SCHEDULE OF MEDICAL RESEARCH
GRANTS AND SCHOLARSHIPS AWARDED FOR 2012

Kidney Health Australia's vision
An Australia free from kidney and urinary tract disease.

The cornerstone of any effective prevention program is a thorough understanding of the problem or condition you are trying to prevent.

SUPPORT FOR KIDNEY RESEARCH

Kidney Health Australia is the main non-government supporter of kidney and urinary tract biomedical research in Australia. In 2010 the Board of Directors determined that in the future there should be a shift in the focus of our research support program towards project grants in the public health area of CKD and away from direct support of individuals and investigator driven research.

A total of sixty-one applications were received by Kidney Health Australia for funding support in the calendar year 2012. Our Medical and Scientific Advisory Committee awarded sixteen separate grants and scholarships to the value of $476,749 into kidney related research projects in University departments, medical research institutes and hospitals throughout Australia. Support to investigator driven research totalled $371.749, plus an additional $75,000 funding for strategic targeted research.

In 2012 our Nursing Scholarship program entered its fifth year. This program aims to support Renal Nurses pursuing a Masters Degree, to encourage nurses to pursue a career in renal nursing, in any of its components - clinical practice, education or research - across the continuum of CKD, from prevention to early detection to renal replacement.

Dr Tim Mathew
Medical Director

Investigator Driven Research Grants and Scholars

BIOMEDICAL SCHOLARSHIPS

The new direction of KHA research funding aimed at a public health agenda included the withdrawal of new scholarship offers. The nephrologists are in general well supported in post-graduate study by funds specifically targeted at medical graduates and scientists have access to a variety of sources for PhD support.

These scholarships permit talented researchers to pursue full-time research for up to three years, qualifying them to obtain a doctoral degree or equivalent at the end of this period. Individual scholarships are valued at $24,000 for scientists and $35,000 for medical graduates, per annum. These scholarships that are tax free to the holder are an investment in the future of Australian medicine.

In 2012, one Biomedical Scholarships was awarded continued funding and two were newly awarded scholarships. Funding allocated was valued at $105,000.

We actively encourage students receiving KHA funding, to apply for NHMRC scholarships each year, to make the most of our research dollar.

Sponsored Scholarships: Kidney Health Australia encourages groups and individuals to consider supporting research in this manner. Funding biomedical scholarships is a most valued and meaningful way to ultimately promote better health outcomes in kidney patients. We are always interested in hearing from individuals wishing to donate funds for scholarships or grants. All offers are valued and presented to the Medical and Scientific Advisory Committee for consideration. If you wish to find out more, contact the Medical Director's Office and we would be delighted to discuss this with you.

Continuing PhD scholars for 2012

Dr Scott Wilson supervised by Prof Stephen Harrap (Medical)
Department of Nephrology – University of Melbourne, Royal Melbourne Hospital VIC
Understanding changes in blood pressure in dialysis patients with chronic renal failure – a comprehensive clinical and genetic analysis.

Lay Report

Our study into the 'what', the 'how' and the 'why' blood-pressure behaves the way it does on haemodialysis continues, with 33 patients having undergone in-treatment physiologic profiling. Recruitment continues in-line with the potential of our clinical service and study entry criteria. Early challenges with the sheer quantity of data generated have introduced an interesting additional direction for our research. The initial scope has been expanded to include mathematical methods of continuous pressure modeling that allow us to accurately quantify for the first time significant, but clinically silent swings in pressure that have previously not been reported. We have replicated our observations across the current study population and are in the process of reporting our findings at national and international meetings. Our observations have given us cause to re-evaluate current definitions of intradialytic blood-pressure changes and will form the basis for proposed revisions to these historic conventions. Several papers resulting from this study have been accepted for ANZSN 2011, another for ASN 2011, and a further three are in the submission phase for the High-Blood-Pressure-Research Council of Australia ASM 2011. We remain grateful to Kidney Health Australia for their support of our research and assisting us in the endeavour to improve the quality of haemodialysis we provide for ESKD patients.

Newly awarded scholars for 2012

Dr Kevin Chow supervised by A/Prof Andrew Lew (*Medical)*
Walter and Eliza Hall Institute of Medical Research, VIC
The molecular regulation of monocyte derived dendritic cells

Type 1 diabetes is a common condition that is associated with significant lifestyle burdens and medical complications (involving the kidneys, eyes, nervous system and cardiovascular system). Islet transplantation provides a potential cure to this disease but requires the use of anti-rejection drugs which carry the risk of adverse effects and therapeutic failure. Transplantation of other organs are associated with similar issues. A better understanding of the mechanisms of immune mediated rejection will allow for the potential development of more selective and less problematic anti rejection therapies.

