusions and depersonalization. OSCEs in Psychiatry. Ed Michael A, Churchill Livingstone, London.

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Eapen V, Ghubash R, Salem MO, Sabri S. (2004). Childhood Shyness and Maternal Social Phobia: A Model for gene- environment interaction? 5th Annual Research Conference of the UAE University, Al Ain, UAE, 25-27 April.

Eapen V. (2004). Children with psychiatric disorders: The hidden morbidity. 12th Symposium of the Association of European Psychiatry, Mannheim, Germany, 23-26 June.

Eapen V. (2004). Psychosocial aspects of childhood cancer survival. Annual meeting of the Royal College of

psychiatrists, Harrogate, UK, 6-9 July.

Eapen V. (2004). Delirium. CME Workshop on Psychiatric Emergencies, organized by Ministry of Health, Al Ain Medical District, Al-Ain.

Eapen V. (2004). Organized and presented a series of seminars for the 1st Workshop on National Mental Health Screening Initiative: Evaluation of One Year Experience. Organised by Department of School Health, Al-Ain and Department of Psychiatry, Faculty of Medicine and Health Sciences, UAE University, Al-Ain, 2 June.

Eapen V. (2004). Organized and presented a series of seminars for the 2nd Workshop on National Mental Health Screening Initiative: Evaluation of One Year Experience. Organised by Department of School Health, Al-Ain and Department of Psychiatry, Faculty of Medicine and Health Sciences, UAE University, Al-Ain, 1 December.

Eapen V. (2004). Epidemiological study of developmental and behavioural disorders in three year old children: A UAE study. The 3rd Dubai International Conference for Medical Sciences, Dubai, UAE, 14-16 December.

El-Rufaie O. (2004). Profile of psychiatric morbidity among the UAE elderly population. Royal Australian and New Zealand College of Psychiatrists 39th Congress, Christchurch Convention Centre, New Zealand, 10 – 13 May.

El-Rufaie O. (2004). Chaired the Organization Committee, and The Panel Discussion Session of the CME workshop on 'Depression in Primary Care', organised by the Department of Psychiatry and Primary Health Care, Al-Ain Medical District, FMHS, Al-Ain, 16 December.

Meguid A. (2004). Delirium. Ras Al Khaimah Medical Update Conference. Ras Al Khaimah, 24 – 27 February.

Meguid A. (2004). Academy of Psychosomatic Medicine Annual Meeting, Florida, USA, 17 – 21 November.

Meguid A. (2004). Depression in the Medically Ill. CME Workshop on Depression in Primary Care, organized by Division of Primary Health Care, Al Ain Medical District and Department of Psychiatry, Faculty of Medicine and Health Sciences, UAE University, Al-Ain, 16 December.

Osman OT. (2004). Using Structured Assessment Scales as a tool to enhance diagnostic skills in psychiatry: The MINI International Neuropsychiatric Interview. 4th GCC Medical Eduction Conference, Al-Ain, 28 – 30 November.

Osman OT. (2004). Pharmacological management of depression CME Workshop on Depression in Primary Care, organized by Division of Primary Health Care, Al Ain Medical District and Department of Psychiatry, Faculty of Medicine and Health Sciences, UAE University, Al-Ain, 16 December.

Raguram R. (2004). Assessment and management of the suicidal patient. CME Workshop on Psychiatric Emergencies, organized by Ministry of Health, Al Ain Medical District, Al-Ain.

Raguram R. (2004). Why do I feel so sad, doctor: An enquiry into illness experiences of depressed patients. 5th Annual Research Conference of the UAE University, Al Ain.

Raguram R. (2004). Depression and medical illness, CME Program, Department of Health, Al Ain Medical District, Al-Ain.

Raguram R. (2004). Presentation and assessment of depression in primary care. CME Workshop on Depression in Primary Care, organized by Division of Primary Health Care, Al Ain Medical District and Department of Psychiatry, Faculty of Medicine and Health Sciences, UAE University, Al-Ain, 16 December.

Sayed M, Al-Darmaki F. (2004). Practicing Polymorphisim in Traditional Gender-Role Emirates: conflicts and challenges presented at symposium 'Learning from International Psychologists about Feminism and Social Justice. American Psychological Association, 112th Annual Convention, Honolulu, Hawaii, USA, 28 July.

Sayed M. (2003). Arab Conceptualization of Mental Health and Contemporary Treatment Practices. Topeka Psychonalytical Society, Topeka, Kansas, USA, 6 August.

Sayed M. (2004). Jin and Psychiatric Illness: A debate. FMHS, 26 October.

Sayed M. (2004). Depression among women: Prevalence, Treatment approaches and Cultural aspects. Hayatuha (her wife) TV, Dubai TV, 6 December.

RESEARCH GRANTS - 2004

UAE University Grants

Dr OT Osman
Prevalence and Functional Morbidity of the Premenstrual Dysphoric Disorder among Adult Women Patients in Al-Ain Primary Care Settings

Terry Fox Cancer Research Grant

Dr V Eapen (2001– 2004)
Familial and psychosocial aspects of paediatric cancer: Influence on compliance, coping and recovery

Departmental Grants

The department obtained Dhs.10,000 as departmental grant at the rate of Dhs.5000 each for 2 faculty members and most of the money was spent towards casual labours on the following two projects:

1) Cognitive Function Among Type II Diabetic Patients (Omer El-Rufaie).

2) Attitudes, Awareness and Family Coping in Children with Physical Illness: A controlled study (Valsa Eapen).

Department of Radiology

Prof R Langer	Professor, Acting Chairman
Dr T Al Mansoor	Teaching Assistant
Ms S Al Habsi	Secretary

Tel: 7672000 / Fax: 7670767 / http://www.fmhs.uaeu.ac.ae/Departments/Radiology

RESEARCH PROFILE

Our research is based upon the application of modern imaging modalities in cooperation with clinical and basic sciences FMHS departments and the Radiology department at Al Ain Hospital using the following methods:

- Multislice Computed Tomography [MSCT]
- Magnetic Resonance Imaging [MRI]
- Ultrasound [US]

Together with colleagues from other FMHS departments and colleagues from the teaching hospitals the radiological features of a rare skeletal dysplasia (SWS) and another rare congenital malformation (BSA) were evaluated.

Another issue was the impact of multislice CT (MSCT) on the management of patients with abdominal trauma in collaboration with the FMHS Department of Surgery and colleagues from Al-Ain Hospital, Departments of Radiology and Surgery.

A new research project in cooperation with FMHS departments and different departments of Al-Ain Hospital has recently started, comparing two different imaging protocols for the diagnosis of acute stroke: one 'historical' group, undergoing unenhanced cranial computed tomography (CCT) and a newly established protocol including perfusion CCT and CT – angiography.

Ruth Langer has become a member of the 'Cancer Research Group' and the 'Genetics and Developmental Research Group' in order to participate in inter- and multidisciplinary studies in these fields of research.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Langer R, Al-Gazali LI, Haas D, Raupp P, Varady E. (2004). Osseous Abnormalities and CT Findings in Stueve-Wiedemann-Syndrome (SWS). Fortschr. Roentgenstr. 176: 215-221

Langer R, Al-Gazali LI, Raupp P. (2004). Body stalk anomaly - an extremely rare congenital malformation. Fortschr Roentgenstr. 176: 768-769

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Langer R, Al Gazali L, Haas D, Raupp P, Varady E. (2004). Congenital skeletal malformations in Stuewe-Wiedemann syndrome and follow up examinations. AJR (Suppl)182; 37

Langer R, Al-Gazali LI, Haas D, Raupp P, Varady E. (2004). Radiological and MRI Findings in 'body stalk anomaly'. Fortschr Roentgenstr. (Suppl) 177; 274

Langer R, Raupp P, Varady E. (2004). Congenital Syphilis. A Challenge for the Radiologist. Fortschr. Roentgenstr. (Suppl) 177; 283

Ekelund L, Langer R. (2004). Radiology is a Perfect Tool for PBL. Academic Radiology 11; 480

PROCEEDINGS, CONFERENCES, INVITED LECTURES, WEB SITES AND OTHERS

Langer R. (2004). MRI with super-paramagnetic iron oxide vs. spiral CT for the detection of malignant liver lesions. RSDOM, Berlin, 28. – 30.3.2004.

Langer R, Al Gazali L, Haas D, Raupp P, Varady E (2004). Congenital Skeletal Malformations in SWS and Follow Up Examinations. 104th Annual Meeting of the ARRS, Miami, 2-7.5.2004

UAE University Grants – 2004
Prof R Langer
Comparison of Two Imaging Protocols for Acute Stroke.

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 K Al Mansouri	Assistant Professor	**Mr Abdulla Jamal**	Departmental Secretary
Dr Ali Jawas	Assistant Professor	**Mr C K Aboobacker**	Office Assistant
Dr S Al Thani	Assistant Professor		

Tel: 7672000 / Fax: 7670767 / http://www.fmhs.uaeu.ac.ae/Departments/Surgery

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

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 10 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 Al Ain. 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 remained in Toronto and is undertaking Fellowship training in 'Hand and Joint Replacement Surgery' at the same institution with a view to rejoining the Faculty in Al Ain in January 2006.

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 is also currently completing a Fellowship in Toronto and will join us in Al Ain in July 2005.

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), Dr. Saeed Al Bakir and Dr. Tahira Mahmoud (Ophthalmology). Dr. Abdul Kareem Mohamed Ali Sultan Al Olama acted as the General Conference Coordinator of the Second Scientific Conference for Medical Students in the GCC Countries which was held in Al Ain in January 2004 with the participation of more than 600 students drawn from 32 countries. He was appointed as a Teaching Assistant in the Faculty and following internship initially had wished to pursue a career in cardiac surgery. In January 2005 after an attachment for some months at Sheikh Khalifa Hospital in Abu Dhabi he has now opted for a career in Community Medicine.

