

Renal Association Elective Bursary Report

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The main aim of my medical elective was to gain experience in renal medicine in a healthcare system outside of the UK. I was fortunate to spend five weeks in the city of Gosford, New South Wales, Australia. There I worked with the renal team based in the state-owned Gosford District Hospital and surrounding satellite haemodialysis units. During my five weeks I undertook a range of clinical and research activities, spending time with various members of the multidisciplinary team involved in patient care.

Clinical experiences

Gosford Hospital delivers a range of medical, surgical and maternity services to the area and has a busy emergency department. I was therefore able to be involved clerking and management of patients across the hospital with acute and chronic renal failure. Attending daily ward rounds provided a varied and interesting presentations and allowed me to appreciate the diversity of nephrology. For example, I experienced management of a patient with renal cell carcinoma and became acutely aware of the need for holistic social and spiritual care alongside the key elements of fluid balance and electrolyte control.

Further appreciation of holistic care was experienced by spending time with renal dietitians in their initial consultations with new patients and in follow-up education sessions. I was able to observe dietary assessments and became aware of important signs of malnutrition on clinical examination e.g. wasting of particular muscle groups. Additionally, time with the dietitians allowed me to practise my communication skills. Despite the slight English-Australian language barrier, I was able to practise motivational dialogue and became able to adapt my delivery to patients of differing educational levels.

In addition, I was able to observe many clinical procedures required in investigation and management of patients with acute and chronic kidney disease. During this time, I was able to appreciate the technique of renal biopsy, risks of the procedure and the need for informed patient consent. On the haemodialysis wards, I

was also able to observe central line insertion and witness testing of line patency. Experiencing procedures allowed me to better understand the clinical need for interventions, how interventions work and how to explain procedures to patients in the future.

Hyperphosphataemia research

Whilst on my placement, I undertook a departmental audit and service evaluation on high serum phosphate levels in haemodialysis patients. Poor renal phosphate excretion independently contributes to abnormal vascular calcification [1], osteoporosis [2] and mortality in patients undergoing haemodialysis [3, 4]. However, maintenance of normal phosphate levels in patients with end stage renal disease remains a significant clinical challenge. Patients in the hospital and regional units are offered a range of intervention strategies in order to resolve high phosphate levels including dietitian education sessions and phosphate binder medications. As a novel way of managing dietary phosphate, it was proposed by the department to develop a smartphone application to assist patients in titrating their phosphate binder medications to their dietary phosphate intake.

My role consisted of data collection on all patients within the department to determine whether serum phosphate levels were high in the population and assess patient adherence to binder medication prescribed. Furthermore, I assisted the renal dietitian in conducting pre-knowledge questionnaires in a satellite haemodialysis unit. Questionnaires were created to assess dietary phosphate knowledge, experiences of service provision in phosphate management and identify patient preferences to a smartphone application pilot. Patients were consented to data collection and the pilot study was approved by the local ethics committee.

Results from the research showed that the department had a clinical issue with high serum phosphate levels. When compared to National Kidney Foundation's Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines [5], 35% of haemodialysis patients had high serum phosphate in the last three routine monthly blood tests. Self-reported adherence to patients prescribed phosphate binders was 82%, however overestimations by patients may have been present. Encouragingly, most patients were aware of taking binders crushed with high phosphate food. However, critically, only 55% of patients were aware that diet caused high phosphate levels and only approximately 40% of patients knew high-phosphate food groups to avoid. Around 70% of patients reported that they had received education by the department on phosphate, indicating gaps in service provision to up to 30% of the population. When asked about preferences to future intervention strategies, the majority of patients opted for paper resources such as posters and written leaflets

but were open to novel computer-based approaches. It was concluded that in order to improve phosphate control, dietary education was a contributing factor and was in need of improvement. A pilot scheme of new written resources has initially been proposed and would be rolled out initially to a single satellite unit. Integration of information to a smartphone application may be a future strategy but would require cost-benefit analysis from the local health authority.

Overall, I am highly grateful to the Renal Association for assisting in my opportunity to observe renal care in the Australian health system. Although management protocols follow that in the UK, I found it beneficial to witness similarities and continuity of practice across the world. The ability to conduct research into the issue of hyperphosphataemia has also allowed me to appreciate the role of academia in clinical practice and has highlighted the need for interventions in patient care.

References:

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