Dr Veena Roberts supervised by Dr Karen Dwyer (*Medical*)
University of Melbourne - St Vincent's Hospital VIC
Reducing chronic kidney scarring

The number of individuals with chronic kidney disease (CKD) is rising exponentially especially in the indigenous population. CKD is often due to renal fibrosis which is the end result of many inflammatory insults in the kidney. In renal transplantation, ischemia reperfusion injury leads to delayed graft function, higher rates of rejection and ultimately renal fibrosis. In the last 10 years, no therapy has been developed to help ameliorate renal fibrosis and the rate of renal graft loss has remained unchanged. We have identified a potential ligand for the A2BR which is involved in the generation of fibrosis. This project will define this interaction in detail and to apply treatment at the appropriate times to prevent renal fibrosis.

SCHOLARSHIPS FOR NURSES PURSUING MASTERS DEGREE

Kidney Health Australia provides grants for Registered Nurses wishing to study for a Masters Degree in Nursing or Public Health. The aim of the program is to encourage nurses to pursue a career in renal nursing in any of its components - clinical practice, education or research - across the continuum of chronic kidney disease from prevention to early detection to renal replacement.

Four renal nurses were awarded scholarships valued at $3,000 each, for a maximum of three years –total of $21,000 for calendar year 2012.

Continuing Nursing scholars for 2012

Miss Marie McIntosh - Master of Nursing - Nurse Practitioner - University of Newcastle, NSW
Mrs Jacqueline Moustakas - Master of Nursing (Research) - Flinders University, SA
Mrs Jane Van Der Jeugd - Master of Nursing - Nurse Practitioner - Flinders University, SA

Newly awarded scholars for 2012

Mrs Wendi Bradshaw - Master in Nursing Practice - Deakin University, VIC
Ms Toni East - Master of Nursing - Nurse Practitioner - Flinders University, SA
Ms Anthony Perkins - Master of Nursing - Advanced Practitioner – University of Newcastle, NSW
Ms Lisa Shelverton - Master of Advanced Clinical Practice - Flinders University, SA

SUMMER VACATION SCHOLARSHIPS

These scholarships are now valued at $3,000 each, and are designed to provide assistance to undergraduates undertaking summer vacation research in the area of kidney and urinary tract.

Miss Electra Tomasio supervised by Dr Aaron Petersen
School of Sport & Exercise Science, Victoria University, VIC
Strength training benefits for wellbeing of kidney failure patients

Patients with chronic kidney disease (CKD) have a severely reduced life expectancy, physical functioning and quality of life, with loss of muscle mass contributing to each. Short term (12 week) resistance training has been shown to improve quality of life and strength in CKD patients; however it is unknown whether a more sustained program could result in further benefits. This study will therefore investigate the effects of an 8 month resistance training program on health, physical functioning, muscle strength and size and quality of life in CDK patients.

Targeted or Strategic Research

This year $75,000 was awarded by the Medical and Scientific Advisory Committee to targeted areas deserving support and assisting Kidney Health Australia in its mission to free Australia of kidney disease.

ANZDATA REGISTRY

The internationally acclaimed ANZDATA Registry has been funded substantially by Kidney Health Australia since its formation. It is one of the major accomplishments of the Australian and New Zealand nephrology community and has contributed importantly to knowledge, planning and best practice in clinical care over many years. For calendar year 2007, MSAC awarded ANZDATA Registry $75,000 annually towards its general operating costs. Learn more at www.anzdata.org.au

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PROJECT GRANTS

Project grants worth $50,000 each for use over 1-2 years were a new addition to the KHA program. The competition was strong and most applications were considered suitable for support should more funds be available.

Previous Project Grants 2011

Chief Investigator: Dr Katrina Campbell
Associate Investigators: Prof Michael Stowasser, Dr Eduardo Pimenta, Ms Emma Hall, A/Prof Nicole Isbel & Prof Carmel Hawley
Nutrition & Dietetic - Princess Alexandra Hospital QLD
Salt intake and risk of heart disease in chronic kidney disease

Lay Report

Cardiovascular disease (CVD) is the leading cause of death in those with chronic kidney disease (CKD), and many risk factors for both CVD and CKD progression are linked to high salt intake. The LowSALT CKD Study, a trial examining the benefits of lowering salt intake in patients with CKD, has been successfully launched with the first cohort currently undergoing phase one of the trial (six week intensive period). Recruitment is continuing and we anticipate that all cohorts will have completed phase one by mid-2012. The investigators have been very fortunate to have been awarded additional funding, which will allow the expansion of the study to a longer term follow up to six months (phase two). This will allow us to assess the long-term effects of sodium restriction and will enhance the application of Phase 1 results into practice.