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 overseas. Dr. Ali is currently undertaking an attachment at Sheikh Khalifa Medical Centre in Abu Dhabi having completed some training at Tawam Hospital recently.

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 and 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 is currently 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.

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 is developing a course in ethics in 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 instrumented in helping to establish, and now chairs an Al Ain Orthopaedic Group 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 and Tjernstrom and Drs. Torab and Fikri has been members of the Research Advisory Board. 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 Oncology Research Group. 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 the 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.

Dr. Torab is completing studies to evaluate resorption capacity of inflamed peritoneum in the pathogeneses 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 and one of the students also presented the findings, under the supervision of Dr. Torab, at a meeting in Germany in March. 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 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 now received two ultrasound machines donated to the Department of Surgery which are to be used for the detection of free intrabdominal

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

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 accidents.

The Department is also much involved in arrangements for the establishment 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.

Dr. Lunsjo and Prof. Younge are collaborating in studies of patients who have sustained scapular or pelvic fractures. These are coming 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 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. 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.

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.

ORIGINAL PEER-REVIEWED SCIENTIFIC ARTICLES

Abu-Zidan FM, Seösteen A-K, Wang J, al-Ayoubi F, Lennquist S. (2004). Establishment of a teaching animal model for sonographic diagnosis of trauma.
J Trauma 56: 99-104.

Abu-Zidan FM, Mansour T, Al-Rukn S, Bener A. (2004). Behavior of Bicyclists in Al-Ain City, UAE: An observational study. Emirates Medical Journal 22:31-33.

Beger HG, Thorab FC, Liu Z, Harada N, Rau B. (2004). Pathogenesis and treatment of neoplastic diseases of the papilla of Vater: Kaush-Whipple procedure with lymph node dissection in cancer of the papilla of Vater, J Hepatobiliary Pancreat Surg, 11: 232-238.

Hefny AF, Bashir MO, Joshi S, Branicki FJ, Abu-Zidan FM. (2004). Stromal sarcoma of the breast: a case report. Asian J Surg.27:339-41.

Jaafar H, Kristensen J, Zwaan F, Castella A, Gorka W, Berry L, Alizadeh H, Torab F, Branicki F, Hunyady B. (2004). Life-threatening gastrointestinal bleeding related to the treatment of strongyloidiasis hyperinfection in an

immunocompromised patient. Orv Hetil. 145(4): 181-5.
Mehanna D, Abu-Zidan FM, Rao S. (2004). Liver metastasis in renal chondro-sarcoma. Singapore Med J. 45:183-5.

BOOKS, CHAPTERS, REVIEWS AND EDITORIALS

Bashir MO, Abu-Zidan FM, Lennquist S. (2003). Will the damage-control concept influence the principles for setting priorities for severely traumatized patients in disaster situations? International Journal of Disaster Medicine, 2: 97-102.

Dittrich K, Abu-Zidan FM. (2004). Role of Ultrasound in Mass-Casualty Situations. International Journal of Disaster Medicine, 2: 18-23.

PUBLISHED ABSTRACTS, LETTERS, CORRESPONDENCE

Al Ali NA, Srour FR, Obaid R, Ali NAG, Torab FC. (2004). Resorption capacity by inflamed peritoneum of inflammatory mediators in the pathogenesis of systemic sepsis in an acute peritonitis model. Emirates Medical Journal, 22 (1) (Suppl.) :113.

Branicki FJ. (2004). Gastric Cancer – from Minimal Access to Multimodality Therapy Journal of Gastrointestinal Surgery, 8:(Suppl 7): 54A, KY002

Safi F, Beger HG, Branicki F, Torab F. (2004). Treatment of Liver Metastasis (LM) of Colorectal Cancer (CRC). A Comparison between natural history; Regional Chemotherapy and Surgery of the LM. Journal of Gastrointestinal Surgery, 8:(Suppl 7): 127A, FP-216

Torab FC, Beger HG. (2004). The results of using Warren-Cattel anastomosis in soft pancreatic remnant after pancreatic resection for malignant diseases. Journal of Gastrointestinal Surgery (suppl) 8 (7S) p 71A.

Torab FC, Wazz G, El Taji H, Branicki F. (2004). The Role of an Anti-Obesity Surgery Centre in United Arab Emirates. Journal of Gastrointestinal Surgery, 8:(Suppl 7): 72A, FP-30.

Torab FC, Al Ali NA, Srour FR, Obaid R, Ali NAG, F Branicki. (2004). Reduction of the Resorption Capacity of Peritoneum for Inflammatory Mediators with the Increase of Severity and Duration of Peritonitis in Acute Peritonitis Model, Journal of Gastrointestinal Surgery, 8: (Suppl 7): 191A, P-63.

Torab FC, Al Ali NA, Srour FR, Obaid R, Ali NAG, Branicki FJ. (2004). Resorption capacity by inflamed peritoneum of inflammatory mediators in the pathogenesis of systemic sepsis in an acute peritonitis model. Shock (Suppl.) 21: 192.

Torab FC, Al Ali NA, Srour FR, Obaid R, Ali NAG, Branicki FJ. (2004). The primary source of serum interleukin-6 during acute chemical peritonitis: is it peritoneal cavity? European Surgical Research 2004, 36 (Suppl 1): 115.

PROCEEDING CONFERENCES, INVITED LECTURES AND OTHERS

Abu-Zidan FM. (2004). Abdominal TB, Role of Surgeon. Emirates PanArab Gastroenterology Week, 5th PanArab Gastroenterology Conference, 5th Emirates Gastroenterology Conference (Invited Lecture), Sharjah, UAE.

Abu-Zidan F, Shabaan S, Ashour MS, Bashir MO. (2004). Early experience with a local trauma registry, (Oral presentation), Surgery Update, FMHS, Al-Ain.

Abu-Zidan F, Shabaan S, Ashour MS, Bashir MO. (2004). Al-Ain Hosiptal trauma registry. Ras Al-Khaimah Annual Medical Update Conference, (Invited lecture) RAK, UAE

Abu-Zidan F. (2004). Ischaemia-reperfusion injuries. Ras Al-Khaimah Annual Medical Update Conference, (Invited lecture). RAK, UAE

Abu-Zidan F. (2004). Ultrasound in blunt trauma: An update. Ras Al-Khaimah Annual Medical Update Conference, (Invited lecture). RAK, UAE

Abu-Zidan F. (2004). Importance of Statistics in Medical Writing. 2nd regional conference on Medical Journals in the WHO Eastern Mediterranean Region, (Invited lecture), Armed Forces Hospital, Riyadh, Saudi Arabia.

Abu-Zidan F, Shabaan S, Ashour MS, Bashir MO. (2004). Establishment of a Trauma Registry at Al Ain City The Fifth Annual UAE University Research Conference, Al-Ain, UAE

Abu-Zidan FM, Johansen JG, Parmar KA, Rao S. (2004). Horse-related spinal injuries. The Fifth Annual UAE University Research Conference, Al Ain, UAE

Abu-Zidan FM. (2004). Establishment of a Focussed Assessment Sonography for Trauma (FAST) Course. 4th GCC Medical Education Conference, (Poster), FMHS, Al-Ain, UAE.

Almansoori KK, Gonder JR, Tadrous Z, Cane J. (2004). Epiretinal Membrane (ERM) Surgery Outcomes with and without Indocyanine Green (ICG) Assisted Internal Limiting Membrane (ILM) Removal. Retina Society Meeting. Baltimore, MD, US.

Almansoori KK, Gonder JR, Tadrous Z, Cane J. (2004). Epiretinal Membrane (ERM) Surgery Outcomes with and without Indocyanine Green (ICG) Assisted Internal Limiting Membrane (ILM) Removal. (Published on-line at) http://www.retinasociety.org/pdf/70.pdf

Branicki FJ. (2004). Gastric Cancer: Surgical Management, Emirates PanArab Gastroenterology Week, 5th PanArab Gastroenterology Conference, 5th Emirates Gastroenterology Conference (Invited Lecture), Sharjah, UAE.

Branicki FJ. (2004). Multimodality Therapy for Gastric Cancer, 8th Overseas Meeting Royal College of Surgeons In Ireland (Invited Keynote Address), Dubai, UAE.

Branicki FJ. (2004). Intervention for Complicated Peptic Ulcer, 3rd Annual Conference Al Dhaid Hospital (Invited Lecture), Sharjah, UAE.

Branicki FJ. (2004). Gastric cancer: from Minimal Access to Multimodality Therapy, Department of Surgery, Hospital Universiti Kebangsaan Malaysia (Invited Lecture). Kuala Lumpur, Malaysia.

Branicki FJ. (2004). Gastric Cancer: from Minimal access to Multimodality Therapy 19th World Congress of International Society for Digestive Surgery (Invited Keynote Address), Yokohama, Japan.

Branicki FJ. (2004). Minimal Access Surgery for Gastroduodenal Disease, Symposium: Minimally Invasive Surgery. 3rd Dubai International Conference for Medical Sciences (Invited Lecture) Dubai, UAE.

Lunjso K, Abu-Zidan FM. (2004). The role of colostomy in pelvic fractures. Surgery Update, FMHS, UAE University, Al-Ain

Lunsjo K, Olsson O. (2004).Update on the management of extracapsular hip fractures. 5th Tawam Orthopaedic Congress, Al Ain, UAE.

Lunjo K, Shabaan S, Ashour MS, Bashir MO, Abu-Zidan F. (2004). Early experience with a local trauma registry. 2nd Qatar International Trauma Care, Disaster and Emergency Medicine Conference, Doha, Qatar.

Lunsjo K, Abu-Zidan FM. (2004). The role of colostomy in open pelvic fractures. 2nd Qatar International Trauma Care, Disaster and Emergency Medicine Conference, Doha, Qatar.

