

DEPARTMENT OF MEDICINE

Research Report 2009

Head of Department: Professor B.M. Mayosi

Departmental Profile

The Department consists of 16 clinical divisions and 10 major research units. The clinical divisions are General Medicine, Cardiology, Clinical Haematology, Clinical Immunology, Clinical Pharmacology, Dermatology, Endocrinology and Diabetes, Geriatric Medicine, Hepatology, Infectious Diseases and HIV Medicine, Lipidology, Medical Gastroenterology, Nephrology and Hypertension, Neurology, Pulmonology, and Rheumatology.

The Department has 10 major Research Units: Albertina and Walter Sisulu Institute of Ageing in Africa, Centre for excellence for Chronic Disease in Sub-Saharan Africa, Desmond Tutu HIV Research Centre, Hatter Institute for Cardiovascular Research, Lennox Eales Porphyria Lab, Lung Infection & Immunity Unit, Mycobacterial Immunology Group, UCT Leukaemia Unit, UCT Lung Institute and Research Unit for Traditional Medicines.

Departmental Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------------------|-----------|
| Professors | 13 |
| Associate Professors | 22 |
| Senior Lecturers/lecturers Full-time | 28 |
| Administrative and clerical staff | 34 |
| Total | 97 |

Honorary Staff

| | |
|-------------------------------|-----------|
| Honorary Professors | 5 |
| Emeritus Professors | 3 |
| Honorary Associate Professors | 2 |
| Honorary Senior Lecturers | 39 |
| Honorary Research Associates | 3 |
| Total | 52 |

Students

| | |
|----------------|-------------|
| Doctoral | 30 |
| Masters | 100 |
| Undergraduates | 1100 |
| Total | 1230 |

Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

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DEPARTMENT OF MEDICINE DIVISION OF CLINICAL IMMUNOLOGY

Head of Division: Associate Professor S.R. Ress

Divisional Profile

The Division of Clinical immunology undertakes a multi-disciplinary activity that includes teaching of undergraduate and post-graduate students, evaluation of immune function in patients with suspected immune deficiency, and a translational research programme focussed on immunology of autoimmunity, HIV and TB. This year saw further expansion of staff and research projects of the Lung Infection and Immunity Unit, under the leadership of Associate Professor Keertan Dheda. He also hosted several visitors who gave invited talks, including Prof. Graham Rook from UCLA.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-------------------------|-----------|
| Associate Professors | 2 |
| Postdoctoral scientists | 5 |
| Research Staff (nurses) | 5 |
| Technical Support Staff | 4 |
| Administration | 2 |
| Total | 18 |

Students

| | |
|--------------|-----------|
| Masters | 4 |
| Doctoral | 9 |
| Total | 13 |

Research Fields and Staff

Associate Professor Stanley Ress

Immunology of tuberculosis, Autoimmunity

Associate Professor Keertan Dheda

Innate immunity in TB infection, pulmonary regulatory immunological pathways in relation to infection, host immunity, novel and emerging technologies in rapid and field-friendly TB diagnostics, Outcomes and intervention studies of drug resistant TB,

smoking and TB, diagnostic markers in pleural effusions, HCW screening for TB development.

Dr Lynn Patricia Semple

Regulatory T-cells

Dr Virginia Davids

TB – Ethics & regulatory issues

Dr Anke Binder

Innate immunity in TB

Dr Alice Maredza

The role of regulatory T cells (T-reg) in latent and active TB in a high burden setting.

Dr Teri Roberts

Detection of Urinary Biomarkers that distinguish active tuberculosis, tuberculosis infection, and non-tuberculous disease in South Africa

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**DEPARTMENT OF MEDICINE
DIVISION OF DERMATOLOGY**

HEAD OF DIVISION - Professor Gail Todd

DIVISION PROFILE

Teaching

The Division's training programme includes undergraduate teaching of 2nd to 6th year MBChB students, nurses and students in professions allied to medicine. Postgraduate students include 8 registrars, and 1 PhD fellow. Our division supervised 11 second year students in 4 research projects and 5 fifth year students during their electives in 2000.

Academic activities

Professor Khumalo was made an associated professor in 2009. The specialised clinic for problems of the hair and scalp, run by herself and Dr Ngwanya remains a service in demand and the cornerstone for their increasing publications on hair and scalp disorders.

Dr Rannakoe Lehloenya will lead a study of the molecular and genetic aspects of severe cutaneous drug reactions as a PhD fellow in the division. Ongoing clinical research includes the following: A study on contact hypersensitivity reactions in atopic eczema children. The development of skin disease and factors associated with these reactions in vulnerable first year trainer hairdressers has been piloted and will be prospectively studied as part of the occupational health program. Dr Motsepe will study the relevance of a positive latex (RAST) result in a non-medical occupational setting in 2010.

Dr Vanessa Lapiner received her MSc for her work documenting the correlation between melanocyte stem cells in vitiliginous skin and response to treatment. Dr Anita Bonthuys will continue this vitiligo research as an MRC Fellow and supernumary registrar in 2010. The molecular basis of vitiligo, the role of khellin in repigmentation, and the low incidence of cancers in vitiligo patients remain an important focus of our collaborative research work together with Professor Sue Kidson, Dr Robea Ballo and Dr Lester Davids of the Department of Human Biology.

Divisional Statistics 2009

PERMANENT AND LONG TERM CONTRACT STAFF

| | |
|--|-----------|
| Principal Specialist | 1 |
| Senior Lecturers (full-time) | 1 |
| Senior Lecturers (part-time, 5/8) | 2 |
| (part-time, 6/8) | 1 |
| (part-time, sessional) | 4 |
| Research Staff (sessional, IT support) | 1 |
| Administrative and Clerical Staff | 1 |
| Honorary Lecturers | 4 |
| TOTAL | 13 |

STUDENTS

| | |
|---------------|------------|
| Doctoral | 1 |
| Masters | 9 |
| Undergraduate | 765 |
| TOTAL | 775 |

RESEARCH FIELDS

PERMANENT STAFF

Associate Professor Gail Todd

Head of Division; Genetic basis for atopic eczema in African children, collaborative project with Universities of Dundee, Dublin and Zurich; Occupational skin disease; All aspects of vitiligo especially national epidemiology and cancer risk; Community dermatology; IT use in teaching and service delivery; Systemic drug reactions, predictive testing for culprit drug and re-challenge regimes (RegiSCAR); African councillor on the International Psoriasis Council; Convener of 5th year MBChB Mixed Specialties program MDN500W.

Dr Susan Jessop

IT use in teaching and service delivery; Evidenced-based dermatology in collaboration with the Cochrane Skin Group as a lead editor, Nottingham UK; Medical education; Convener of the 5th year MBChB program.

Dr Laduma Ngwanya (5/8)

Dermatopathology; Diseases of the hair and nails

Associate Professor Nonhlanhla Khumalo (6/8 – paediatric dermatology)

African scalp and hair disorders. Blistering dermatoses. Vulval disorders. Evidence-based dermatology. Deputy editor South African Medical Journal.

