

Acute kidney injury: responding to the deficits in management and care

John Sedgewick

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Acute kidney injury (AKI) previously known as 'acute renal failure' is associated with increased morbidity, mortality, duration of hospital stay and increased health care costs (Stewart *et al.*, 2009). Sadly, despite the advancements in technology treatment, AKI still has an unacceptable high mortality and morbidity rate. Changing patient demographics has resulted in an increased prevalence of AKI, especially the increasing numbers of older adults with cardiac disease and diabetes (Yaklin, 2011).

Most health care professionals will encounter AKI which is a complex and challenging disorder to manage. AKI is encountered in varied and diverse settings, which pose challenges for clinical teams who may lack the skills and knowledge to manage AKI appropriately. From emergency units to general ward settings through to theatres and critical care units, AKI is encountered. The central role of renal nurses in identifying those at risk is pivotal. Managing haemodynamics and fluid status, nutritional considerations and pharmacological agents in AKI is complex.

The development of earlier detection and management of AKI has been greatly improved through the development of a universal definition and staging. The spectrum of AKI injury extends from less severe forms of injury to more advanced injury, when acute kidney failure may require renal replacement therapy

(RRT). Regardless of clinical setting, the diagnosis of AKI is frequently delayed and when it is detected its treatment and management has been indicated to be less than ideal in the majority of cases (Stewart *et al.*, 2009). Currently there is little data on the incidence of AKI whether it be community- or hospital-acquired. US data on AKI prevalence ranges from 1% (community-acquired) up to 7.1% (hospital-acquired) of all hospital admissions (Molitoris *et al.*, 2007; KIDQO 2011). Interestingly Lafrance *et al.* (2010) identified that a high mortality rate is associated in patients with AKI who did not require dialysis; a higher mortality rate was evident in the most severe forms of AKI.

The importance of health care staff understanding both the risks and triggers for AKI cannot be overstated. Even transient rises in creatinine concentrations are associated in some cases with a risk of death (Uchino *et al.*, 2010). Recognising earlier stages of renal impairment provides the opportunity to initiate appropriate intervention and thereby interrupt decline in kidney functioning. Conventional biomarkers of AKI, for example, urea and creatinine has led to the search for new biomarkers. For example, interleukin 18, Nucleophil Gelatin-Associated Lipocalin is an exciting area of research which may affect timely diagnosis and possibly outcomes in AKI (Dirkes, 2011).

A recent enlightening report in the UK identified serious failings in the care

provided to those with AKI. Published by the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) the 2009 report has acted as a catalyst for a major review of the care and management of AKI. The report *Adding Insult to Injury* has identified systematic failings in care and management of AKI. The report identified that only 50% of patients with AKI had "good care" and that inadequacy in recognising and managing AKI was evident. Thirty-three per cent of patients had inadequate basic examinations and laboratory tests undertaken and risk factors for AKI were poorly assessed. Representatives from the Royal College of Nursing (UK) Nephrology Forum are members of the DoH task force group.

This study recommends that all emergency admissions should have electrolytes and urinalysis checked routinely on admission, with 24-hour access to renal ultrasound. It proposed that a risk assessment for AKI should be part of the initial clerking with referral to specialist advice being sought in a timely manner. The Department of Health (DoH) (UK) initiated a multidisciplinary task force to look at the findings from NCEPOD and work on a number of areas which will help improve AKI care in the future; renal nurses are a central part of this working group.

Continued focus must be on working collaboratively (Murphy *et al.*, 2010) on the prevention of AKI, sepsis management, resuscitation and fluid

Author details: John Sedgewick RN, RMN, Renal Cert, DipN, BSc (Hons), MSc (Nurs), MSc (HSR), Cert ED, RNT, PhD (c) Programmes Director and Principal Lecturer (Nephrology), School of Health and Social Care, Teesside University and the RCN (UK) Nephrology Forum representative on the UK Department of Health Acute Kidney Injury Delivery Group responding to the findings from the National Confidential Enquiry into Patient Outcome and Death, Acute Kidney Injury.

Correspondence to: John Sedgewick, School of Health and Social Care, Teesside University, Cleveland, UK. Tel +441 642 384996 j.sedgewick@tees.ac.uk

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management and to ensure that monitoring plans are in place to detect those patients who may be at risk. Predictable and avoidable AKI should never occur. The importance of identifying and addressing AKI needs to become central to ongoing education programmes. Reviewing admission documentation to ensure that there is a clear consensus as to how AKI should be embedded into admission documentation is vital. Effective education programmes which continue to focus on the essential fundamentals of care, assessment of risk factors, urine dipstick and developing a clearer understanding of referral pathways into renal care is needed. The UK (DoH) task force group has developed a set of AKI competencies which can be integrated into all educational curricular for all professionals involved in the management of AKI.

AKI is a life-threatening clinical problem which requires all members of the care

team to work collaboratively to detect and prevent the downward spiral of renal deterioration once renal injury has occurred (Ali *et al.*, 2011). A key priority in this collaborative working is the development of clear practical guidelines which ensure that all those caring for patients with renal impairment are working towards an agreed set of guidelines for both the staging of AKI but also its subsequent management. The contribution of renal nurses advanced knowledge and expertise in AKI care should not be underestimated. Renal nurses are an important member of the multidisciplinary team ensuring the delivery of high quality care to those with AKI.

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