Lunsjo K, Bengtsson M, Nordqvist A, Hermodsson Y. (2004). Patient satisfaction is high after arthroscopic subacromial decompression for shoulder impingement. Evaluation done before and 6 months post surgery using the disabilities of the arm, shoulder and hand (DASH) questionnaire and the Visual Analog Scale (VAS). 60th Annual Meeting of the Swedish Orthopaedic Association, Gavle, Sweden.

Morris A, Lunsjo K, Czechowski J, Abu-Zidan FM. (2004). Clinical Significance and radiological evaluation of scapular fractures. 5th Tawam Orthopaedic Congress, Al Ain, UAE.

Safi F, Abu-Zidan FM, Torab F, Abdulla J, Branicki F, Al-Mansouri K. (2004). Ideal Education of Surgeons: What should it be? 4th GCC Medical Education Conference, (Poster). FMHS, Al-Ain, UAE.

Safi F. (2004). Postgraduate training in Germany; 2nd GCC Medical Students Conference, FMHS, UAE University, Al Ain, UAE

Safi F. (2004). Liver surgery. PanArab Gastroenterology Week, 5th PanArab Gastroenterology Conference, 5th Emirates Gastroenterology Conference (Invited Lecture), Sharjah, UAE.

Safi F. (2004). Multivisceral resection of advanced colorectal cancer. 8th Overseas Meeting of Royal College of Surgeon in Ireland. Dubai.

Torab F. (2004). Morbid Obesity: What is the solution? Al-Noor Hospital & Abu Dhabi TV program. (Invited Lecture)

Torab F. (2004). Surgical intervention for Morbid Obesity (Arabic), Forum: Obesity in the UAE. (Invited Lecture)

Torab F. (2004). Obesity, risk factors and associated morbidities (Arabic), Forum: Obesity in the UAE. (Invited Lecture).

Torab F. (2004). The primary source of serum interleukin-6 during acute peritonitis: is it the peritoneal cavity? Research Seminar, FMHS, UAE University, Al-Ain, UAE.

Torab F. (2004). New Surgical Treatment in Peritonitis. Emirates PanArab Gastroenterology Week, 5th PanArab Gastroenterology Conference, 5th Emirates Gastroenterology Conference, Sharjah, UAE. (Invited Lecture).

Torab F. (2004). Ethics in Surgical Problems. 8th Overseas Meeting Royal College of Surgeons in Ireland, Dubai, UAE. (Invited Lecture).

Torab F. (2004). New Concepts in the Treatment of Peritonitis, CME Red Cross Hospital, Munich, Germany. (Invited Lecture)

Torab F. (2004). Resorption capacity by inflamed peritoneum of inflammatory mediators in the pathogenesis of systemic sepsis in an acute peritonitis model. 6th World Congress on Trauma, Shock, Inflammation and Sepsis, Munich, Germany.

Torab F. (2004). The primary source of serum interleukin-6 during acute chemical peritonitis: is it the peritoneal cavity. Xxxix Congress of the European Society for Surgical Research, Athens, Greece.

Torab F. (2004). Reduction of the resorption capacity of peritoneum for inflammatory medicators with the increase in severity and duration of peritonitis in acute peritonitis model. 19th World Congress of the International Society for Digestive Surgery, Yokohama, Japan.

Torab F. (2004). The role of anti-obesity surgery centre in the United Arab Emirates. 19th World Congress of the International Society for Digestive Surgery, Yokohama, Japan.

Torab F. (2004). The results of using Warren-Cattel anastomosis in soft pancreatic remnant after pancreatic resection for malignant diseases. 19th World Congress of the International Society for Digestive Surgery, Yokohama, Japan.

Torab F. (2004). Evaluation of the role of resorption capacity of inflamed peritoneum of inflammatory mediators in the pathogenesis of systemic sepsis in acute peritoneal model. 3rd Dubai International Conference for Medical Sciences, Dubai, UAE.

Tjernstrom NO. (2004): Surgical treatment of differentiated thyroid cancer. 8th Overseas Meeting of Royal College of Surgeons in Ireland, Dubai, UAE

Weerasinghe S, Revel A, Mirghani H, Abu-Zidan FM. (2004). Individual and Group Learning Curves for Ultrasound Fetal Biometry. ASUM 34th Scientific Meeting, Sydney, Australia

Weerasinghe S, Revel A, Mirghani H, Abu-Zidan FM. (2004). Individual and Group Learning Curves for Ultrasound Fetal Biometry. Australian Association of OG Ultrasound (AAOGU) Annual Scientific Meeting, Perth, Australia.

Weerasinghe S, Revel A, Mirghani H, Abu-Zidan FM. (2004). Individual and Group Learning Curves for Ultrasound Fetal Biometry. 4th GCC Medical Education Conference, (Poster) FMHS, UAE University, Al Ain, UAE.

Younge D. (2004). Reconstruction after Sarcoma Resection in the Upper Limb Royal College of Surgeons of Ireland, 8th Overseas Meeting, Dubai, UAE

Younge D. (2004). What do you Mean the Pathologist Changed his Mind? Annual Orthopedic Meeting of Tehran University, Tehran, Iran.

Younge D. (2004). The PRUJ-Plasty for the Lost Elbow Joint. Annual Orthopedic Meeting of Tehran University, Tehran, Iran.

Younge D. (2004). The Flip-up Procedure for the Tibia and Femur. Annual Orthopedic Meeting of Tehran University, Tehran, Iran.

Younge D. (2004). The PRUJ-Plasty for the lost elbow joint, Asia Pacific Musculo-skeletal Tumor Society 5th meeting, Izmir, Turkey.

Younge D, (2004). Ilyas I, Rabanni S, Sarcomas of the Foot and Ankle, Annual meeting of the Canadian Orthopedic Association, Calgary, Canada.

Younge D, (2004). The PRUJ-Plasty for the Lost Elbow, The South African Association Annual Meeting, Pretoria, South Africa.

Younge DA, (2004). Sarcomas of the Foot and Ankle, 5th Tawam Orthopedic symposium, Al Ain, UAE.

Younge DA, (2004). "What do you mean, the pathologist changed his mind?"5th Tawam Orthopedic symposium, Al Ain, UAE

Younge DA, (2004). Soft Tissue Sarcomas, Inter-Emirates Orthopedic Meeting, Ras Al Khaimah, UAE.

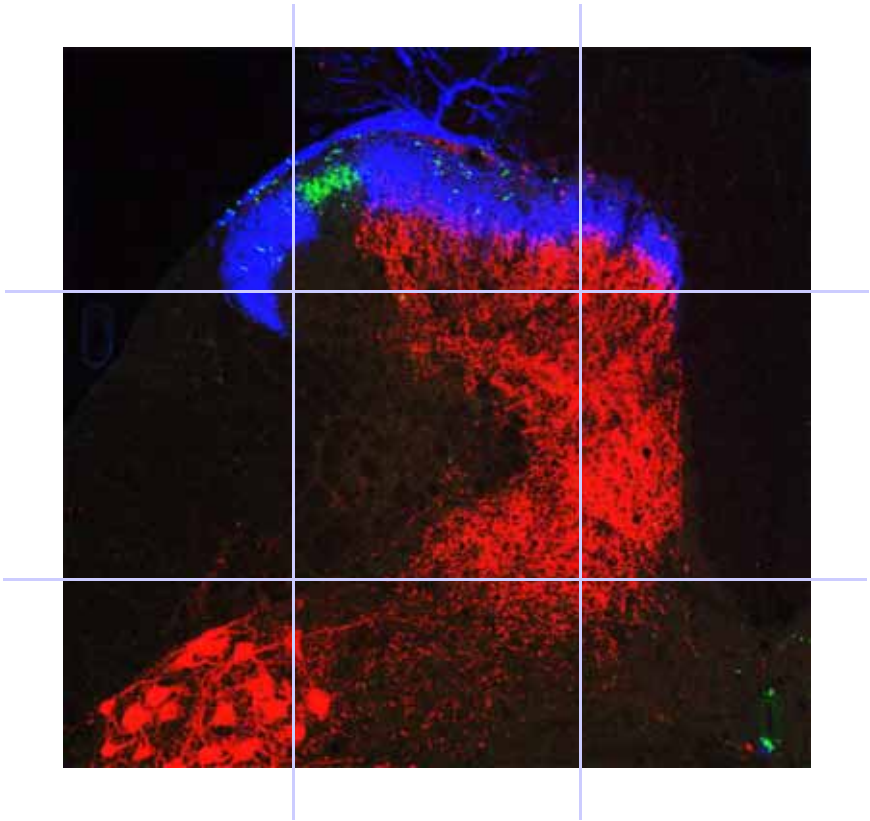
Younge DA, (2004). Limb Salvage Surgery of the Upper Limb, Inter-Emirates Orthopedic Meeting, Abu Dhabi, UAE.

RESEARCH GRANTS 2004

FMHS New Grants awarded in 2004

Dr F Abu Zidan
Establishment of a Nationwide Trauma Registry.

Research Priority Groups



Diabetes and Cardiovascular Research Priority Group. Report 2004

Core Members:

Prof. Enyioma Obineche
Prof. Richard Reed
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

The group organised the 11th Annual Workshop on Diabetes and its Complications in collaboration with the Al Ain Diabetes Research Group and the Emirates Medical Association (Emirates Diabetes Society), and the Emirates Endocrine Society on April 1, 2004 at the Hotel Intercontinental, Al Ain. There were more than 425 participants at this Scientific Meeting with speakers from the UAE, Kuwait and Lebanon. The Workshop was sponsored by Pfizer, MSD, Merck Scientific, Bayer, Servier, Novo Nordisk and others.

Mini Symposia

1. Symposium on Erectile Dysfunction in Diabetes: The DCG organized a scientific meeting on the aetiology, pathogenesis and management of Erectile Dysfunction in Diabetes. This Symposium was held on June 3, 2004 at Mercure Hotel, Jebel Hafeet, Al Ain.

