The development and implementation of care pathway for improving contrast induced acute kidney injury prevention on acute medical wards

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Introduction

Contrast induced acute kidney injury (CI-AKI) is a widely recognized clinical problem and the third most common cause of hospital-acquired acute renal failure. Prevention is important as there is no specific treatment and involves identification of patients at risk and giving prophylactic measures.

The aim of this project was to access and improve compliance with national guidance (NICE CG 169) on identifying and preventing patients from CI-AKI following radiological contrast studies at Russells Hall Hospital.

Methods

The first cycle of audit was retrospective review of 44 patient post-contrast studies who had risk factors for CI-AKI admitted between August and October 2015 on acute medical wards. Each participant included was measured against four standards:

1. Identifying patients at risk of CI-AKI prior contrast exposure
2. Giving appropriate counselling regarding CI-AKI and documentation in case notes
3. Offering prophylaxis such as intravenous fluid and stopping nephrotoxic medications
4. Monitoring renal function within 72 hours following scans

The second cycle was conducted in 20 patients in February 2016 after implementation of quality improvement strategies such as data presentation in Trust acute medicine meeting and creation of CI-AKI prophylaxis pathway as a pilot project on acute medical wards.

Results

A total of 44 patients over 60 years were audited initially and mean age was 80 years. 15 patients (34%) had pre-existing CKD (eGFR < 60) and the rest had other risk factors such as advanced age, dehydration, sepsis and malignancies. 10 patients (22.7%) were identified at high risk and given prevention pre and post scans. No patients were discussed regarding risk of CI-AKI. 36 patients (81.8%) had renal functions monitored post-scans. 6 patients (13.6%) developed CI-AKI and 3 of them had CKD.

In second cycle, after the interventions, from 20 patients, 7 patients (35%) had underlying CKD. 17 patients (85%) were recognised at risk of CI-AKI and given prophylaxis. 5 patients (25%) received counselling and documentations in notes. 18 patients (90%) had follow-up renal function and one patient (5%) developed CI-AKI.

We were inferior to compliance with national guidance on CI-AKI prevention in initial audit. After implementation of quality improvement measures, we have demonstrated a significant improvement in the care quality for CI-AKI prophylaxis but there is still room for further improvements especially in counselling patients regarding risk of contrast injury and potential complications.

Conclusions

We were inferior to compliance with national guidance on CI-AKI prevention in initial audit. After implementation of quality improvement measures, we have demonstrated a significant improvement in the care quality for CI-AKI prophylaxis but there is still room for further improvements especially in counselling patients regarding risk of contrast injury and potential complications.

References