Chief Investigator: Prof Zoltan H Endre
Co-Investigators: A/Prof Philip Peake & Prof Nick Buckley
Department of Nephrology, Prince of Wales Hospital (University of New South Wales) NSW
Investigating fragments of kidney cells in the urine for markers of kidney injury

Lay Report

We have succeeded in purifying small membrane vesicles, called exosomes, from human urine and have refined and standardised the purification process. Numerous proteins have been identified in the exosomes, including biomarkers of acute kidney injury, such as the molecules NGAL and cystatin C. This is important because the exosome contents reflect the contents of functioning kidney cells. We are now in a position to compare the content of exosomes in urine saved from selected groups of patients after kidney transplantation including those where recovery of function is delayed, patients with abnormally high rates of protein leakage into the urine and normal patients. The results will be prepared for publication in the near future.

Chief Investigator: A/Prof Carmel Hawley
Co-Investigators: Dr Magid Fahim, Prof David Johnson, Dr Scott Campbell, Prof Jonathan Craig & Dr Andrew Hayen
Associate Investigators: Mr Goce Dimeski & A/Prof Richard Troughton
Department of Nephrology, Princess Alexander Hospital (University of Queensland) QLD
A study investigating the role of cardiac hormones in managing patients with chronic kidney disease

Lay Summary Report

Compared with the general population, dialysis patients have a 100-fold increased risk of dying from heart disease mainly because of abnormal heart muscle structure and function. Excess body fluid and high blood pressure are critical risk factors leading to these heart abnormalities. Current tests to identify dialysis patients at high risk are quite inaccurate and ideal blood pressure / body fluid targets are not known. There is an urgent need for a blood test that accurately picks up the early stages of heart injury to allow early and effective treatment. NT-proBNP is a heart hormone released during heart stress. The aim of our research is to develop a monitoring guideline based on regular testing of NT-proBNP to identify high-risk dialysis patients early. Our research study has two parts; both of which have been granted ethics approval. The goal of the first study is to find out how much change occurs in NT-proBNP levels measured weekly and monthly even when dialysis patients are stable and well. This information is important to prevent unnecessary changes to a patient's treatment based when changes in the heart hormone level are insignificant. We intend to enrol 50 haemo- and peritoneal dialysis patients into this study and review then on 10 occasions, each time ensuring they are stable and measuring their NT-proBNP level. To date we have enrolled 46 people. We expect enrolment to be completed by the end of September 2011, and the whole study to be completed in February 2012 after which the results will be presented at national and international medical meetings and published in a medical journal. The second phase of our research is aimed at finding out how much change in NT-proBNP levels checked monthly will predict ill-health in dialysis patients and how accurate this test is. We will achieve this by reviewing 150 haemo- and peritoneal dialysis patients monthly for 2-years and correlating changes in the hormone levels with the patients' health, heart function and fluid state. To date we have recruited 60 patients for this study and expect to complete recruitment by October 2011. Once both studies are completed, their results will be used to write a monitoring guideline for regular testing of NT-proBNP in dialysis to identify high-risk dialysis patients early; this will enable treatment before a serious medical complication occurs, potentially improving patient outcomes on dialysis. The generous financial support provided by the Kidney Health Australia Project Grant has been instrumental in funding costs of analysing blood tests, supporting a research nurse salary and performing heart scans; all of which are crucial to the successful completion of this important project.

Chief Investigator: Dr Wai Lim
Co-Investigators: Prof Richard L Prince, Dr EE Mun Lim, Dr Joshua R Lewis, Dr Sharan Dogra
School of Medicine and Pharmacology, Sir Charles Gairdner Hospital (University of Western Australia) WA
Renal function, vascular calcification and atherosclerotic vascular disease

Lay Report
In our study, we have demonstrated that reduction in kidney function is associated with an incremental risk of heart and blood vessel-related problems and measuring kidney function in older individuals may help identify those at risk for such events.