2. Cardiovascular Symposium: The Group also organized a cardiovascular symposium on September 16, 2004 on current developments in the key areas of cardiovascular diseases. Venue?

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. Effects of streptozotocin-induced diabetes on heart rhythm (UAEU Individual Grant).
2. Mechanisms underlying the progressive long-term effects of type 2 diabetes on heart muscle function (UAEU Interdisciplinary Grant).
3. Effects of ageing and ageing complicated by diabetes on heart function in the streptozotocin-induced diabetic rat (FMHS).
4. Effects of single high-dose (SHD) and multiple low-dose streptozotocin (STZ) on contraction and Ca^{2+} transport in ventricular myocytes from MLD-STZ diabetes resistant and susceptible rats (FMHS).
5. The progressive effects of diet-induced diabetes on the structure and function of cardiac muscle in a genetic mouse model of type 2 diabetes (UAEU Individual Grant).
6. Calcitonin-gene-related-peptide: Cellular distribution and effect in the endocrine pancreas of diabetic Zucker rats (FMHS).
7. A Controlled Trial of an Educational Intervention to Improve Care of Diabetes Mellitus in Primary Health Care Centres (FMHS).
8. Diabetic Autonomic Neuropathy (FMHS)
9. Trace Elements in Diabetes (UAEU Interdisciplinary Grant)
10. Effects of ageing complicated by diabetes on heart function in the streptozotocin-induced rat (FMHS).
11. Effect of resistin on the parameters of pancreatic hormones in diabetes mellitus (UAEU Individual Grant).
12. Economic Costs of Diabetes Complications in the UAE (UAEU Individual Grant).
13. Atrial natriuretic peptide and its receptors in rat kidneys: Effect of long-term diabetes mellitus (UAEU Interdisciplinary 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

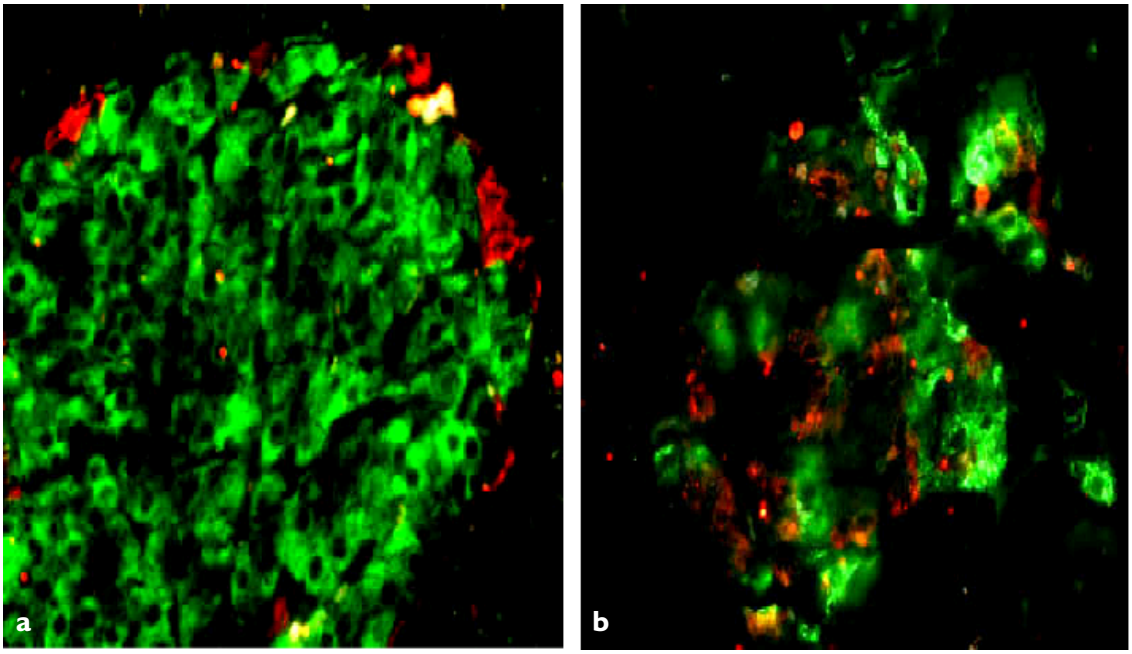
Future plans

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 28 papers in top quality peer-reviewed journals including but not limited to Diabetes, Cellular and Molecular Life Sciences, Pancreas, Diabetes Metabolic Research and Reviews, British Journal of Anesthesia, Molecular and Cellular Biochemistry, European Journal of Obstetrics & Gynecology and Reproductive Biology, Journal of Health Population and Nutrition, Diabetes Research and Clinical Practice, Clinical Chemistry Acta, Neuroendocrinology Letters in 2004. The cumulative impact factors of these journals exceeded 50 (See Departments of Anatomy, Biochemistry, Pathology, Pharmacology, Physiology, Community Medicine, Family Medicine, Internal Medicine and Medical Microbiology for relevant publications.



Localization of Growth hormone secretagogue receptor (GHS)-immunoreactive cells (red) and insulin (INS)-positive cells (green) in the pancreatic islet of normal (a) and diabetic (b) rats. Some cells (orange-yellow) contain both GHS and INS. X400.

Genetics and Development Research Priority Group. Report 2004

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 affecting 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 ΔBromodomain SWI/SNF using restriction enzyme remodeling assays and octamer transfer assays
- Genetic control of DNA packaging

International Meeting

Several papers presented in the International Genetic Congress December 2003 were accepted for publication and is currently in press in a special issue of the international journal " Community Genetics." The special issue is entitled "community Genetics in the Arabian Gulf Region." Members of the group acted as Guest Editors of this issue.

Collaboration with relevant UAE and international groups and organizations

UAE

1) Several collaboration between group members and with other priority groups.
2) Ministry of Health
3) School Health authorities
4) Hamdan Award for Medical Sciences
5) Center for Arab Genomic Study

Regional

Sultan Qaboos University, Muscat, Oman

1) Homozygosity mapping of autosomal recessive disorders in consanguineous families in UAE and Oman population
2) Genetic basis of inherited primary nocturnal enuresis

International

1) International Clearing House for Birth Defect Monitoring System [member]
2) Harvard University
3) University of California, San Diego

Several collaborative research projects with international groups are underway

- Molecular study of Desbuquois syndrome

  Molecular study of Stuve-Wiedemann syndrome

  INSERM; France
- Identification of mutations of citron kinase gene in human microencephalic syndrome, Torino University, Italy
- A clinical and molecular genetic analysis of skeletal dysplasia

  Dygve-Melchoir Clausen

  Department of Genetics, University of Leicester, UK
- A clinical and molecular study of Cohen syndrome

  Genetic study of Gerodermia osteodysplastica

  Department of Genetics, Manchester University, UK
- Family and phenomenological study on Tourette syndrome and obsessive compulsive disorders, Yale Child Center, Yale University , USA and University College London Medical School, London, UK
- Biological and molecular genetic aspects of schizophrenia and affective disorders, Neurogentic Lab, University of California, San Diego, USA
- Phenotype and etiology of Pallister-Hall syndrome and related disorders,

  National Human Genome Research Institute, National Institute of Health, Bethesda, MD 20892, USA
- Autozygosity mapping of AR syndromes in complexly consanguineous families

  Leeds University, Leeds
- Autozygosity mapping and identification of recessive disease genes in consanguineous families

  Birmigham, UK
- Investigation of the genetic causes of cerebellar and hindbrain malformations.

  University of California, San Diego
- Genetic and moleculer study of a new syndrome of macrocephaly, mental retardation and distinctive facies. Harvard Medical School
- Molecular study of Microcephalic Osteodysplastic Primordial Dwarfism

  Germany.
- Family and phenomenological aspects of Obsessive Compulsive Disorder Harvard, USA.

D. Active Grants

1) FMHS Grants:

- Relationship between Epilepsy and Hippocampal Abnormalities in Children.
- Karyotype abnormalities among malformed fetuses detected by ultrasound in multiethnic UAE population.
- Studies of mitochondrial DNA sequences of autistic children from different geographic regions.
- Ochronosis and alcaptonuria.
- Interactions in Diabetes: The effect of Maternal Valproate treatment on Fetal Development in Streptozotocin-induced Diabetes in the Mouse.
- Delineation of Sequences Involved in the Packaging and Dimerization of FIV Genome"
- Interactions between domains in transcriptional activators and histone tails"
- Functional analysis of the chromatin-remodelling complex SWI/SNF"

2) UAE University Grants:

- Pathogenetic mechanisms of craniofacial malformations: Electron. microscopic and immunohistochemical studies on maternal hyperthermia-induced craniofacial abnormalities in rat embryos.
- Vascular disruption sequence in exencephaly and limb reduction malformations in a rat model.
- Diabetes and Pregnancy: Pathogenetic mechanisms of pregnancy failure, preimplantation loss and embryo resorption in streptozotocin-induced diabetes in the mouse.
- Reproductive toxicologic studies on Topiramate in the mouse.

3) Hamdan Award Medical Research Grants:

- Subtelomeric Chromosome re-arrangement in children with unexplained mental retardation in the population of UAE.
- Development of Feline immuno-deficiency virus (FIV)-based self-inactivating vectors and packaging cells lines for potential use in human therapy.

- Studies on the teratogenic mechanisms of vigabatrin.

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

- Reproductive toxicologic studies on Topiramate in the mouse.

- Development of Feline Immunodeficiency Virus (FIV)-Based Self-Inactivating Vectors and Packaging Cell Lines for Potential Use in Human Gene Therapy.

4) Terry Fox Cancer Research Grant

- The Role of Multiple Promoters in the Regulation of Gene Expression by the Mouse Mammary Tumor Virus (MMTV).

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

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

5) Others

- Amino Acid depletion in b thalassemia. Departmental Fund.

