Ongoing gaps in CKD and CVD care: re-evaluating strategies for knowledge dissemination

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Over the last decade, the nephrology community has come to recognize the importance of chronic kidney disease (CKD) as an important modifier of outcomes and of cardiovascular risk. We have attempted to categorize and quantify the risks of dying, having a cardiovascular event and going on to dialysis, and we have published extensively in both nephrology and non-nephrology journals about the importance of CKD in general populations [1–7]. Some jurisdictions have embarked on formal and well-organized education campaigns for general practitioners (GPs) and patients (UK, Canada, Australia, USA) with professional messaging and public campaigns. Guidelines have been written and disseminated [8, 9]. Despite these efforts and the quantity of publications regarding CKD, we have not systematically evaluated the impact of these efforts on quality of care for those persons with CKD.

The paper in the current edition of Nephrology Dialysis Transplantation (27/4) by Razavian et al. describes GP awareness of CKD, gaps in treatment and gaps in prescribing in Australia in 2008, after the implementation of estimated glomerular filtration rate (eGFR) reporting by laboratories and 6 years after the publication of the Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines for CKD definition, evaluation and classification. The study leveraged the infrastructure of the Australian Hypertension and Absolute Risk Study (AusHEART) and describes cardiovascular risk management in CKD in Australian primary care using a nationally representative, cluster stratified, cross-sectional survey among 322 GPs. Each GP was asked to provide data for 15–20 patients over the age of 55 who presented between April and June 2008. Within the study framework, records on 4966 patients were collected, in whom 37% had abnormal kidney function. The study describes the under-recognition of CKD by GPs (only 18% of the overall CKD cohort were correctly identified, with 67% of those being in Stages 4 and 5 and 28% being Stage 3), under-estimation of cardiovascular disease (CVD) risk in CKD patients and, paradoxically, the overestimation of CVD risk in non-CKD patients. Furthermore, the study identified gaps in achievement of targets for hypertension, use of renin-angiotensin system (RAS) blockade and lipid-lowering agents in CKD patients.

The study is meritorious on a number of levels. Firstly, the robust methodology for random sampling of GP practices participating in the AusHEART study, stratified by state and urban/rural locations to reflect the distribution of the Australian adult population, ensures a representative sample of practices. While one may argue that those who volunteered to participate might be the ‘best’ practices, this would only lead to a conservative estimate of the ‘gap’ in knowledge and practice identified in the study. Within that sample, the ability to determine ‘prevalence’ of CKD (albeit using single time point values for eGFR and uACR measurements) adds another important quantitative dimension to the study. Simple one-page questionnaires were given to GPs, which included estimates of CVD risk in each of the patients without specifying how to determine this risk. The authors then compared these GP-generated risks to risk scores generated centrally from Framingham risk equations, which were subsequently adjusted according to two national guidelines that were prevailing at the time of data collection in Australia. This comparison of GP-generated CVD risk compared to ‘formal’ risk equation-generated risk scores allows a unique comparison between GP ‘perception’ and ‘objective’ quantification of risk. The finding that GPs underestimate risk for CVD in CKD patients is surprising given the plethora of data published in high-profile medical journals to the contrary [3, 10, 11].

The documentation of an ‘awareness gap’ as defined by identifying those with CKD correctly (18%) is enlightening for those interested in GP education. The GPs were asked to fill out a ‘yes/no/not known’ CKD question in those in whom laboratory was available at the time of the visit. It is surprising that despite the availability of simple laboratory data, GPs do not identify CKD reliably.