CPN Patricia Kelly (5/8 – nurse educator)

Lecturer and nurse convener for the 5th year MBChB dermatology student block; Course convener and lecturer for the UCT Dermatology Nurse Course; Follow-up study on post-graduate dermatology nurses; International Skin Care Nursing Group South African representative

REGISTRARS

Dr Sean Christians

Epidemiology of itchy skin diseases in informal settlements in the Western Cape

Dr IIsphi Browne (5/8 supernumerary post)

Changing pattern of skin diseases in HIV-infected patients

Dr Didi Motsepe (supernumerary registrar)

Relevance of a positive latex (RAST) result in a non-medical occupational setting

Dr Fatema Esmail (supernumerary registrar)

Genetic basis for atopic eczema with special relevance to filaggrin gene defects in and the spectrum of sensitizations in African children with atopic eczema and controls, collaborative project with University of Dundee, Dublin and Zurich

Dr Vanessa Lapiner

Quality of life assessment in vitiligo patients.

Dr Nomphele Gantsho (5/8 supernumerary post)

Surgical management of acne keloidalis.

Dr Rudolf Kruger (supernumerary registrar)

Laser treatment of pigmentary disorders in pigmented skin

Dr Rupesh Misra**POSTDOCTORAL FELLOW****Dr Rannakoe Lehloenya**

Drug reactions and hypersensitivity testing (RegiSCAR); Immune reconstitution syndrome in HIV

RESEARCHERS**Dr Samantha Eisman** (sessional senior consultant)

Teledermatology and the use of cell phone technology; Laser therapy

PN Judy Wallace (Sister - Ward G23)

Nursing care of severe drug reactions; Management of leg ulcers; Psoriasis association committee

S. Woods (IT consultant – part-time)

Development and maintenance of dermatology databases and teaching slides

HONORARY STAFF

Honorary Lecturers: Emeritus Associate Professor Norma Saxe (dermatopathology, epidemiology of melanoma), Dr Chris Walker (dermatopathology), CPN Nora Christians (convener of the UCT Dermatology Nurse Course), Mr Ockie Kruger, African Director, Leprosy Mission (leprosy module convener and lecturer for the UCT Dermatology Nurse Course);

VISITORS

Dr Sara Ritchie, UK; Dr Melanie Walter, Duke University; Prof Keith Harding, Cardiff University UK

DERMATOLOGY NURSE GRADUATES 2009

The course was cancelled for 2009

ELECTIVE STUDENTS

Anne Genraedts, The Netherlands; Nadine Greiter, Germany; Jared Hertz, UK; Eimar O'Brennar UK; Raphael Pietton, France; Queen Gqada, Stellenbosch University; Thomas Klein Nulent, Netherlands; Steven Schalekamp, Netherlands

CONSULTANCY AND OTHER ACTIVITIES

Members of the department continue to act as consultants and serve on editorial boards and many committees at local, national and international level in addition to their routine commitments. This has meant that our dermatology teaching and research functions at an internationally high standard.

We remain dependent on clinical drug trials to sustain and develop dermatology teaching, research and services. While these appear to compete with basic research time, they continue to generate peer-reviewed publications and international collaborations while providing registrars exposure to good clinical practise, medical dispensing basics and sound research methodology.

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DEPARTMENT OF MEDICINE

DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE

Head of Division: Professor N.S. Levitt

Divisional Profile

The Division provides an inpatient and outpatient clinical service and sub-speciality training in adult endocrinology and diabetes. It has close clinical links with Paediatric Endocrinology and Diabetes and Reproductive Endocrinology. Dr Joel Dave was appointed to a UCT Department of Education Senior Lecturer/Senior Specialist post and continues to work as a senior specialist in the division. We are currently a host training centre for Endocrinologists on the African Continent with Dr Adedayo Adegite from Nigeria as our current supernumerary senior registrar

Research

The Division is involved in a wide range of research activities, interacts with a number of international and local collaborators and is a member of the recently established Chronic Disease Initiative in Africa. The primary areas are:

Metabolic consequences of antiretroviral therapy in HIV+ patients: Cross-sectional and longitudinal studies examining the metabolic consequences of HAART are underway. These are being funded by the World Diabetes Foundation and Department of Health.

Burden of disease: The contribution of diabetes and other chronic diseases to the overall burden of disease pattern in the South African context has been studied in collaboration with Dr Debbie Bradshaw, BOD Group, MRC. A cross sectional survey of diabetes and other cardiovascular risk factors in the Black African community in Cape Town is underway.

Obesity: In collaboration with the Department of Human Biology, a number of studies are in progress examining the mechanisms underlying the aetiology of obesity and the metabolic sequelae thereof in black and white African women.

Addison's Disease: The pathogenesis of Addison's disease is being investigated in collaboration with the Universities of Florida, USA and Uppsala, Sweden. Additionally a genetic component is being undertaken with Prof She, Augusta, USA. The metabolic and cardiovascular consequences of hydrocortisone replacement are currently being investigated in relation to Addison's disease.

Health Systems Research: As part of the CDIA an integrated package of care including that related to diabetes and other chronic diseases is being developed for testing in a pragmatic cluster randomised trial.

Smoking in pregnancy: The development and testing of interventions directed at reducing smoking rates during pregnancy.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|----------|
| Professor | 1 |
| Senior Lecturer (Hon) | 1 |
| Senior Lecturers | 2 |
| Senior Registrar in Training | 1 |
| Medical Officer (sessional) | 1 |
| Diabetes Specialist Nurse | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 8 |

Research Fields and Staff

Professor N S Levitt

Diabetes and hypertension health systems research, diabetes burden of disease, the foetal origins of chronic diseases, mechanisms underlying the metabolic sequelae of obesity, metabolic consequences of HAART

Professor K Steyn

Hypertension health systems research, burden of chronic disease and smoking in pregnancy

Dr I L Ross

National registry for Study of Addison's Disease and polyglandular autoimmune syndrome

Cortisone replacement therapy and impact on multiple organ syndromes in Addison's Disease

Dr J Dave

Prevalence of undiagnosed hyperglycaemia in patients presenting with acute strokes
Incidence of osteoporosis and vertebral fractures in patents with inflammatory bowel disease

Metabolic consequences of antiretroviral therapy

Contact Details

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DEPARTMENT OF MEDICINE
DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE/
Chronic Diseases Initiative in Africa (CDIA)

Director: Professor N.S. Levitt
Associate Director: Dr Krisela Steyn
Centre Manager: Ms Carmelita Sylvester

Profile

The recently launched Chronic Diseases Initiative in Africa (CDIA), funded by UnitedHealth Chronic Disease Initiative and the National Heart Lung Blood Institute (NHLBI), was established to serve as a regional hub for developing and evaluating models for chronic disease care and the prevention of their risk factors in South Africa. The Centre will serve as a collaborating initiative bringing together experts in public health, clinical medicine, epidemiology, lifestyle modification, economics, health behaviour, implementation research and health service management. The collaboration across and between institutions (UCT, Stellenbosch, UWC, MRC, Harvard University, Muhimbili University and Western Cape Department of Health) and sectors will individually and institutionally help develop capacity.

Research

Project # 1: Development of global cardiovascular disease risk assessment tool.

Project #2: The comparison of the effectiveness of a training program for primary care health practitioners (nurses and doctors) based on an integrated clinical care guideline with the current training and care for chronic diseases.

Project #3: The development of a decision analytic model of CVD that would allow us to predict CVD events accurately to be used in a cost-effectiveness analysis comparing the use of different screening and intervention strategies.

Project #4: Development of community health workers programme - To establish the community health workers group and to ascertain what the needs are to work toward a chronic disease community health worker programme.