Clinical and radiological features of a patient with Stuve-Wiedemann Syndrome, a common autosomal recessive syndrome in the UAE. The facial appearance is characterized by pursing of the mouth. X-ray of the lower limbs shows bowing of the long bones, with internal cortical thickening at the concave site and irregular metaphyses. A founder mutation in the Leukemia Inhibitory Factor Receptor (LIFR), Frameshift insertion (653_654 insT) was found in families from UAE.

Am J Hum Genet 2004, 74: 298-305

Immunoregulation and Infection Research Group. Report 2004

Group Leader	Prof. Norbert Nowotny
Core Members:	Prof. Miodrag L. Lukic
	Prof. Senarath Dissanayake
	Dr. Basel Al-Ramadi
	Dr. Tahir A. Rizvi
	Dr. Tibor Pal
	Dr. Pauline Jumaa
	Dr. Mariam Al-Shamsi
	Prof. Michael Ellis
	Prof. J. Mike Conlon
	Prof. Sayenna A. Uduman
	Dr. Maria J. Fernandez-Cabezudo
	Dr. Jose Joseph
	Dr. Fawaz Chikh Torab

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 both by the Research Priority Group itself and jointly with Prof. Ellis' Infectious Disease Group.

Research Interests of the Members include

- 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)
- 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)
- 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 1 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 bacteraemia (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)
- 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 charcterization 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 immunogenecity 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 2004 twenty-seven original research papers in prestigious peer-reviewed international Journals such as

- Acta Neuropathologica
- Berliner und Münchner Tierärztliche Wochenschrift
- Biochemical and Biophysical Research Communications
- Biochimica et Biophysica Acta – Proteins and Proteomics
- BMC Pulmonary Medicine
- British Journal of Haematology
- Clinical Immunology
- Comparative Biochemistry and Physiology Part C (2)
- Deutsche Medizinische Wochenschrift
- International Immunology
- Journal of Comparative Pathology
- Journal of the American Veterinary Medical Association
- Journal of Hepato-Biliary-Pancreatic Surgery
- Journal of Veterinary Diagnostic Investigation
- Microbes and Infection
- Molecular Immunology (2)
- Orv. Hetil.
- Peptides
- Regulatory Peptides
- Reviews in Medical Microbiology
- Transactions of the Royal Society of Tropical Medicine and Hygiene

- Veterinary Microbiology
- Virology
- Virus Research (2)

Also, several members of the group published in 2004 book chapters, and have been invited speakers at international conferences; they are members of the editorial board of prestigious 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 2004 principal investigators of the following grants:

- FMHS Research Grants: 7
- 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: 4
- GCC Cooperation Grants: 2
- 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 2004, several members of the group were able to attract international speakers to give seminars in the Faculty:

- January 12, 2004:
  Professor Yousef Haik, Department of Mechanical Engineering, College of Engineering, U.A.E. University: "Applications of nanomagnetics in biotechnology"

- January 25, 2004:
  Dr. Mourad Tayebi, MRC Prion Unit and Institute of Neurology, London, U.K.: "Treatment of prion disease: anti-prion-protein antibodies as anti-TSE (transmissible spongiform encephalopathy) agents"

- February 24, 2004:
  Professor Raj Raghupathy, Department of Microbiology, Faculty of Medicine, Consultant Immunologist, Mubarak Al Kabeet Hospital, Kuwait University: "Why did your mother reject you? Cytokines and pregnancy loss"

- March 13, 2004 (seminar jointly organized with the Faculty Neuroscience Group):
  Dr. Tim Roberts, Faculty of Science and Information Technology, University of Newcastle, Australia: "Chronic fatigue syndrome, autism and specific reading retardation: an immunological perspective"

- March 17, 2004:
  Professor Janko Nikoloich-Zugich, Department of Molecular Microbiology and Immunology, Vaccine and Gene Therapy Institute, and the Oregon National Primate Research Center, Oregon Health & Science University: "Cytotoxic T lymphocyte (CTL) response to HSV-1: from induction to senescence"

- March 20, 2004:
  Professor Janko Nikoloich-Zugich, Department of Molecular Microbiology and Immunology, Vaccine and Gene Therapy Institute, and the Oregon National Primate Research Center, Oregon Health & Science University: "Phenotypic, functional and genetic profiles of the aging T-lymphocytes in primates and their dramatic alteration by caloric restriction"

- April 13, 2004:
  Dr. Mohamed H. Osman, Immunobiology Unit, Institute of Child Health, University College London, London, U.K.: "Identification of pattern recognition receptors on human dendritic cells"

- September 28, 2004:
  Dr. John Dewar, Director, MRC Diarrhoeal Pathogens Research Unit, Pretoria, South Africa: "Rotavirus research in Africa: testing of vaccine in South Africa".

In addition, a joint Meeting was held with Professor Ellis' Infectious Disease Group on April 22, 2004 in Dubai with 5 lectures. From the Research Priority Group, Professor Nowotny gave a seminar entitled "*Usutu virus*: an example of a mosquito-borne virus infection emerging in another continent".

Also, several members of the Group gave presentations at the 5th Annual U.A.E. University Research Conference, Al Ain, April 25-27, 2004.

The most time-consuming activity of the Group in 2004 was, however, the preparation of the **International Conference on Emerging Infectious Diseases**, which was held under the Patronage of H.E. Sheikh Nahayan Mabarak Al-Nahayan, Minister of Education, from February 26 to March 01, 2005 in the Intercontinental Resort Al Ain. Fifteen highly distinguished speakers gave keynote presentations on all areas of emerging infectious diseases. A brief report of the Conference is given elsewhere in this booklet.

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

Neuroscience Group. Report for 2004

The Faculty Neuroscience Research Priority Group was established on 18 February 2002.

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
- –Organise 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 2004 the members of the group have presented several abstracts in national and international meetings and a number of publications have resulted from their research efforts. Members of the group have received major research grants from local and international bodies including the prestigious Michael J. Fox Foundation for Parkinson's Research, USA, National Institute of Mental Health (NIMH), USA, Shaikh Hamdan Award for Medical Sciences, Terry Fox Grant, FMHS & UAE University Research Grants.

Several members of the group hold membership in prestigious organizations and serve on the editorial board of international journals and committees. Also the group members collaborate with a number of groups, institutions and organizations within the UAE & abroad.

UAE

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

Abroad

- –Academy of Sciences, St Petersburg, Russia
- –Boston College, MA, USA
- –Conway Institute, Dublin, Ireland
- –Columbia University, NY, USA
- –Harvard Medical School, USA
- –Institut Pasteur de Lille, Cedex, France
- –Imperial College, London
- –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
- –Utrecht Medical Centre, Netherlands

Scientific Meetings and Seminars organised by the group:

Research Seminars in 2004

Research seminars were held in collaboration with the Al Ain Neuroscience Group at the Intercontinental Hotel, Al Ain.

They were:

1. Neuropathic Pain: Current Treatment Strategies by Dr. D.M. Kayed, MD, Chief, Division of Neurology, Tawam Hospital, Al Ain on Monday, 26th January 2004.

2. Non-Alzheimer's Dementias: A Look At Lewy Body And Frontotemporal Dementias by Dr. Victoria Lee, Geriatric Pscyhiatrist, Toronto East General Hospital, Canada on Sunday, 8th February 2004.

3. The Genetic Basis Of Human Development And Brain Abnormalities by Dr. Joseph Gleeson, Division of Neuroscience, University of California and San Diego, USA on Tuesday, 24th February 2004.

4. Chronic Fatigue Syndrome, Autism and Specific Reading Retardation: An Immunological Perspective by Dr. Tim Roberts, Member of University Council, Deputy Executive Dean, Faculty of Science and Information Technology, University of Newcastle, Australia on Saturday, 13th March 2004.

5. Some Morphological Correlates Of Chronic Schizophrenia by Prof. Laurence Garey, Professor, Department of Anatomy, FMHS, UAE University, on Monday, 10th May 2004.

6. Enhancing Endogenous Neuro-protection In Models of Parkinson's Disease by Prof. Michael Zigmond, Professor of Neurology & Pittsburgh Institute for Neurodegenerative Disease, University of Pittsburgh School of Medicine, Pennsylvania, USA on Tuesday, 14th December 2004.

7. Writing Scientific Papers by Dr. Beth Fischer, University of Pittsburgh School of Medicine, Pennsylvania, USA on Tuesday, 14th December 2004.

8. Management of Refractory Epilepsy by Dr. Nandini Mullatti, Consultant, Clinical Neurophysiology & Epilepsy, Kings College Hospital, London, UK on Monday, 27th December 2004.

Scientific Meetings

Several of the group members participated actively in the 3rd Dubai International Conference For Medical Sciences, Dubai, 13-16th December 2004.

Summary of Grants & Publications 2004 (refer to departmental reports as below):

Shehab S (Anatomy).

Padmanabhan R (Anatomy).

Adeghate E (Anatomy).

Mensah-Brown E (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).

Sztriha L (Paediatrics).

Gururaj A (Paediatrics).

Petroianu G (Pharmacology).

Adem A (Pharmacology).

Hasan MY(Pharmacology).

Bastaki S (Pharmacology).

Morrison J (Physiology).

El-Sharkawy T(Physiology).

Fahim M (Physiology).

Lammers W (Physiology).

Ljubisavljevic M (Physiology).

El-Rufaie O (Psychiatry).