Newly awarded Project Grants for 2012

Thirty-two applications were received with five awarded funding by the Medical and Scientific Advisory Committee with a total funding of $242,749.

Chief Investigator: Ms Rachel Morton
Co-Investigators: Dr Nicholas Gray & Prof Peter Kerr
Associate Investigators: A/Prof Kirsten Howard, Dr Paul Snelling & Dr Angela Webster
School of Public Health, Sydney Medical School – University of Sydney NSW
PINOT follow-up study

In 2009, a national study of treatment options for patients with stage 5 chronic kidney disease (PINOT) found 60% of new patients started on in-centre haemodialysis despite plans for home based dialysis. The above-mentioned study also found that 14% of patients planned to forgo dialysis in preference for conservative treatment. The aims of the PINOT 5-year follow-up study are to firstly determine what proportion of patients who planned for home haemodialysis or peritoneal dialysis, actually made the transition to home dialysis; and second to determine what proportion of patients who planned for conservative care, actually started dialysis, or underwent a time-limited trail of dialysis within 3 and 5 years. Methods: Renal clinicians from the 66 participating renal units will complete a brief survey detailing each of the original incident patients' current and past dialysis treatments and mortality status. Data will be collected at the 3 and 5 year follow-up time period (i.e. September 2012 and 2014). Significance: The results from this study will enable more accurate estimates of dialysis resources use in economic modelling of stage 5 CKD and inform policy for the transition to home dialysis, as well as policy to provide appropriate palliative resources for end-of-life-care.

Chief Investigator: Dr Lynelle Moon
Co-Investigator: A/Prof Stephen McDonald, Ms Frances Green & Ms Claire Sparke
Health Group, Australian Institute of Health and Welfare (AIHW) ACT
Agreement of hospital admitted patient diagnoses with cause of death diagnoses for patients with end-stage kidney disease

To use linked hospital diagnosis and mortality cause of death data from New South Wales and Western Australia to assess the likelihood of a patient who has been hospitalised with a diagnosis of end-stage kidney disease (ESKD), and who subsequently dies, having ESKD listed as a cause of death on their death certificate.

Chief Investigator: Dr Martin Gallagher
Other Investigators: Prof Alan Cass, Dr Sradha Kotwal & Dr Angela Webster
Renal and Metabolic Division, The George Institute for Global Health NSW
Outcomes and burden of renal disease in NSW

The number of Australian with chronic kidney disease (CKD) and End Stage Kidney Disease (ESKD) continues to rise inexorably. As distance from nephrology services increases there is evidence that outcomes are worse from CDK patients, with variable effects upon outcomes for ESKD patients. There have been no studies looking at the comparison of the burden of CDK and ESKD between rural and urban NSW. We aim to compare the disease burden, access to care and health outcomes of CKD and ESKD in rural versus urban NSW.

Chief Investigator: Dr Germaine Wong
Co-Investigators: Prof Jonathan Craig, Dr Steven McTaggart & Dr Allison Tong
Associate Investigators: Dr Gabrielle Williams, A/Prof Kirsten Howard, Dr Andrew Hayen & A/Prof Philip Clarke
Centre for Kidney Research, Kids Research Institute, the Children's Hospital at Westmead NSW
Wealth and health in kids with CKD

The inverse relationship between socio-economic status and chronic illness is well established in the adult population. The link between wealth, social inequality and the health of children and adolescents with chronic kidney disease is unknown. This proposed program of work will examine the novel relationship between macro economic measures such as total annual income and income inequality, and the health outcomes of school aged children with chronic kidney disease.

Chief Investigator: A/Prof Nicole Isbel
Co-Investigators: A/Prof Carmel Hawley & Dr Rathika Krishnasamy
Associate Investigators: A/Prof Grahame Elder, Dr John Coucher, A/Prof Jeff Coombes & Prof David Johnson
Department of Nephrology, Princess Alexandra Hospital QLD
A study investigating relationship between bone and vascular health in patients with Chronic Kidney Disease

Patients with chronic kidney disease (CKD) have a higher risk of cardiovascular disease (CVD). Treatments already in use for CVD may not work as well in CKD patients because of the complex problems these patients suffer such as blood vessel stiffness and calcification. There is evidence of an important link between changes in bone density and CVD in these patients, but a better understanding of how and why these changes occur is needed. We will look at whether a new scan technology using low radiation exposure can detect early changes in the bones of CKD patients that predict their risk of CVD. By detecting these changes earlier, better treatment can be offered to CKD patients for both loss of bone density and heart disease.