Project #5: Developing lifestyle intervention tools - Review available intervention materials for smoking cessation, nutrition and physical activity currently available in community health centres and develop a prototype of the smoking cessation materials and tools in English.

Project #6: Develop capacity building activities in South Africa and Tanzania.

Unit Statistics

UCT Permanent and Long-term Contract Staff

| | |
|-----------------|---|
| Professor | 1 |
| Professor (Hon) | 1 |
| Senior Lecturer | 2 |

| | |
|-----------------------------------|----------|
| Senior Clinical Research Fellow | |
| Senior Registrar in Training | |
| Medical Officer (sessional) | 1 |
| Diabetes Specialist Nurse | |
| Administrative and Clerical Staff | 2 |
| Total | 7 |

NON-UCT Permanent and Long-term Contract Staff

| | |
|---------------------------------|----------|
| Professor | 4 |
| Professor (Hon) | |
| Senior Lecturer | 2 |
| Senior Clinical Research Fellow | |
| Senior Registrar in Training | |
| Medical Officer (sessional) | |
| Diabetes Specialist Nurse | |
| Other | 2 |
| Total | 8 |

Research Fields and Staff

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**DEPARTMENT OF MEDICINE
DIVISION OF GASTROENTEROLOGY
(Gastrointestinal Clinic)**

Acting Head of GI Clinic: Professor JEJ Krige

Head: Medical Gastroenterology: Dr GA Watermeyer

Divisional Profile

The Gastrointestinal Clinic is a multi-disciplinary clinical unit consisting of Medical and Surgical components. This report primarily reflects the Medical component. The Clinic carries a large clinical load and offers a number of specialised services, with clinical and applied research interests in: Hepatobiliary disease; Colorectal disease; Oesophageal disease; Inflammatory bowel disease; *H.pylori* related disease; and Nutrition. The Clinic is involved in a number of collaborative research projects.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|---|
| Lecturers | 5 |
| Research Staff | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 5 |

Students

| | |
|---------|---|
| Masters | 4 |
|---------|---|

Research Fields and Staff

Dr Gill Watermeyer

Risk of malignancy in inflammatory bowel disease treated with Azathioprine or 6-Mercaptopurine; TB versus Crohn's disease; genetics of gastric cancer (with Prof Schalk van der Merwe, University of Pretoria); Predicting bad outcome in Crohn's disease; drug trials – various

Dr Dave Epstein

GIT diseases in HIV; Osteoporosis in IBD; creation of a national IBD registry; Azathioprine in Ulcerative Colitis; differentiating intestinal TB from Crohn's Disease; endoscopy database design

Dr Dion Levin

Bleeding Peptic Ulcer Disease; *Helicobacter.pylori* testing.

Dr Naayil Rajabally

Clostridium difficile in IBD.

Dr Eduan Deetlefs

TB in IBD

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DEPARTMENT OF MEDICINE
THE ALBERTINA AND WALTER SISULU INSTITUTE OF AGEING IN
AFRICA/ DIVISION OF GERIATRIC MEDICINE

Acting Head of Institute of Ageing in Africa and Head of Division of Geriatric Medicine: Dr S. Kalula

Institute Profile

The Albertina and Walter Sisulu Institute of Ageing in Africa (IAA) is a Cross-Disciplinary Group. The IAA represents a coalescence of institute – wide disciplines with a focus on ageing: specifically Geriatric Medicine; Geriatric Neurology; Geriatric Neuropsychology and Old Age Psychiatry. The International Longevity Centre–South Africa is incorporated in the Institute. The vision of the IAA is to be an academic, clinical, research and policy centre of excellence and relevance in Africa. Its mission is to facilitate the delivery of the highest standard of inter-disciplinary, in-context training for health and allied professionals and evidence-based clinical and social care for older people, whilst undertaking appropriate research and audit upon which policy and planning for older persons may be based. The mission is achieved through inter-disciplinary partnerships and teamwork, and human resources development within current legal, ethical and financial constraints. The IAA is a leader in the area of research on ageing in sub-Saharan Africa, and enjoys international recognition and acclaim.

Institute Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|----------|
| Associate Professor | 1 |
| Senior Lecturers | 3 |
| Lecturers | 2 |
| Senior Researcher | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 8 |

Honorary Staff

| | |
|---------------------|----------|
| Visiting Professor | 1 |
| Visiting Researcher | 1 |
| Senior Lecturer | 1 |
| Lecturer | 2 |
| Total | 5 |

Students

| | |
|--------------|----------|
| Doctoral | 3 |
| Masters | 3 |
| Total | 6 |

Research Fields and Staff

Dr Sebastiana Kalula

Epidemiology of dementia; falls; quality of care.

Dr Linda de Villiers

Stroke risk factors and rehabilitation; post-discharge stroke community care.

Associate Professor Marc Combrinck

NRF Research Chair in Clinical Neurosciences: neuro-inflammation and mechanisms of neuro-degeneration with specific reference to cognitive impairment in the elderly and in HIV-associated encephalopathy.

Dr Kevin G.F. Thomas

Senior Lecturer, Department of Psychology: geriatric neuropsychology; dementia; impact of stress on memory; impact of life stressors on age-related cognitive decline.

Dr John A. Joska

Senior Lecturer, Division of Neuropsychiatry, Department of Psychiatry and Mental Health: neurocognitive disorders in HIV infection.

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DEPARTMENT MEDICINE

DIVISION OF HAEMATOLOGY and UCT LEUKAEMIA UNIT

Head of Division: Professor N. Novitzky

Divisional Profile

The Division of Haematology at Groote Schuur Hospital is a complex unit with multi disciplinary activities that include outpatient clinics, admission beds as well as diagnostic and research laboratories. The clinical services are organised under the umbrella of the Department of Internal Medicine, while the laboratory diagnostic sections are under the broader organisation of the Department of Clinical & Laboratory Sciences and National Health Laboratory Service (NHLS). The Haematology section of the laboratory was accredited 2 years ago and after review, this accreditation was confirmed this year.

In addition a University of Cape Town Leukaemia Unit established within the division, has now been reviewed and approved by the University Research Committee and will continue focusing its research work in the area of haemopoietic stem cell biology and transplant immunology. The research laboratory located at the medical school campus is well equipped to support undergraduate and post graduate pathology and science students. A second scientist has now been appointed to head molecular and cellular research in the Leukaemia Unit laboratory. The task of this scientist will be to pursue further research into the area haematopoiesis, detection of minimal residual disease, cellular therapies and stem cell transplantation. Additionally Medical Research Council funded projects continue to improve our understanding of haematological malignancies.

The Division of Haematology provides training for both undergraduate and postgraduate students at the Medical Faculty. Registrars and consultants participate in undergraduate training, facilitating various modules focussing in blood disorders. At the postgraduate level, training is given at the level of Masters and PhD courses in cell biology as well as specialist training in haematopathology for medical graduates. An ongoing Professional Development programme has been established and run to improve the training of medical staff. In addition, training is provided for Clinical Pathologists. Regular experiential teaching and microscope tutorials are given to registrars in Haematopathology. Journal Clubs, seminars and group teaching is provided both for Haematopathology, Clinical Haematology and medical registrars. Interdepartmental meetings are held with academic staff from Tygerberg Hospital and Red Cross Memorial Children's Hospital. Faculty members from the division also regularly contribute to the teaching programmes of the basic sciences as well as Departments of Internal Medicine and Clinical and Laboratory Sciences.