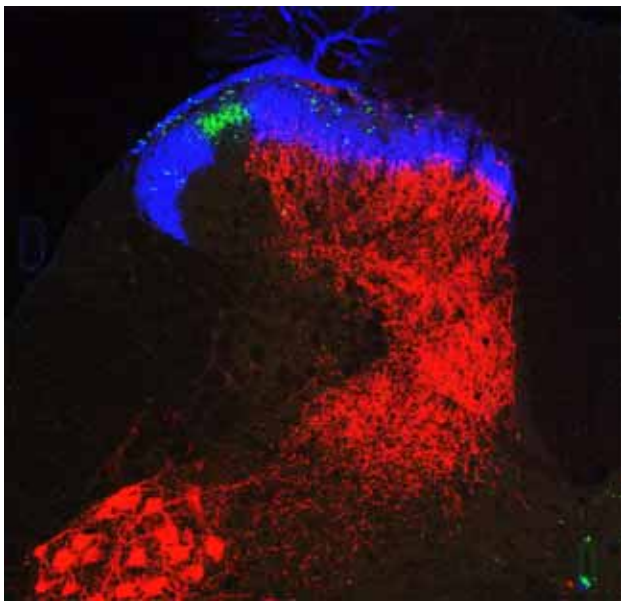
Eapen V (Psychiatry).

Raguram R (Psychiatry).

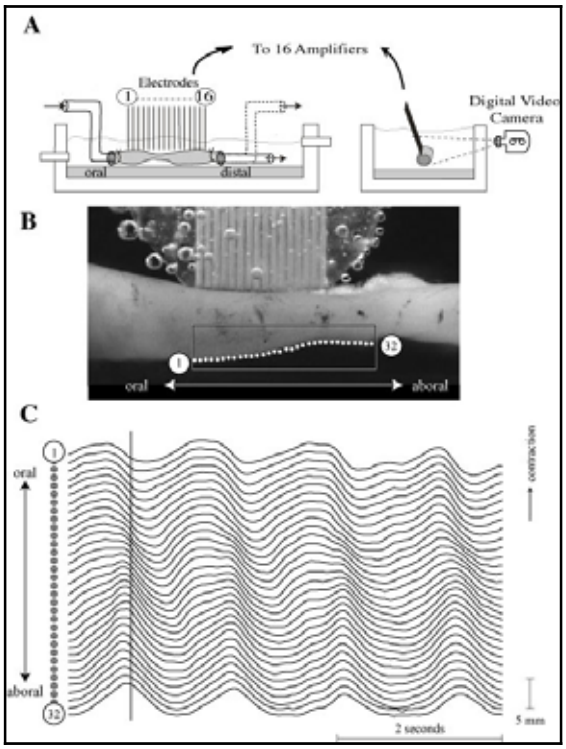
Sayed MAA (Psychiatry).

Osman O (Psychiatry).

Meguid AS (Psychiatry).



Confocal image of transverse section of the fifth lumbar spinal segment stained for vasoactive intestinal peptide (VIP), binding of Bandeiraea simplicifolia isolectin B4 (IB4) and cholera toxin subunit B (CTb) from a rat which had had the left posterior cutaneous nerve of the thigh sectioned 2 weeks before injection CTb into the ipsilateral sciatic nerve. This nerve section caused the loss of IB4-binding (blue) and the upregulation of VIP (green) in the same denervated area in the superficial laminae of the dorsal horn. CTb-labelling (red) is found in the deeper laminae which receive input from myelinated sciatic afferents. Note the absence of any CTb-labelling in denervated area (green).



Panel A; diagram of an experimental set-up in which both the movements and the electrical activities can be recorded simultaneously from an isolated segment of the murine duodenum. The isolated small intestinal segment is connected to an inlet (infusion rate 0.15 ml/min) while the outlet can be raised to 2 cm to induce distension. An array of 16 extracellular electrodes and a digital video camera record the electrical and motility activities respectively. Panel B: snapshot of one frame of the video recording indicating the border analysis performed. An area of interest, marked by the white rectangle, is selected spanning the intestinal border at the contralateral side of the electrode array. After setting the threshold value, the program determines the position of the border in the area of interest at 32 locations (white dots). Panel C plots, in time, the movement of each dot. Dot 1 is located at the oral and dot 32 at the aboral end of the window. Circular contraction occurs when the dots move upwards. The vertical line indicates the timing of the snapshot.

Oncology Research Group, ORG.
Report 2004

Introduction
ORG is a group of colleagues at FMHS and General Authority for Health Services/MOH, who share an interest in oncology research (clinic and basic) and provide clinical services on national level. An ad hoc committee is running the ORG at the moment with expectance of an elected committee in near future.

Objectives / Activities
- Promote cancer research - being a catalyst for research activity.
- Create a forum for collaboration between faculty members, basic scientists and colleagues in clinical disciplines (both faculty staff and colleagues of General Authority for Health Services) dealing with oncology.
- Create an inventory of
  1. research activities
  2. resources available
  3. basic research expertise
  4. available clinical services
  5. specialty interests - subspecialties
  6. individuals (registry)
- Reference group regarding cancer research and funding.
- Advisory body to the General Authority for Health Services/MOH regarding cancer issues of broader national interests (e.g., breast cancer screening, cervical cancer screening, risk factors rang list).
- Create 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.

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

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 is planned to be runned by a committee with members both from the FMHS and the General Authorithy for Health Services.

During 2004 we have had 4 meetings and fortunately the number of attendants are increasing and we have made some progress.

Trauma Research Group

Report 2004

Annual Report (2004)

Summary

During 2004 the activities of the Trauma Group has been more focused and tuned to have professional high profile activities. The group has been successful in attracting more educational and research funds. The educational activities have been developed to include hands on training programs. The majority of these courses are leading in the Middle East Region. The group has published 7 papers related to trauma in international refereed journals and has presented more than thirty five abstracts and oral presentations at national and international meetings. Funds for another two years to continue the Trauma Registry have been raised. The preliminary data have been presented in international meetings and have been well appreciated. The group has won two national prizes for research and educational activities last year.

Mission

The group has the mission to promote and perform high standard research and education in the field of trauma so as to improve medical care of patients.

Major achievements of the Trauma Group

A) Trauma registry

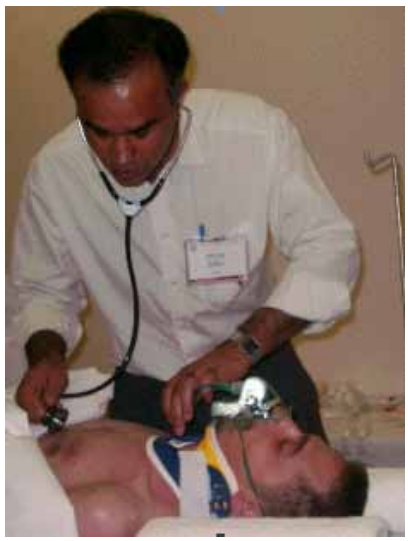
The group has secured funding for the next 2 years to continue the activities of the Trauma Registry in Al-Ain Hospital. The group has been successful with the Award of 70,000 Dirhams from Research Grant Committee of FMHS. Data entry for the first six months has been completed. These results have been presented in the Fifth Annual UAE University Research Conference and were well received by the audience. The Trauma registry will be changed to include the prevention code. There are at present 1600 patients included in the Registry.

B) Organization of Scientific Meetings and Courses

The trauma group was actively involved the organization and running of numerous Courses

The Trauma Group helped the Trauma Committee of the Surgical Advisory Committee UAE in the organization of three courses that were run by the American College of Surgeons. These were ATLS Provider Course, TEAM Course, and ATLS Instructor Course

1) ATLS Provider Courses (FMHS, 26-28th April 2004) and (FMHS, 24-26th November 2004). At present there are three ATLS instructors from the FMHS participating in the ATLS courses that are also run in Fujaira, UAE. 4 courses are run every year.

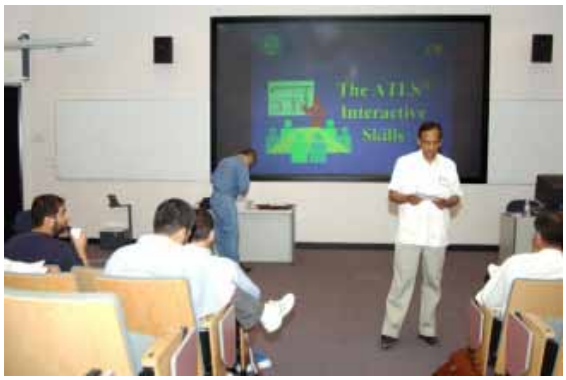


Simulated patients were used in the ATLS provider course

2) TEAM Course for Medical Students.
(FMHS, 29th May2004)
This course aims to introduce the students to the principles of ATLS. 22 medical students participated in this Course. This course is offered regularly to our students starting from this year

3) **ATLS Instructor Course** (9 Instructor partici-

pated in this course) (FMHS, 31st April – 1st May 2004)



ATLS Instructor Course aims to train instructors for the ATLS provider course.

4) "**Train the Trainer Course**" for First Aid in UAE. (Sharqa and Al-Ain, 4-5 April 2004)

5) **Focused Assessment Sonography for Trauma Course** (18 Participants) (FMHS, 25th May 2004). The course aimed to teach doctors, who are involved in the care of trauma victims and have limited knowledge of ultrasound, to quickly detect internal bleeding in the chest and abdomen using ultrasound.

The course has attracted local regional interest and the Trauma Group has received preliminary invitations to run the FAST course in neighboring GCC countries. The FAST course has been recognized internationally. As a result the Trauma Group has been requested by the European Association of Trauma and Emergency Surgery to run this course during its VIIth Congress/Malmö (Sweden) in September 2006.

Training on FAST

6) Introduction to Focused Assessment Sonography for Trauma. 4th GCC Medical Education Conference, 28-30 November 2004, Al-Ain, UAE. (12 participants).