Documentation of blood pressure measurements and medications was collected: the prescribing and treatment gap identified was 59% for CKD patients and 52% for non-CKD patients (P < 0.001). This comparison between CKD and non-CKD patients within the same practice is another important aspect of the due diligence of the study: while gaps in care exist in all patients, the treatment of blood pressure (one of the few evidence-based treatments known to impact progression of CKD) is less reliable in those at highest risk. Overwhelmingly, the study points to a large gap in awareness and treatment of CKD patients within a well-supported, resourced and universally accessible health care system.
The weakness of the study is relative: given the different health care systems that exist around the world, the findings herein may well reflect some of the ‘best’ care by GPs of CKD populations and may not be applicable to other health care systems or countries. Perhaps this should alarm us more than the findings themselves, as there is likely an even bigger gap in countries or regions where health care systems do not provide basic care and medications to the entire population, as occurs in Australia. This paper is one of many, albeit one of the largest and most well-conducted studies, describing this gap in care for and knowledge about CKD populations, which exists both in general as well as specialty practices [12–17].

Why, after almost a decade of CKD publications and public policy initiatives, including education, is there a continued gap in CKD identification and care?

Perhaps we need to critically evaluate the methods by which we implement guidelines, recommendations and screening strategies, of how we disseminate knowledge and how we monitor our efforts in these domains.

Knowledge transfer and implementation of best practices requires a multi-pronged approach [18–20]. Optimizing outcomes for CKD patients requires a formal knowledge transfer mechanism, leveraging our existing expertise in knowledge synthesis, research methodology, and clinical trials. As nephrologists, we are prolific in systematic reviews, meta-analyses, and more recently we have been defining and participating in clinical research studies. We publish guidelines, based on best evidence, and, in some jurisdictions, have even developed a series of educational tools for patients and care providers. However, we have not formulated a formal knowledge translation plan. If our goal is to improve the care and outcomes of patients with and at risk for CKD, we will need to more closely link active clinical practice guidelines committees with relevant knowledge users (GPs, policy makers), establish best practice benchmarks through regular review and data collection, use existing databases or embark on studies such as described above and to track the effectiveness of knowledge translation activity to impact process of care and clinical outcomes for CKD patients. Most importantly, we will need to identify important clinical questions regarding care of CKD patients, so that implementation of best practices is based on best evidence, which may enhance uptake of those recommendations. As one reflects on the last decade of CKD publications, perhaps we have spent a lot of time precisely defining CKD and its nuances and perhaps not enough energy demonstrating that the identification and treatment of early CKD truly impacts care. We have defined risk, quantified risk but have not systematically addressed the issue of how to reduce the risk in CKD patients. We have published a substantial amount of observational data in nephrology journals, which is important, but essentially means we are speaking to ourselves. Recently, we have been publishing in high-profile general medical journals but mostly about the risk of CKD, perhaps without clear messages as to how to mitigate that risk.

Thus, while we have created some awareness of the problem, we may not have been diligent in creating the message that CKD care in the primary care arena, includes vigilant care of CVD risk factors (specifically blood pressure, interruption of the RAS and lipid lowering), and that identification of early stages of CKD may offer the greatest opportunity to impact outcomes. We have the opportunity to conduct large pragmatic trials to answer questions of importance to GPs and patients: does early identification and intervention in CVD impact outcomes? The recent SHARP trial finally offers a clear and consistent message that should be of value to GPs and patients: lipid-lowering therapies reduce atherosclerotic events in CKD populations [21]. Will we be able to translate this message clearly to our primary care colleagues?

The ability to translate knowledge into practice is challenging for all specialties in medicine. The complex biology of CKD and CVD is fascinating to us as nephrologists and specialists. In order to impact care, we need to develop a formal strategy for knowledge translation that includes better educational tools, measurement of the effectiveness of those tools and clear and consistent messaging. Above all, we must commit to a program of clinical trials which demonstrates the effectiveness of specific interventions in patients easily identified as having CKD with simple measurements of serum creatinine and urine ACR, so that the message is more than ‘identify’ and includes ‘identify, treat and improve outcomes’. The paper by Razavian et al. serves to remind us that despite the plethora of publications and guidelines with respect to CKD, there is still a substantial gap between knowledge and implementation. We need to fill that gap.

Conflict of interest statement. None declared.

(See related article by Razavian et al. Cardiovascular risk management in chronic kidney disease in general practice (the AusHEART study). Nephrol Dial Transplant 2012; 27: 1396–1402.)

References


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