Divisional Statistics

Permanent and Long-term Contract Staff:

| | |
|-------------------------|---|
| Professor | 1 |
| Clinical Service | |

| | |
|--|----|
| Senior Specialists | 1 |
| Specialist | 1 |
| Clinical Registrars | 3 |
| Senior House Officers | 2 |
| Chief Professional Nurse | 2 |
| Administrative and clerical staff | 3 |
| | |
| Diagnostic Service | |
| Senior Pathologist | 2 |
| Pathologists | 2 |
| Pathologist part-time | 1 |
| Scientist | 1 |
| Pathology Registrars | 6 |
| Laboratory Manager | 1 |
| Medical Technologists | 16 |
| Technicians | 4 |
| | |
| UCT Leukaemia Unit | |
| Scientist | 1 |
| Research Technologist | 1 |
| Clinical Research Co-Ordinator | 1 |
| Administrative and clerical staff | 1 |
| Laboratory assistants (medical school) | 2 |

Students

| | |
|----------|---|
| Doctoral | 1 |
| Masters | 3 |

Research Fields and Staff

Professor N. Novitzky

Haematopoietic stem cell biology; clonogenic assays; haematopoietic stem cell transplantation; immune reconstitution; haematological malignancies

Dr Maureen Stein

Haematopoietic stem cell biology

Dr Cecile du Toit

Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

Dr. Andrew McDonald

Thrombosis and Haemostasis

Dr Jessica Opie

Molecular biology of neoplasia: chronic myelogenous leukaemia; coagulation abnormalities

Dr Karen Shires

Molecular biology and diagnostics

Dr Sheehan Mowla

Minimal residual disease and flow cytometry.

Ms Rygana Mohamed

Cellular biology of neoplasia; clonogenic assays

Dr Andrew McDonald

Haemophilia; thrombophilia; stem cell transplantation

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DEPARTMENT OF MEDICINE

HATTER INSTITUTE FOR CARDIOLOGY RESEARCH

Directors: Emeritus Professor L.H. Opie and Professor B.M. Mayosi

Institute Profile

The focus of the Hatter Institute is to study: 1) ways of protecting the heart against insults such as lack of blood flow (ischaemia) (Cardiac Protection Unit), and 2) the genetic basis of cardiomyopathy and other forms of heart disease (Cardiovascular Genetics Unit).

To achieve research excellence, we aim at producing work that achieves publication in the best internationally recognised journals and work that is of relevance to the society in which we live.

We also have an important teaching role, not only within the Medical School, but also by virtue of conferences and courses organised with our sister Hatter Institute at University College London, directed by Professor Derek Yellon. The annual Cardiology at the Limits meeting promotes high level postgraduate education. It brings together cardiologists from the United Kingdom and all over South Africa to listen to an intense updating on crucial cardiological issues “at the limits” of modern knowledge.

Research Collaborative initiatives

1. Division of Lipidology, Department of Medicine, University of Cape Town.
2. Cardiovascular Research Unit, Department of Cardiac Surgery, University of Cape Town.
3. University of Stellenbosch (Professor Amanda Lochner’s and Associate Professor Hanlie Moolman-Smook’s groups).

Other collaborations

1. Collaboration with University College London, Hatter Institute, Division of Cardiology, Department of Cardiology, University of Pavia, Italy
2. Harvard Medical School, Boston.
3. Division of Cardiovascular Medicine, Mayo Clinic and Mayo Medical School, Rochester, Minnesota.

4. Department of Pharmacology, University of Dijon, France.
5. Department of Medicine, Turku University, Finland, together with Positron Centre.
6. Department of Cardiology, University of Geneva, Switzerland

Institute Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|-----------|
| Emeritus Professor | 1 |
| Associate Professor | 1 |
| Clinical Staff | 1 |
| Senior Lecturers | 0 |
| Research Staff | 5 |
| Laboratory Assistants | 2 |
| Administrative and Clerical Staff | 1 |
| Total | 10 |

Honorary Staff

| | |
|---------------------|----------|
| Honorary Professors | 2 |
| Total | 2 |

Students

| | |
|---------------|-----------|
| Post-Doctoral | 3 |
| Doctoral | 5 |
| Masters | 5 |
| Honours | 0 |
| Total | 13 |

Research Fields and Staff

Emeritus Professor Lionel Opie

Delineation of cellular and molecular mechanisms promoting cardiac protection

Professor Derek Yellon

Delineation of cellular and molecular mechanisms promoting cardiac protection

Professor Bongani Mayosi / Associate Professor Hanlie Moolman-Smook

Epidemiology, genetics, and treatment of non-ischaemic heart disease

Professor Peter Schwartz / Associate Professor Hanlie Moolman-Smook

Genetics of arrhythmogenic heart disease

Associate Professor Sandrine Lecour (Cardioprotection Group leader)

Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to Tumour Necrosis Factor alpha

Dr Roisin Kelly

Delineation of cellular and molecular mechanisms promoting cardiac protection via ethanolamine

Dr Joy McCarthy

Molecular regulation of cardiac energy metabolism and its contribution to heart disease

Dr Miguel Frias

Cardioprotective role of synthetic high density lipoproteins

Ms Lydia Lacerda

Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to tumour necrosis factor (TNF)- α .

Mr Gaurang Deshpande

Receptor subtypes involved in the cardioprotective effect of sphingosine 1 phosphate

Mr. Sarin Somers

Molecular regulation of cardiac energy metabolism and its contribution to heart disease with special reference to role of nuclear factor STAT3.

Ms Tasneem Adam

The anti-aging molecules sirtuins and their role in cardioprotection

Mr Jonathan King

Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to potential clinical application.

Ms Kim Lamont

Analysis of new protective factors in red wine

Damian:

Role of the mitochondria in the cardioprotective effect of preconditioning

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DEPARTMENT OF MEDICINE

DIVISION OF HEPATOLOGY

Head: A/Professor Wendy Spearman

Divisional Profile

The Division of Hepatology runs the only dedicated liver clinic as well as the only state liver transplant programme in the country. We also run a Porphyria clinic.

The unit is referred patients from all provinces in South Africa as well as from neighbouring countries such as Zimbabwe and Namibia for assessment regarding the aetiology and management of both acute and chronic liver disease and suitability for liver transplantation. These referrals come from both the private and public sector.

We provide a direct call-in service telephonic to primary, secondary and tertiary medical centres regarding management of liver disease. The Liver unit works closely with the Surgical Hepatobiliary unit and collaborates with the Surgical Research laboratory.

The major areas of research include: viral hepatitis, autoimmune liver disease, immune abnormalities in liver disease, HIV and liver disease, porphyria, liver transplantation and development of bioartificial liver support devices.