Members of the Trauma Group has been involved in the organization of international conferences as follows:

1) Peter Barss: Member: International Scientific Planning Committee, 7th World Conference on Injury Prevention and Control, Vienna Austria (2004)

2) Peter Barss: Member, International Program and Scientific Committee, 13th International Conference on Safe Communities, Prague Czech Republic (2004)

3) Michal Grivna, Chairman, National Organizing Committee, 13th International Conference on Safe Communities, Prague Czech Republic (2004), Member, International Program and Scientific Committee, 13th International Conference on Safe Communities, Prague Czech Republic (2004)

4) Michal Grivna, Member International Scientific Committee; Member, Awards Committee, 7th World Conference on Injury Prevention and Control, Vienna Austria (2004)

C) Successful Grants 2004

Local grants

1. Establishment of a Nationwide Trauma Registry, FMHS Resaearch Grant (70 000 UED)

2. Establishment of a Course on Focused Assessment Sonography for Trauma
   Red Crescent (230 000 UED)

3. Drowning Prevention in UAE – Knowledge of Swimming and Water Safety Among High School Students in Al Ain, Frequency of Exposure to Aquatic Hazards (Individual Grant) (24,500 UED)

4. School Related Traffic Injuries in Al Ain, UAE – Incidence and Environmental Risk Factors (29000 UED)
   For details of these grants see the relevant departmental reports (Department of Surgery and Department of Community Medicine).

International grants

Research Grant Agency - Ministry of Health, Czech Republic (2004-2006) The injuries in children at home and recreation, implications for prevention (Michal Grivna, as Co-investigator, principal investigator – Dr. V. Benešová)

D) Publications and Abstracts

The group has published 7 papers related to trauma in international referred journals. Three more papers have been accepted. The group has also submitted another five papers for publication and presented more than 35 abstracts and oral presentations at national and international meetings. For details of these publications and presentations see the relevant departmental reports (Department of Surgery and Department of Community Medicine).

E) Prizes

Abu-Zidan FM. **Distinguished Performance Award for Excellence in Teaching and Service** for the academic year 2003/2004, Faculty of Medicine and Health Sciences, UAE University.

Abu-Zidan FM. **Special Endeavours in Human Services Prize.** 5th Annual Research Conference, April 2004, United Arab Emirates University.

F) International recognition

1) Dr Peter Barss was selected in 2004 to collaborate with WHO Geneva and WHO Eastern Mediterranean Region in Cairo to test and evaluate in the Middle East a new global curriculum on injury research and policy.

2) Peter Barss: Invited speaker for Surgical Grand Rounds, McGill University, Sept 2004: Injury Epidemiology, Prevention, and Treatment, an Integrated Curriculum.

3) Peter Barss: Invited Plenary Keynote Speaker for 13th International Conference on Safe Communities, Prague Czech Republic, June 2004

4) Dr Abu-Zidan has been invited to give two talks at the Annual Scientific Congress 2005 of the Royal Australasian College of Surgeons that will be held at Perth, Australia, May 2005. One of the talks will be about Trauma management in United Arab Emirates and the other on How to Start a Trauma Registry.

The International Conference on Emerging Infectious Disease

ICEID-UAE Feb. 26 - 01, 2005

The International Conference on Emerging Infectious Diseases

ICEID-UAE Feb. 26 - March 01, 2005

The International Conference on Emerging Infectious Diseases was held under the Patronage of H.E. Sheikh Nahayan Mabarak Al Nahayan from February 26 to March 1, 2005 in the InterContinental Resort Al Ain. The Conference was organized by the Research Priority Group *Immunoregulation and Infection* of the Faculty of Medicine and Health Sciences (FMHS).

Approximately 720 registered participants attended the Conference, among them about 100 from Europe and the U.S.. Thus it was one of the largest scientific Conferences organized by FMHS so far.

The Conference was opened by H. E. Sheikh Nahayan Mabarak Al Nahayan, Minister of Education and Chancellor of U.A.E. University. Fifteen highly distinguished invited speakers from the U.S., Europe and Australia gave keynote-presentations on all areas of emerging viral, bacterial, parasitic, fungal and prion diseases. In addition 33 papers were presented as short oral communications and 58 as posters. Three poster prizes were awarded to colleagues from The Netherlands, Iran, and the U.A.E., respectively.

For the first time at FMHS an online credit card payment system for payment of the registration fees had been installed, and worked very well. It is now being used for other Conferences and for other FMHS financial issues. Additionally, for the first time for a scientific Conference organized by FMHS, a shuttle bus service was established to bring the Delegates from abroad from Dubai airport to Al Ain.

In addition to the Scientific Program, a Social Program comprising a tour of Al Ain, a Conference Dinner at the Mercure Hotel Jebel Hafeet, a Dinner in the Desert, a Dinner Cruise on Dubai Creek, and trips to Dubai, Abu Dhabi and Sharjah was offered to the Participants and to the Accompanying Persons.

Some original papers, which were presented at the Conference, were published in the February 2005 issue of the top Infectious Disease Journal *Emerging Infectious Diseases* (Impact Factor 5.340). The Abstracts of all presentations were published in a special issue of the *Emirates Medical Journal*.

The entire organization of the Conference was carried out by FMHS and UAEU Staff, which, in view of the large number of participants, was indeed a challenge for them. Nonetheless all employees involved managed it professionally, and I cordially wish to thank them for their huge efforts! The great success of the Conference was only possible due to the efforts of the Faculty and Staff involved! Furthermore, I wish to thank FMHS and all other sponsors for their very valuable contributions!

Prof. Norbert Nowotny
Chairman, Organizing Committee

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

Audience at the Opening Ceremony

Prof. Nowotny introduces Prof. Lindberg, former Secretary of the Nobel Prize Committee, to H.E. Sheikh Nahayan Mabarak Al Nahayan; at the very left: Prof. Webster, *the* Influenzavirus expert.

Impact Factor

Impact Factor

Academic Radiology	1.409
Accidents Analysis & Prevention	-
Acta Neuropathologica	2.556
Acta Neurologica Scandinavica	1.226
Acta Obs Gyn Scandinavica	1.166
Acta Psych Scandinavica	2.356
Am J Hum Genet	11.602
Am J Med Genet	2.603
Am J Obstet Gynecol	2.518
Ann Trop Paediatr	0.704
APLAR J Rheumatology	-
Arch Pathol Lab Med	1.281
Aust Vet J	0.668
Ber Münch Tierärztl	0.622
Biochemistry	4.101
Biochem Biophys Res Comm	2.836
Biochimica Biophysica Acta	1.602
Biogenic Amines	-
Biological Psychiatry	6.039
BMC Pulmonary Med	-
BMC Women's Health	-
Brain Res	2.474
Braz J Med & Bio Research	0.740
British J Anaesthesia	2.365
British J Haematol	3.267
British J Obs & Gyn	-
British J Psychiatry	4.421
Canadian Med Assoc J	-
Cancer Genet Cytogenet	1.542
Cell Physiology & Biochemistry	2.480
Cellular Mol Life Sciences	4.995
Cell Mol Med	-
Child: Care, Health & Develop	0.614
Circulation	11.164
Clin Chem Acta	1.633
Clin Dermatol	0.647
Clinical Immunol	2.915
Clinical Science	2.117
Colorectal Dis	-
Comparative Biochem & Physiol C	1.496
Current Topics in Peptide & Protein Res	-
Deutsche Medizinische Wochenschrift	0.678
Diabetes	8.298
Diab/Metabol Res Reviews	-
Diab Res Clinical Practice	1.680
Eastern Mediter Health Journal	--
Emirates Med J	--
Eur J Cancer	3.694
Eur J Cardiothorac Surg	1.465
Eur J Echocardiography	-
Eur J Human Genetics	3.669
Eur J Obs Gyn Reprod Biol	1.002
Eur J Pharmacol	2.352
Eur Surg Res	0.706
Exp Neurol	3.676
Exp Opinion Investigat drugs	-
FASEB Journal	7.172
Fortschr Roentgenstr	-
Free Radical Res	2.743
Growth Horm IGF Res.	2.169
Gut	5.883
Health Care for Women Intl	-
Human Mutation	6.328
Immunology (Medimond)	-
Int Immunology	3.690
Int J Dermatol	0.736

Int J Diabetes and Metabolism	-
Int J Geriatric Psychiatry	1.948
Int J Neuroscience	0.579
Int J Obstet Anesth	0.927
Int J Psych in Medicine	0.534
J Am Medical Association	21.455
J Am Vet Medical Association	1.404
J Appl Toxicol	1.272
J Clin Densitomitry	1.674
J Clin Endocrinol Metab	5.873
J Clin Pathol	2.966
J Comparative Neurology	3.672
J Comparative Pathology	1.310
J Emerg Infect Dis	-
J Gastrointestinal Surgery	1.881
J Health, Population & Nutri	0.564
J Human Hypertension	1.406
J Human Immunol	-
J Infectious Diseases	4.481
J Med Entomology	1.394
J Molecular Endocrinolgy	3.701
J Nervous Mental Diseases	1.496
J Neurochemistry	4.825
J Nutrition & Cancer	-
J Obstetrics & Gynaecology	0.452
J Occup & Environ Med	1.472
J Pediatrics Health Care	-
J Physiol	4.352
J Preventive Vet Med	-
J Public Health (Oxf)	-
J Trace Elem Exper Med	0.205
J Trop Med & Intl Health	-
J Vet Diag Investigation	1.005
Life Sci	1.944
Microbes and Infection	3.772
Middle E J Family Med	-
Mod Pathol	3.323
Mol Cell Biochem	1.763
Mol. Immunol	2.827
Muscle Nerve	2.282
Neuroendocrinology Letters	1.592
Neurogastroenterol & Motility	2.500
Neuropediatrics	1.383
Neurosci Lett	1.967
Neurosci. Res. Communication	0.481
Neurotoxicology	1.856
Oncogene	6.495
ORV Hetil	-
Pancreas	1.855
Parasitology	1.821
Peptides	2.440
Prakticky lekar	-
Protein and Peptide Letters	0.460
Psych Reports	-
Regul Peptides	2.235
Reviews in Medical Microbiology	1.122
Saudi Med J	0.306
Shock	2.542
Skin Med J	-
Teach Learn Med	0.479
Transgenic Research	2.587
Trans R Soc Trop Med Hyg	-
Vaccine	3.007
Vet Hum Toxicol	0.440
Vet Microbiol	1.571
Virus Res	1.719

Note: two recently published papers describe very nicely the politics of publication and the tyranny of impact factors. Recommended reading!

