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The cardiologist and kidney disease

About one adult in ten, or over 500 million people worldwide, are affected with chronic kidney disease (CKD). This burden is expected to increase in parallel with the increase in diabetes, with the majority of cases occurring in the developing world. Many of these patients with CKD have progressive loss of renal function and will reach end-stage renal disease (ESRD) even if the original insult has been adequately addressed.

What may surprise many is the fact that premature death from cardiovascular disease is a much more common outcome than ESRD! CKD is increasingly being recognised as a very strong risk factor for cardiovascular disease, justifying lower targets for blood pressure and lipid control. In those patients who do survive to reach ESRD, and who have been accommodated on dialysis and transplant programmes, cardiovascular disease again is the leading cause of death.

In 2004 the International Society of Nephrology convened a meeting of experts in Bellagio, Italy, to address the problem of CKD. Organisations represented included the World Heart Federation, International Diabetes Federation, International Atherosclerosis Federation, and the International Society of Hypertension. It was resolved to develop an integrated global response for the prevention and treatment of chronic vascular diseases. The World Health Organisation has also emphasised the need for large coordinated, national programmes for the prevention, early detection and treatment of chronic diseases. These efforts would require government support and cooperation across different medical disciplines.

Against this background it is therefore timely that this issue of the Journal is devoted to the interface between nephrology and cardiology. Hopefully this will be the start of a trend toward more interaction and effective cooperation between colleagues, and professional societies, who often share the same patients as well as similar strategies for prevention and slowing of progression of disease.

In the first article, Davids describes the magnitude and causes of the global epidemic of CKD. The epidemic of diabetes will contribute huge numbers of cases, and these will occur mainly in the developing world, where there are insufficient resources to deal with the most important complications, namely ESRD and advanced cardiovascular disease. In sub-Saharan Africa, a conservative approach to treating ESRD most often applies, with few patients able to gain access to chronic dialysis and renal transplantation.

Katz et al discuss the integrated approach to prevention and treatment programmes for CKD and cardiovascular disease, reviewing the very successful initiative of Wendy Hoy with the Aboriginal Australians in the Northern Territory, and also their own project in Soweto. It is worth mentioning that Dr Nomandla Madala of the University of KwaZulu-Natal (KZN) has just been awarded funding by the International Society of Nephrology for her project on preserving renal function in patients with chronic non-communicable diseases in urban and rural KZN.

Swanepoel focuses on the very topical issue of CKD as a powerful cardiovascular risk factor, pointing out the fact that patients with CKD have a high prevalence of cardiovascular disease as well as a very high mortality rate after acute cardiac events. Patients with CKD have multiple risk factors for the development of atherosclerosis, including several non-traditional risk factors like vascular and valvular calcification, inflammation and malnutrition, chronic anaemia and chronic fluid overload. Most large studies of interventions for coronary artery disease have excluded patients with CKD and it remains unclear what the optimal treatment strategies are for these patients.

Acute renal failure (ARF) is frequently encountered in the cardiac intensive care unit, and its development usually signifies a poor prognosis. Bihl and colleagues offer a practical approach to prevention and management, reviewing such topics as the RIFLE classification of ARF, prevention of contrast nephropathy, and the management of established ARF, including renal replacement therapy.

The article by Adeniyi and Nel on renal involvement in infective endocarditis describes the spectrum of involvement from pre-renal failure to immune complex-mediated glomerulonephritis and provides practical advice on how to differentiate between the various causes.

Patients with severe heart failure have chronic fluid overload combined with poor renal perfusion. The pre-renal failure that develops (the "cardio-renal syndrome") is often exacerbated by our attempts to treat their diuretic-resistant oedema. Krishnan and Oreopoulos have written an article which is likely to generate lots of discussion – they propose chronic ambulatory peritoneal dialysis (CAPD) as an effective means of addressing the volume overload, while possibly having less of a deleterious effect on renal function as compared to aggressive diuretic therapy. In the South African setting, CAPD may well be able to provide a life-saving bridge to patients awaiting cardiac transplantation.

I would like to thank all our contributors for helping to put together an issue that covers a lot of important ground, and which should prove useful to cardiologist and nephrologist alike. Finally, thanks is due to the SA Heart Journal, and its editor Anton Doubell, who first put forward the idea of a "renal issue" and extended the invitation for me to act as guest editor. I hope that this contribution by members of the SA Renal Society to the official journal of the SA Heart Association will be but the first of many fruitful collaborative efforts between our two organisations.