

## Paper reports

# First do no harm: the aftermath of intensive care

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Intensivists may be unaware of the longer term consequences of intensive therapies for their patients, and several paper reports in the present issue focus on the post-intensive care unit (ICU) hospital and community morbidity and mortality. This of course encompasses ethical issues concerning the futility of intensive care in certain circumstances, and the elderly population is highlighted in this context. Avoidance of toxic or invasive therapies may reduce the need for ICU treatment, or at least reduce the time spent in the ICU, and is the subject of several paper reports. Hopefully, this may impact positively on post-ICU morbidity and mortality.

Milner *et al* examined the 5-year mortality from emergency abdominal aortic aneurysm (AAA) repair. That retrospective study examined the records of 99 patients, and found an ICU survival rate of 40.4% and a rate of survival to hospital discharge of 31.3%. Eleven patients required haemofiltration, but no patients required long-term dialysis. Of interest was that 26% of the patients were aged over 80 years, and this subgroup had an in-hospital mortality of 96%. The authors found no difference in outcome for patients operated on by vascular or general surgeons. This suggests that time until cross-clamping is of paramount importance, and is a powerful argument against regional centres for emergency AAA surgery.

A retrospective cohort study of 381 elderly patients admitted to a French renal ICU examined the issue of renal failure in this age group. This study provided interesting information on aetiology and survival in this population. The aetiologies were obstructive (22%), prerenal (24%) and intrinsic renal disease (54%, predominantly secondary to shock states). A nephrotoxic drug was involved in 18% and haemodialysis was required in 29% of patients. ICU mortality was 40% and, although the follow-up data were

scant, it appears that only 50% of the patients discharged were alive after 2 years. Unfortunately, the mortality figure for the patients who required haemodialysis was not quoted in the paper.

These two reports raise the contentious issue of resource use and whether surgery for ruptured AAA and haemodialysis should be considered in elderly patients. With the ever present pressure on ICU beds and the seemingly hopeless outcome, it would not appear to be in the patient's (or institution's) best interests to perform emergency AAA repair in this age group. More data should be forthcoming from the Vascular Anaesthetic Society audit.

Two reports looked at the consequences of ICU admission on swallowing and sleep pattern. Partik *et al* used videofluoroscopy to study swallowing in patients with symptomatic swallowing dysfunction. Twenty-one patients were studied, and the mean period of intubation was 24 days. Of these patients 86% had proven aspiration, and this could be improved with therapy. Although this study was in patients with symptomatic swallowing dysfunction, the authors make the point that aspiration is common after prolonged intubation with or without symptoms. Chishti *et al* studied sleep-related breathing problems and nocturnal hypoxaemia in the first 72 h after ICU discharge. Of the 15 patients studied, nine had an SpO<sub>2</sub> below 90% for at least 2 h, despite being prescribed oxygen therapy. These respiratory events seemed to be predominantly hypopnoeas, and may be a consequence of altered respiratory drive feedback and neuromuscular weakness. The observations of these two reports together may explain the high hospital mortality that occurs after ICU discharge.

Management of infections was investigated in two reports. A prospective randomized trial published in *Annals of*

*Internal Medicine* examined whether invasive sampling with bronchoalveolar lavage (BAL) was more effective than sampling of endotracheal aspirates. A total of 413 patients were studied, and 14-day mortality was reduced from 25.8 to 16.2% with invasive BAL sampling. The BAL group also had more antibiotic-free days, received fewer antibiotics and had a lower incidence of *Candida* infection. Interestingly, the reduction in mortality at 14 days had disappeared at 28 days.

The safety of the use of antifungal drugs administered empirically to febrile neutropenic patients was examined by Wiston *et al* in a prospective randomized multicenter study. There were equal numbers of successes and failures in each group, but the incidence of withdrawal of drug treatment due to toxicity was 7% in the amphotericin B group versus 1% in the fluconazole group. Of the patients studied 13% had therapy changed from fluconazole to amphotericin B because of lack of clinical improvement. These data suggest that fluconazole is a safer first-line antifungal agent, although the drug is ineffective against *Aspergillus* spp.

Noninvasive positive pressure ventilation (NPPV) is gaining a place in the management of respiratory failure. Martin *et al* performed a randomized trial that allocated

patients with respiratory failure to either NPPV or conventional management. The rate of intubation was reduced by approximately 50% with the use of NPPV. The number of patients was small ( $n=61$ ) and, although the mortality rate in the NPPV group was approximately half that in the conventional therapy group, this did not reach statistical significance. This study is encouraging and, although not shown by this study, NPPV should improve outcome by reducing the hazards associated with tracheostomy or endotracheal intubation.

Intensive care consists of supporting failing organs while striving to minimize iatrogenic damage, and the longer term consequences of therapies are only just becoming appreciated. These reports attempt to highlight what does happen to our patients after ICU discharge, and suggest ways in which resources could be better utilized and complications of treatment potentially avoided.

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