Colquhoun D; Challenging the tyranny of impact factors. Nature vol 423, p 479, 2003

Lawrence PA: The politics of publication. Nature vol 422, p 259-261, 2003.

بالرغم من تعهداتهم في توفير الرعاية السريرية يقوم الباحثون العاملون بالأقسام السريرية بالبحث العلمي أيضا، إلا أنه لتزال هناك العديد من الفرص البحثية التي لم يتم تداولها ودرسها. لذا تبقى عملية انتداب المزيد من الباحثين الإكلينيكيين من الأولويات التي سوف تعمل على تطوير الخدمات الصحية وإدارتها بشكل فعال في دولة الإمارات العربية المتحدة.

الأستاذ دجورج كروذرز
عميد الكلية

كلمة عميد الكلية

الزملاء الأعزاء

هنيئا لجميع أعضاء هيئة التدريس الذين ساهموا في إنجاح البحث العلمي خلال عام 2004م. إن البحوث المنجزة والإصدارات البحثية التي نشرها أصحابها هي نتاج مجهود جمعي يشمل أيضا كلا من الباحثين المساعدين وطلبة الدراسات العليا وطلبة الكلية والفنيين والمساعدين الإداريين وكذلك المتطوعين. وفي بعض الحالات نجد أن المرضى أنفسهم عملوا على إنجاح البحوث السريرية. لكل هؤلاء أتقدم بجزيل الشكر والعرفان على مساهمتهم الفعالة في إنجاح البحث العلمي بكلية الطب والعلوم الصحية.

ومن بين الإدارة العليا للجامعة نخص بالذكر سعادة الدكتورة ميثاء الشامسي مساعد نائب مدير الجامعة لشؤون البحث العلمي ومستشارها الأستاذ غريب علي حيث تم التنسيق معهما من طرف الأستاذ محمد فاهم من كلية الطب والعلوم الصحية. ويأتي التحاق الأستاذ دجيم فلاتشر مساعد نائب مدير الجامعة للدراسات العليا (عميد الدراسات العليا) ليؤكد حرص الجامعة الشديد على السير قدما في تطوير الدراسات العليا وتنويعها لتشمل في القريب العاجل برنامج الدكتراه. ليسعنا إلا أن نبارك هذا التوجه الجديد وهذا النسق السريع في التقدم والتطور.

أما في كليتنا فإننا لازلنا نستفيد من جهود العميد المشارك لشؤون البحث العلمي الأستاذ ميودراك لوكيتش وفريقه، وكذلك الأستاذ غاري نيكولز في مجال البحوث السريرية، والدكتورة صفا شهاب في مجال العلوم الأساسية، والدكتور كريس هاويرث فيما يتعلق ببحوث الطلبة، والأستاذ طاهر الشرقاوي في مجال الدراسات العليا. و أتقدم بجزيل الشكر والعرفان إلى الأستاذ ويم لاميرز الذي يعمل دائما على أن يظهر التقرير السنوي على أحسن وجه في كل سنة.

لقد ضاعفت المجموعات البحثية المتخصصة من جهودها و قامت كل واحدة منها إما بعقد أو بالتخطيط لعقد مؤتمر دولي هام. فقد عمل الأستاذ نوربارت نفوتني مشكورا على إنجاح المؤتمر الدولي حول الأمراض المعدية الجديدة الذي عقد مؤخرا، مما جعل عددا كبيرا من الوفود الخارجية تقبل عليه وخاصة الوفود الضخمة القادمة من الولايات المتحدة وكندا. فهنيئا نوربارت - لك ولزملائك!

إن عدد الرعاة الخارجيين والدعم الذي نتلقاه في ازدياد دائم. فبالإضافة إلى جائزة الشيخ حمدان وصندوق تاري فوكس وما يقدمانه من منح دراسية فإننا نتلقى الدعم المتواصل واللامحدود من المجلس البريطاني وهيئة الهلال الأحمر الإماراتي. أما الرعاة الجدد فهم مؤسسة مايكل فوكس (داء باركنسون) ومؤسسة والكم. كما عبرت مؤسسة مثلث البحث الدولي عن رغبتها في تنفيذ مشروع ضخم حول مضاعفات مرض السكري بدولة الإمارات العربية المتحدة. وأنا واثق أنه سوف يتم توطيد هذه العلاقات في السنين المقبلة. إلا أننا لازلنا نواجه صعوبة في الحصول على شريك يعمل على تجديد المعدات المجودة حاليا وإضافة معدات جديدة نحن في أمس الحاجة إليها.

مقدمـة

نضـع بين أيديكم الإصـدار الـرابع عشر للنشر العلمي والتخصصات البحثية، وهو يحتوي على دليل الأبحاث التـي أجريـت بكلية الطـب والعلـوم الصـحية بجامعـة الإمـارات العربية المتحدة خـلال عـام 2004م. يأتي هذا المجلد ضـمن سلسـلة من الإصـدارات السـنوية التـي تحمل المبادرات البحثية الفردية والجماعية وتعكس مدى حرص أعضاء هيئة التدريس على البحث العلمي والنشر العلمي.

كعادتنا فـي كل عـام فإننـا دائمـا نسـعى إلـى تطوير وتحديث وتحسين هذا الإصـدار السـنوي، إذ يتضـمن هذا الإصـدار كعادتـه لمحـة عن مختلف الأقسـام العلمية بالكلية وكذلك التقارير التـي تعدها المجموعـات البحثية المتخصصة. أما جهودنا لهذا العام فتنصب حول السعي لإصدار هذا المجلد وتوزيعه خلال النصف الأول من عام 2005م أي قبل الإجازة الصيفية.

لقد قامت الآنسـة شيخة بطـي والسيدة إيفانا ليزاريتوري بتجميع المادة العلمية وتنسيقها وإخراجها في شكلها النهائي. وكعادتـه قـام السيد راجـاقوبلان بمراجعة وتنسيق المـادة المتأتية من الأقسـام العلمية وبالتنسيق بين جميع الأطراف المعنية من أجل إنجاز وإنجاح العمل.

باسمي وباسم كل من ساهم في إصدار هذا الدليل أتمنى لكم كل النجاح لمبادراتكم البحثية وإنجازاتكم العلمية.

أ.د. ويم لامرز
رئيس التحرير

أ.د. ميودراج لوكيج
العميد المشارك للبحث العلمي

فهرس المحتويات

المقدمة---------- V

كلمة عميد الكلية---------- VII

المنشورات العلمية للأقسام

التشريح---------- 3

الكيمياء الحيوية---------- 9

طب الأسرة---------- 16

طب العائلة---------- 22

الطب الباطني---------- 25

التعليم الطبي---------- 30

الأحياء الدقيقة---------- 32

النساء و الولادة---------- 40

طب الأطفال ---------- 43

علم الأمراض---------- 47

العقاقير---------- 51

وظائف الأعضاء---------- 57

الطب النفسي---------- 62

الأشعة---------- 65

الجراحة---------- 66

مجموعات الأبحاث العلمية

السكري و الأوعية الدموية---------- 75

علم الوراثة و التطوير---------- 78

تنظيم المناعة و العدوى---------- 81

فريق علم الأعصاب للأبحاث العلمية---------- 85

الأبحاث العلمية للسرطان---------- 88

فريق الأبحاث العلمية للصدمة---------- 89

المؤتمر العالمي للأمراض المعدية---------- 93

عوامل التأثير---------- 97

منشورات مكتب العميد المشارك للبحث العلمي

رئيس التحرير : أ.د. ويم لامرز
الإدارة السكرتارية : السيد بي. راجاقوبالان
الفنون التخطيطية : السيدة إيفانا ليزاريتوري
تصميم و تنسيق : الآنسة شيخة المزروعي
التصوير : السيد أشوك براساد
الترجمة للغة العربية: السيد علي العذاري

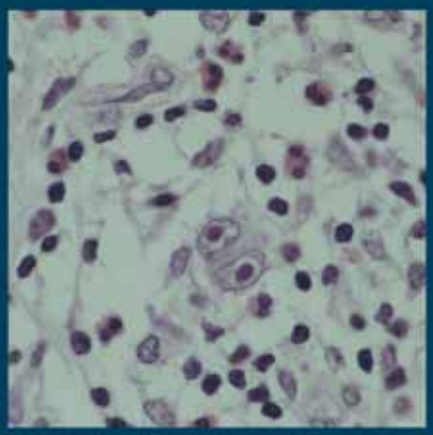
جامعة الإمارات العربية المتحدة
كلية الطب والعلوم الصحية

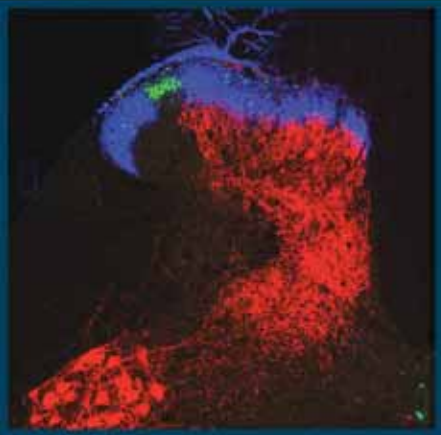
النشر العلمي لعام 2004
والاهتمامات البحثية

مكتب العميد المشارك للبحث العلمي

جامعة الإمارات العربية المتحدة
كلية الطب والعلوم الصحية

النشر العلمي لعام 2004
والاهتمامات البحثية





العميد المشارك للبحث العلمي