Dr. Sonderup was awarded the SOLVAY award by SAGES for research into Hepatitis C in South Africa. The unit is actively involved in drawing up national guidelines for the management of Hepatitis B / HIV coinfection and Hepatitis C.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------------------|----------|
| Associate Professors | 1 |
| Senior Lecturers / Research Officers | 2 |
| Technical Support Staff | 2 |
| Total | 5 |

Honorary Staff

| | |
|----------------|----------|
| Honorary staff | 1 |
| Total | 1 |

Research Fields and Staff

H.N. Hairwadzi

Autoimmune liver disease; viral hepatitis, bone disease in chronic liver disease

M.W. Sonderup

HIV and liver disease; viral hepatitis; porphyria

C.W.N. Spearman

Liver transplantation; viral hepatitis; paediatric liver disease, acute liver failure and bioartificial liver support devices

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DEPARTMENT OF MEDICINE

DIVISION OF INFECTIOUS DISEASES AND HIV MEDICINE

(Partners include the Groote Schuur ID Unit, GF Jooste ID Unit, Desmond Tutu HIV Centre, and the Laboratory of Mycobacterial Immunology [IIDMM])

Head of Division: A/Professor Marc Mendelson

Divisional Profile

The Clinical Infectious Diseases (ID) Unit at Groote Schuur Hospital provides tertiary level care for specialist ID and HIV patients in Medicine, Surgery, Psychiatry, Obstetrics and Gynaecology at Groote Schuur and UCT's secondary level hospitals. We run a busy inpatient consult service and an HIV outpatient clinic. The work of the Division is intimately linked to the NHLS departments of Microbiology and Virology, providing a comprehensive ID service. A team of HIV counsellors, infection control nurses and clinic staff provide vital ancillary services to the Division. A collaborative initiative between the ID unit and that of, the Paediatric HIV unit (Dr P Roux) and HIV Neuropsychiatry (Dr John Joska) is in operation to expedite, optimize and increase access to ARV treatment at Groote Schuur and outreach sites. This initiative is generously funded by the Presidential Emergency Plan for AIDS Relief (PEPFAR) through the Anova Health Institute, part of the Wits Health Consortium.

GF Jooste Hospital serves a population of 1.3 million people with local HIV prevalence levels of approximately 30% and TB rates in the local population in excess of 1600/100,000. The hospital offers two main areas of HIV care:

- Consultation service to HIV positive patients or patients with complicated infectious diseases admitted to GF Jooste hospital wards.
- HIV Referral Unit: This clinic provides support to all primary ART clinics in the hospitals catchment area (>12,000 patients on ART - approximately 36% of all patients on ART in the Western Cape). The Unit is able to help support primary ART clinics in both the work-up of complicated patients who require ART as well as provide help when patients develop new opportunistic infections, immune reconstitution syndromes or drug complications after starting ART

The major research thrusts of the division are in HIV and Tuberculosis. Specific research areas are outlined below

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------|-----------|
| Associate Professors | 3 |
| Senior Lecturers | 3 |
| Registrars | 3 |
| Research Medical Officer | 2 |
| Total | 11 |

Honorary Staff

| | |
|------------------------------|----------|
| Honorary Professor | 2 |
| Honorary Senior Lecturer | 2 |
| Honorary Lecturers | 2 |
| Honorary Research Associates | 3 |
| Total | 7 |

Research Fields and Staff

Dr Helga Antonissen

Occupational exposure to blood/body fluid exposures; the relationship between the HIV positive health care workers and their susceptibility to infectious diseases, especially TB in the workplace.

Associate Professor Linda Gail Bekker

Phase I-III clinical trials in HIV prevention strategies. Research focus on HIV and TB interaction in the field. Operational research interest in antiretroviral programs and adherence strategies and training of lay HIV counsellors. Significant interest in adolescent HIV prevention.

Dr Rosie Burton

HIV-related pulmonary hypertension, Pandemic Influenza H1N1 in Pregnancy

Dr Armin Deffur

Role of networks in bioinformatics; Utility of 16s Ribosomal PCR in diagnosis of bacterial meningitis.

Dr Joe Jarvis

Clinical trial of Immunotherapy for Cryptococcal Meningitis, Prevalence and natural history of cryptococcal antigenaemia in HIV positive patients.

Dr John Joska

Neurocognitive disorders in HIV, mental health services, neuropsychiatry

Dr Chris Kenyon

Psychology of HIV denialism; Climate Change and Health in South Africa; Optimal strategies of Health Care Rationing in South Africa; HIV-related Polymyositis

Associate Professor Steve Lawn

HIV-associated tuberculosis. Tuberculosis and mortality within antiretroviral treatment programmes.

Dr Graeme Meintjes

Wellcome Trust Fellow and Senior Lecturer. Major research area is the TB-Immune Reconstitution Inflammatory Syndrome (TB-IRIS): MRC-funded randomised controlled trial of prednisone vs placebo for the treatment of mild and moderate TB-IRIS; Clinical, proteomic and genomic characterisation of the immune reconstitution inflammatory syndrome in HIV-associated tuberculosis. Aetiology of clinical deterioration in patients on TB treatment; cryptococcal meningitis.

Associate Professor Marc Mendelson

GeoSentinel Travel Surveillance. Communicable Diseases for World Cup 2010, Novel diagnostics for tuberculosis – biomarker discovery; Occupational exposure to blood borne viruses, Renal transplantation in HIV-positive patients.

Dr Mishal Pandie

The effect of immune reconstitution on gut microflora;

Dr Molebogeng Rangaka

Wellcome Trust Fellow. Epidemiology and treatment of tuberculosis in HIV-infected patients; the role of isoniazid preventive therapy in reducing TB infections in patients starting highly active antiretroviral treatment.

Dr Kevin Rebe

Men's Health Project – Cape Town. Recruitment and retention strategies for men having sex with men in HIV vaccine research; Adjunctive Interferon-gamma treatment for Cryptococcal Meningitis.

Dr Helen van der Plas

Outcome of HIV-TB co-infected patients starting antiretroviral therapy in hospital.

Dr Katalin Wilkinson

Senior Investigator Scientist at the National Institute for Medical Research, Mill Hill, London (Medical Research Council UK), seconded to the Institute of Infectious

Disease and Molecular Medicine. Research interest is the immunology of tuberculosis.

Professor Robert Wilkinson

Director University of Cape Town Clinical Infectious Diseases Research Initiative, Wellcome Trust Senior Fellow (Chair of Infectious Diseases) at Imperial College London and an MRC Programme Leader at the National Institute for Medical Research, Mill Hill, London, UK (both posts held at UCT). Major research interest is tuberculosis.

Professor Robin Wood

Director of clinical trials of novel antiretroviral drugs; HIV-associated tuberculosis; HIV modelling; large scale rollout of antiretroviral therapy at primary care; mortality within antiretroviral programmes.

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DEPARTMENT OF MEDICINE DIVISION OF LIPIDOLOGY

Head of Division: Professor A.D. Marais

Divisional Profile

Lipidology is a division of the Department of Medicine that performs the following functions within the limits of funding, staff and facilities: expert clinical consultation, specialised laboratory diagnosis, clinical research including drug development studies with the pharmaceutical industry, and laboratory research with students and on contract with industry. The staff, service and research are funded chiefly by contract research but there is support from the Medical Research Council. The clinical research describes the severe dyslipidaemias occurring in the public health sector of the province but includes some referrals from the private sector and academic institutions in the country. The laboratory research involves the setting up of cost-effective special assays for diagnosis of severe dyslipidaemias. The pharmaceutical studies are for the development of lipid modifying agents in severe dyslipidaemia and their effect on the carotid artery intima-media thickness.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------|-----------|
| Professor | 1 |
| Consultants | 1 |
| Medical Officers | 2 |
| Nursing sisters | 3 |
| Contract Dietitian | 1 |
| Sonographers | 2 |
| Laboratory Technologists | 2 |
| Junior Lecturer | 1 |
| Technical Support Staff | 1 |
| Administrative Staff | 1 |
| Total | 15 |

Students

| | |
|--------------|----------|
| Doctoral | 0 |
| Masters | 1 |
| Total | 1 |

Research Fields and Staff

A.D. Marais, S. Jones, D J Blom, B C Brice, K H Wolmarans, R J Jooste

Severe dyslipidaemias including Familial Hypercholesterolaemia, Dysbetalipoproteinaemia, chylomicronaemia.

