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The management of acute kidney injury in orthopaedic patients

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Introduction

Acute kidney injury (AKI) affects 20% hospital admissions,[1] is associated with 17% 30-day mortality,[2] and there is increasing evidence that prompt recognition and appropriate management are poor.[2]

Orthopaedic patients, often suffering perioperative blood loss and dehydration, are at high risk of developing AKI with the multimorbid orthogeriatric population being particularly vulnerable.[3]

This quality improvement project aimed to assess compliance to best practice defined by local, NICE and Renal Association guidelines at a busy major trauma centre and to evaluate the improvement of care with the introduction of a new AKI care bundle.

Methods

Data was collected from 49 orthopaedic patients developing an AKI over a 5-week period in the Northern General Hospital, Sheffield. Individuals were identified using creatinine results, and data collected from electronic observations, fluid charts and notes.

We developed a simple mnemonic and AKI care bundle which was introduced in the form of ward posters and stickers in patient notes. A re-audit was then performed on 27 patients with AKI to evaluate the impact of our intervention.

Results

Of the 27 patients in the post-intervention cohort, 48% had our AKI care bundle physically in their notes. The post-intervention cohort had an increase in the number of patients receiving a documented daily AKI review on the orthopaedic ward (59% vs 27%; p=0.010) and daily fluid monitoring in the form of input/output charts (59% vs 29%; p=0.018). The post-intervention cohort had a statistically higher rate of patients receiving a maintenance fluid prescription; (89% vs 53%; p=0.004) and had a statistically higher rate of patients with a urine analysis requested and performed (48% vs 12%; p=0.001). Our results suggest that the introduction of the AKI care bundle led to a clinically but not significant reduction in the number of patients who developed a worsening AKI (7% vs 24%).

Discussion

Our results show that the introduction of a trust AKI care bundle led to an overall improvement in adherence to the AKI best practice guidelines. However, our results did not show an overall reduction in the number of days to recovery from AKI between the pre- and post-intervention cohorts. Future audit cycles should aim to include larger numbers of patients in order to demonstrate significance across more areas. Future cycles should also encourage the increased use of our AKI bundle physically in the patient notes in order to further improve compliance with best practice guidelines as our results suggest that this subset had higher overall levels of compliance with guidelines. ■

References

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