

Correspondence

Renal function after elective total hip replacement

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Sir—I read with interest the article ‘Renal function after elective total hip replacement’ (Perregaard et al. 2016). I note that the incidence of acute kidney injury (AKI) in primary elective hip replacements as reported in the study is 2%. I recently undertook a retrospective review of a similar nature in a large teaching hospital setting, evaluating the incidence of acute kidney injury in patients undergoing primary hip and knee replacements during 1 year. It is worthy of note that an algorithmic electronic alerting system for acute kidney injury was incorporated recently into several clinical chemistry results reporting systems across the national health service in England. I used data from this system for my review, and obtained a list of all patients who had electronic alerts generated over the year, and matched it to the operating theatres database over the same time period to obtain figures on incidence. The incidence was 44/541.

After identifying patients, I attempted to find out potential contributing factors. This included characterizing their risk profile (as defined by the National Institute for Health and Care Excellence, NICE), and gathering other perioperative data including pre-operative starvation times, antibiotic prophylaxis, intraoperative fluids, documentation of blood loss, urine output, incidence of postoperative hypotension and hemoglobin measurements. I also noted the presence or absence of accurate documentation of AKI in the patient’s notes.

I found that these patients experienced considerable periods of dehydration preoperatively, which is one of the factors known to increase AKI risk. Most of them then go on to receive a combination of flucloxacillin and gentamicin as antibiotic prophylaxis, which contributes to nephrotoxicity. Intraoperative and postoperative fluid prescription appeared inadequate to cover for preoperative starvation and ongoing as well as predicted postoperative losses. Moreover, these patients do not get catheterized as this is not recommended within the enhanced recovery protocol. This leads to suboptimal intake/output monitoring in the postoperative period, risking further damage to kidney function. Hemoglobin measurement postoperatively was inconsistent in timing and frequency. Significantly, documentation of AKI was poor in many instances, with creatinine levels not repeated in 10 out of 31 patients. This then leads to an absence of documentation of AKI in the discharge summaries of patients, and no follow up in the community. This is an important issue, since post-discharge care of AKI in the community has been recognized

by NHS England as crucial to these patients, as evidenced by its Commissioning for Quality and Innovation (CQUIN) guidance for 2015/2016.

In order to address these problems, I have proposed an action plan to include the following changes:

- Identify high risk patients at preoperative assessment clinics, based on NICE guidance.
- Avoid prolonged periods of starvation and dehydration prior to surgery.
- Create a checklist/guidance document to be used along the entire patient pathway.
- Set up an AKI referral service, with patients identified as high risk to be referred to the hospital’s AKI team consisting of nurses and doctors.
- Educate junior doctors involved in the care of these patients about the importance of recognizing and treating AKI.
- Ensure better documentation of AKI status on discharge summaries to facilitate communication to general practitioners for follow up.

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Sir—We read with interest the letter from Dr. Somasekhar concerning his study of AKI in orthopedic patients in the UK. The comments are highly relevant and stress the point made in our study concerning the importance of increased vigilance in identifying and monitoring AKI in orthopedics.

Our study populations are, however, not entirely comparable. The incidence of AKI is presumably not the same in populations for elective knee versus hip replacement surgery. In our population only elective hip alloplasties in presumed healthy and pre-operatively optimized patients were included.

In terms of clinical practice 2 crucial points remains to be clarified. Firstly, the clinical impact of AKI in elective orthopedic populations have not been studied. Secondly, it is equally relevant to study whether an effective intervention exists that could prevent or modify AKI post-operatively.

Larger, prospective studies are needed in order to further elucidate this important topic.

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Perregaard H, Damholt MB, Solgaard S, Petersen MB. Renal function after elective total hip replacement. Acta Orthop 2016; Mar 3: 1-4. [Epub ahead of print]

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