K. H. Wolmarans, J.E. Freislich, Z. Behardien, A. D. Marais

Carotid intima-media thickness in dyslipidaemic patients

D.J. Blom, S. Jones, B D Ratanjee, A. D. Marais

Dysbetalipoproteinaemia. Lipodystrophy.

D J Blom, K H Wolmarans, B Brice, R.J. Jooste, P.L.E. Cowie, AD Marais.

Anti-sense oligonucleotides for limiting LDL production in homozygous familial hypercholesterolaemia and refractory heterozygous familial hypercholesterolaemia

D.M.Blackhurst, A. D. Marais.

Anti-oxidant effects of wine.

A D Marais, Brice BC, Wolmarans KH, Blom DJ, Jones S, Ratanjee BD in Collaboration with Prof G Lambert,

Heart Research Institute, Sydney, Australia. Plasma PCSK9 levels in familial hypercholesterolaemia.

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DEPARTMENT OF MEDICINE

DIVISION OF NEPHROLOGY AND HYPERTENSION

Heads of Division: Associate Professor B.L. Rayner

Divisional Profile

Currently the new division offers a wide range of clinical services including chronic and acute dialysis, renal transplantation, assessment and treatment of a broad range of kidney disease and resistant hypertension, 24 blood pressure monitoring renal biopsies, prevention of chronic kidney, and cardiovascular risk assessment. The unit is now supported by a dedicated team of transplant surgeons. Treatment is offered to both private and indigent patients. It also offers out reach programmes to Khayelitsha Community Health Centre and GF Jooste Hospital locally, and to George Hospital, the Northern and Eastern Cape.

The division supports the Department of Medicine training of medical students, specialist physicians and professions allied to medicine as well as training specialist nephrologists.

The main academic research activities of the division relate to renal bone disease, transplant immunosuppression, treatment of systemic lupus erythematosus (SLE), the R563Q mutation of the epithelial sodium channel and its relationship to hypertension, genetics of salt sensitive hypertension, diabetic nephropathy, classification, genetics and treatment of HIV associated nephropathy, bioinformatics to detect candidate genes for salt sensitive hypertension, the genetics of ACE inhibitor related angioedema in black and coloured South Africa, treatment of renal artery stenosis due to atherosclerosis and the effects of antiviral treatment on BP in patients living with HIV. Dr Erika Jones successfully completed her doctoral dissertation on the R563Q mutation.

Divisional Statistics

Permanent and Long-term Contract Staff and students

| | |
|----------------------|-----------|
| Associate Professors | 2 |
| Senior Lecturers | 2 |
| Emeritus Professor | 1 |
| Senior registrar | 3 |
| Part-time consultant | 1 |
| Medical officers | 3 |
| Medical registrars | 3 |
| PhD Students | 1 |
| Total | 16 |

Research Fields and Staff

(i) Associate Professor C.R. Swanepoel

Contract research:

- a) Investigating the effect of CERA on the haemoglobin in patients on maintenance haemodialysis. Designation: PI
- b) An open randomized controlled parallel group, Phase III study to investigate the safety and efficacy of ferrogate and sevelamer hydrochloride in haemodialysis patients with hyperphosphataemia. Designation: National PI
- c) Randomised, Double-blind, Multi-centre, Withdrawal Study comparing MCI-196 versus Placebo in Chronic Kidney Disease Stage V Subjects on Dialysis with Hyperphosphataemia (Incorporating a Randomised 12 week Open-label Dose Titration Period with MCI-196 or Sevelamer). Designation: National PI.

Conferences and presentations:

- a) **Swanepoel CR.** Diabetic Nephropathy. 6th FME Middle East and Africa Nephrology Forum. Berlin. July 2009.
- b) **Swanepoel CR.** Anaemia management in predialysis CKD patients. Current trends and controversies in CKD. Amgen educational symposium, Prague, November 2009.
- c) Nephrology at the Limits, Cape Town, 2009

Non-peer reviewed publications:

- a) Swanepoel CR. Renal Platform: The predialytic treatment of chronic kidney disease. The Specialist Forum. 2009; 9(10) :40- .48.

Special points:

- A) President of the South African Renal Society

Chapters in books:

- a) **Swanepoel CR** et al. Nephrotoxins in Africa. In Clinical Nephrotoxins, 3rd Edition . Edited by M E De Broe G A Porter. Kluwer 2008 pg 859 -870

ii) Dr Z Barday

Contract research:

- a) Abatacept in Lupus Nephritis - 1 patient in open label phase
- b) Ramipril/Placebo in renal transplant patients converted to Sirolimus
- c) Advagraf once daily vs Prograf in new renal transplants

Conferences and presentations:

- a) CMV in Renal Transplants patients at GSH - presented at SATS Sep 09.
- b) World Conference in Milan in May 09
- c) Fresenius Forum on Diabetes and Renal Disease in Berlin in July 09

- d) Everolimus Meeting in Singapore in July 09.
- e) Nephrology at the Limits, Cape Town, 2009

iii) Dr Yvonne Trinder

Contract research

Study No. CSPA1002305. An 8 week double-blind, multicenter, randomized, multifactorial, placebo-controlled, parallel-group study to evaluate the efficacy and safety of aliskiren administered alone and in combination with amlodipine in patients with essential hypertension

Clinical Study Protocol CSPA100A2307 A randomized, 32 week double-blind, parallel-group, multicenter study to compare the efficacy and safety of initiating treatment with combination (aliskiren/amlodipine) therapy in comparison with the sequential add-on treatment strategies in patients with essential hypertension

Congress presentations:

- i) European Aspirin Symposium, Moscow, 2009

iv) Dr Ike Okpechi

Contract research:

- a) A randomized, double blind, placebo-controlled, parallel group study to determine whether, in patients with type 2 diabetes at high risk for cardiovascular and renal events, aliskiren, on top of conventional treatment, reduces cardiovascular and renal morbidity and mortality
- b) ACT 402 – Phosphate Binder trial (Sub-investigator)

Research Activities:

- a) Bioinformatics approach to hereditary interstitial nephritis
- b) Quality of life in Haemodialysis/CAPD patients
- c) Prevalence of the Metabolic syndrome and effects of dialysis on metabolic syndrome traits in GSH dialysis patients

Conferences and presentations:

- a) Nephrology at the Limits, Cape Town, 2009.

Peer Reviewed Publications:

- a) Okpechi IG, Kadiri S, Salako BL, Rayner BL. Renal acid excretion in hypertensive black Africans. Nephrology Reviews 2009; 1: 5-7

Special points:

- a) Successfully completed PhD entitled: Metabolic syndrome, the leptin gene and kidney disease in non-diabetic black South Africans.
- b) Passed Certificate of Nephrology

v) Dr Erica Jones

Special point:

- i) Successfully completed her PhD dissertation: The R563Q Mutation of the Epithelial Sodium Channel: Prevalence and Effect

vi) Associate Professor Brian Rayner

Contract Research:

- a) As for Dr Trinder and Dr Okpechi
- b) National Principal Investigator (PI) for Altitude Study

Conferences and Presentations:

- a) World Congress of Nephrology, Milan, 2009
- b) European Society of Transplantation, Paris, 2009
- c) SA Transplant Society Conference, Spier Estate, 2009
- d) Organiser of the Nephrology at the Limits, Cape Town 2009
- e) Investigator Meeting for CORAL Study, Orlando, 2009
- f) European Aspirin Symposium, Moscow, 2009
- g) Peritoneal Dialysis Academy, Zebula 2009.

Research Work:

- i. Cardiovascular outcomes in renal atherosclerotic lesion (CORAL Study):
A prospective, multi-center, unblinded, two-arm, randomized trial
- ii. The R563Q mutation of the epithelial sodium channel
- iii. Genetics of salt sensitive hypertension (PhD dissertation)
- iv. Bioinformatics to detect candidate genes salt sensitive hypertension
- v. The genetics of ACE inhibitor related angioedema in black and coloured South Africa
- vi. The effects of antiviral treatment on BP in patients living with HIV
- vii. HIV associated nephropathy

Peer reviewed publications:

- i. Rayner B. Do inhibitors of the renin-angiotensin system prevent chronic kidney disease? Editorial. Cardiovasc J Africa 2009; 20: 372-5.
- ii. Rayner B, Schoeman HS. A cross-sectional study of blood pressure control in hypertensive patients in general practice (the I-TARGET study). Cardiovasc J Afr 2009; 20: 224-7.
- iii. Okpechi IG, Kadiri S, Salako BL, Rayner BL. Renal acid excretion in hypertensive black Africans. Nephrology Reviews 2009; 1: 5-7

Non-peer reviewed publications

An overview of angiotensin receptor blockers, Specialist Medicine and Stroke and Cardiology, 2009

vii) Dr Craig Arendse

Research:

- a) Acute dialysis in HIV positive patients in Cape Town South Africa.
- b) Prospective observational study of all HIV positive patients who undergo a renal biopsy at GSH hospital to establish best medical management, mortality and spectrum of disease.

Conferences and presentations:

- a) South African Transplant Society Conference, Spier Estate, 2009.
- b) Nephrology at the Limits, Cape Town, 2009.
- c) Opening speech at the opening of NRC unit in Mitchell's Plain with Minister of Health (Theunis Botha) and Premier of W. Cape (Helen Zille)

viii) Dr Nicola Wearne

Research work:

- a) Retrospective analysis of all HIV positive renal biopsies between 2004 and 2008 at GSH hospital.
- b) Prospective observational study of all HIV positive patients who undergo a renal biopsy at GSH hospital to establish best medical management, mortality and spectrum of disease.
- c) HIV related renal disease: Histological Classification.
- d) Randomised controlled study: Treatment of HIV +ve patients with confirmed HIVAN on renal biopsy with Corticosteroids.
- e) Epidemiology of renal dysfunction and chronic kidney disease in HIV positive HAART naïve patients

Conferences and Presentations:

- a) Peritoneal Dialysis Academy, Zebula, 2009
- b) Nephrology at the Limits, Cape Town, 2009
- c) Thursday forum, Dept of Medicine, 2009, and MFS. Invited speaker – HIV and the kidney
- d) Retrospective analysis of all HIV positive renal biopsies between 2004 and 2008 at GSH hospital. Research Day, 2009.

ix) Dr Bonginkosi Mahala

Conferences and presentations:

1. Nephrology at the limits, Cape Town, 2009
2. Peritoneal Dialysis Academy, Zebula, 2009.
3. Harvard Nephrology Course, Boston, 2009
4. CORAL Investigator meeting, Orlando, 2009

Research:

- a) Retrospective analysis of biopsy proven focal segmental glomerulosclerosis
- b) MYH9 polymorphisms and susceptibility to FSGS, HIVAN and hypertensive nephrosclerosis

x) Stella Alagbe

Research:

a) New Onset Diabetes in renal transplant recipients

Conferences:

a) Nephrology at the Limits, Cape Town, 2009

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DEPARTMENT OF MEDICINE

DIVISION OF NEUROLOGY

Head of Division: Associate Professor R.W. Eastman

Divisional Profile

A general clinical neurology service is operated at Groote Schuur hospital. This provides a full range of clinical activities, including in-patients, out-patient, consultative, and emergency services. Additionally, there is a clinical neurophysiology laboratory, a dedicated acute stroke unit, and specialised clinics for stroke, myasthenia gravis, HIV neurology, neuro-genetic disorders and epilepsy.

Areas of research include:

Stroke: The division runs a 6-bed acute stroke unit and maintains a database on stroke patients. In collaboration with the Swedish International Development Agency and the Department of Geriatrics, stroke outcomes and rehabilitation are being studied at both tertiary and district healthcare sites. A community-based model of stroke care is being developed. The vasculopathies associated with HIV/AIDS are being studied prospectively. Stroke education courses are given to healthcare workers. Close links and co-operation with a variety of international stroke organisations are maintained.

Myasthenia gravis: A large cohort of patients is being treated and followed at a dedicated clinic. In addition, specialised studies in progress are; clinical studies to assess the cost-effectiveness of therapies; the psychiatric manifestations of thymoma-associated myasthenia (with Department of Psychiatry); the complement regulation in patients with DAF promoter single nucleotide polymorphisms (with Department of Cell Biology); and a multi-centre randomized study comparing thymectomy with no thymectomy (international study funded by National Institutes of Health, USA)

HIV/AIDS: In addition to a specialised clinic for general HIV/AIDS – related neurological disease, a number of specific projects are in progress, including the following:

- (1) a longitudinal prevalence study of HIV neuropathy and associated risk factors (with Emory University, USA, and the Division of Endocrinology);
- (2) the management of painful HIV neuropathy (with Department of Family Medicine);
- (3) a study of mitochondrial DNA haplotype and susceptibility to HIV neuropathy (with Vanderbilt University, USA, and Department of Pharmacology);

- (4) a longitudinal study of HIV-associated cognitive impairment (with Department of Psychiatry);
- (5) the neurological complications of Clade C HIV disease (with Department of Virology).

Dementia: A longitudinal study of cognitive impairment in the elderly, with emphasis on a wide range of factors including the pro- and anti-inflammatory features of the condition, plus an imaging volumetric study of brain regions (with the Imaging Research Unit).

Neuro-genetics: A clinical and counselling service, with a study into the social effects of predictive testing for Huntington’s disease

Multi-media teaching: The use of clinical encounter simulations is being explored.

Drug trials: The division is active in phase 3 drug trials for Parkinson’s disease, epilepsy and multiple sclerosis.

Divisional Statistics

Permanent and Long-term Contract staff

| | |
|----------------------------------|----------|
| Associate Professors (Full-time) | 5 |
| Senior Lecturers (Full-time) | 1 |
| Lecturers (Part-time) | 2 |
| Total | 8 |

Postgraduate Students

| | |
|----------------------|-----------|
| M. Med (Neurology) | 3 |
| M. Med (Psychiatry) | 1 |
| M. Sc. | 6 |
| MA (Neuropsychology) | 1 |
| M. Med (Family Med) | 1 |
| M. Phil | 1 |
| Total | 13 |

Research awards

Research fellows in the division have won the Claude Leon Postdoctoral award, the Levi-Montalcini IBRO award, the CIDRI Postgraduate Scholarship award, and the Canon Collins Trust award.

Research Fields and Staff

Associate Professor R.W. Eastman

Epilepsy; clinical neurophysiology, epilepsy surgery.

Associate Professor B. Kies

Parkinson's disease; clinical trials, neurology education.

Dr E. Lee Pan

Health systems information technology; multi-media teaching.

Associate Professor A. Bryer

Stroke; neuro-genetics.

Associate Professor M. Combrinck

Neuro-inflammation, HIV encephalopathy, cognitive impairment in the elderly

Associate Prof J. Heckmann

Myasthenia gravis, HIV neurological disease, HIV neuropathy, neuro-immunology, neuro-genetics.

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DEPARTMENT OF MEDICINE DIVISION OF CLINICAL PHARMACOLOGY

Head of Division: Professor Gary Maartens

Divisional Profile

The major research thrusts of the division are focused on malaria, tuberculosis and HIV. The research in these fields is broad and encompasses drug discovery, pharmacokinetics, pharmacogenomics, clinical trials, pharmacoepidemiology, and pharmaco-economic evaluation. The analytical laboratory plays a key research role with small animal models for drug discovery and in patient samples for drug concentrations. A large multicentre malaria clinical research group headed by Prof Karen Barnes has secured substantial funding from the Gates Foundation and the Global Fund – this programme is at the forefront of translational malaria research in Africa. The MRC South African Traditional Medicines Research Group is a drug discovery programme: Prof Kelly Chibale, Dept Chemistry, UCT and Prof Peter Smith from our division are co-directors. Compounds with antimalarial, antibacterial (including antitubercular) and antifungal activity are identified and optimised from plants used in traditional medicine. Dr Helen McIlleron heads our clinical pharmacokinetic group, which conducts a series of pharmacokinetic studies evaluating antitubercular drugs, and the interaction between rifamycins and antiretroviral drugs in adults and children has commenced with funding from the Wellcome Trust, MRC, Department of Health and the EDCTP. Our collaboration on population pharmacokinetics with Uppsala University is ongoing and our research group is flourishing – this year we set up a pharmacometric laboratory to perform these complex analyses.

Divisional Statistics 2009

PERMANENT AND LONG TERM CONTRACT STAFF

| | |
|-----------------------------------|-----------|
| Professor | 2 |
| Associate professors | 2 |
| Senior Lecturers | 2 |
| Senior research officer | 1 |
| Registrars | 3 |
| Technical Support Staff | 9 |
| Quality assurance manager | 1 |
| Information pharmacists | 4 |
| Editor SAMF | 1 |
| Clinical trial monitors | 2 |
| Administrative and Clerical Staff | 9 |
| Laboratory Assistants | 1 |
| TOTAL | 37 |

HONORARY STAFF

| | |
|------------------------------|----------|
| Honorary professor | 1 |
| Honorary Lecturers | 2 |
| Honorary Research Associates | 1 |
| TOTAL | 4 |

POSTGRADUATE STUDENTS

| | |
|---------------|-----------|
| Post Doctoral | 1 |
| Doctoral | 13 |
| Masters | 1 |
| TOTAL | 15 |

RESEARCH FIELDS and Staff

Barnes, KI.

Malaria, combination antimalarial therapy – operational and policy research. Antimicrobial pharmacokinetic studies to inform optimal dosing in vulnerable populations

Blockman, M.

Rational and cost-effective prescribing of medicines; drug utilisation review; adverse drug reaction monitoring; drug policy and regulation

Campbell, WE.

Phytochemical studies on indigenous Amaryllidaceae species; structural studies on active compounds isolated from traditional medicinal plants

Cohen, K.

Antiretroviral pharmacokinetics and efficacy; pharmacokinetics of antiretrovirals in tuberculosis; pharmacoepidemiology.

Gabriels, G.

Analytical Chemistry, Pharmacokinetics, Traditional Medicines, Drug Discovery and Development, Drugs and Sport Performance

Maartens, G.

Adherence to antiretroviral therapy; immunopathology & diagnosis of HIV-associated tuberculosis; pharmacokinetics of antiretrovirals in tuberculosis; pharmacoeconomic evaluation of antiretroviral therapy

McIlleron, H.

Pharmacokinetics and pharmacodynamics of anti-tuberculosis drugs; population pharmacokinetics; drug interactions between antiretrovirals and rifamycins.

Smith, P.J.

Mechanisms of antimalarial drug resistance; pharmacokinetics of anti-tuberculosis drugs; isolation of novel drugs from traditional medicines; development of new drug assays.

Wiesner, L.

Pharmacokinetics of antimalarial drugs; drug assay development; metabolite identification; drug formulation.

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DEPARTMENT OF MEDICINE DIVISION OF RHEUMATOLOGY

Head of Division: Professor Asgar Ali Kalla

Divisional Profile

The Division of Rheumatology has several research interests relating to different aspects of the rheumatic diseases. Osteoporosis is an area of interest for many years and there is ongoing collection of longitudinal bone mineral density data in patients with rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). Age-related bone loss at different skeletal sites is being prospectively studied in collaboration with the Department of Nuclear Medicine and the Endocrine Unit. Clinical drug trials are in progress to study the safety and efficacy of the newer non steroidal anti inflammatory drugs (NSAIDS), in collaboration with the GIT Unit. These newer COXIBS are being evaluated in patients with RA and osteoarthritis (OA). All of these include collaborative participation with the GIT Unit, where gastropathy is an outcome variable, measured by gastroscopy. Recently, the trials of coxibs have included cardiovascular outcomes as well. We have also been looking at SLE genetics in collaboration with the Hepatology Unit at UCT. Newer areas of research include the study of chronic tophaceous GOUT; community aspects of diagnosing and treating rheumatic diseases at CHC's; early rheumatoid arthritis; genetics of bone loss in SLE; and functional problems in ankylosing spondylitis. The rheumatic diseases unit provides in- and outpatient rheumatology services for the entire Western Cape region. Sessions are carried out at the Heideveld and Khayelitsha Community Health Centres 6 times a year. Training is provided on a continuous basis for medical students, allied health professionals, a senior house officer, two rotating medical registrars and two career registrars. Research is largely clinically orientated, but a laboratory-based approach is being used to study the genetics of SLE and the differentiation between flares and infection in SLE patients. Family studies have also been started in patients with SLE and RA. In addition, there is very significant involvement in clinical drug trials in rheumatoid arthritis, systemic lupus erythematosus and osteoarthritis. Collaborative research is being carried out with the Liver Unit to study bone density in auto-immune hepatitis.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|----------|
| Professor | 1 |
| Lecturers | 2 |
| Research Staff | 2 |
| Nurse practitioner | 1 |
| Administrative and Clerical staff | 1 |
| Total | 7 |

Honorary Staff

| | |
|--------------------|---|
| Honorary Lecturers | 3 |
|--------------------|---|

Students

| | |
|----------------------------|----------|
| Rotating Medical Registrar | 2 |
| Medical Officers (SHO) | 1 |
| Total | 3 |

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