Reviewer's report

Title: Prevalence and impact of alcohol and other drug use disorders on sedation and mechanical ventilation: a retrospective study

Version: 1 Date: 11 December 2006

Reviewer: Shannon Carson

Reviewer's report:

General

This is a retrospective cohort study designed to assess the prevalence of alcohol and other drug use disorders (AOD) in a population of patients admitted to a medical ICU in an urban US teaching hospital. The study also assesses differences between sedative and opioid use and outcomes between patients with and without AOD. Higher daily doses of benzodiazepines and opioids were required in the patients with AOD.

Although many clinicians would suspect that higher doses of sedatives would be required for relatively young patients with AOD compared to patients without AOD, this has not been formally documented in the literature. This is a useful contribution of this study.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Much is made of the finding that higher benzodiazepine and morphine equivalents in the AOD group did not result in longer duration of mechanical ventilation. However, it is difficult to make associations between duration of mechanical ventilation and amount of sedatives administered in this cohort since the two comparison groups appear to be different. The non-AOD group has a higher number of patients with diseases such as ARDS, pneumonia, and sepsis which are associated with longer duration of ventilation. Based on APACHE II scores, overall illness severity is higher in the non-AOD group. Therefore one would expect the duration of ventilation to be less in the AOD group. Associations between duration of mechanical ventilation and amount of sedatives administered should not be emphasized in the discussion or conclusions.

Page 11, second para: In this small sample size, a difference of APACHE II scores (after excluding GCS) of 13 vs 18 is likely to be clinically significant if not quite statistically significant, as is the difference between total APACHE II scores.

Results: Duration of mechanical ventilation in a patient who dies on the ventilator is more a measure of time until death than outcome of mechanical ventilation management. Noting that the AOD group had lower illness severity and a trend toward lower ICU mortality, mean or median duration of mechanical ventilation should be compared between survivors in the AOD patients and non-AOD patients and between patients in each group who died.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Page 8, third para: Describe specifically what is meant by adjusting APACHE II score and SOFA scores for GCS. GCS is part of both scores as they were validated.

Page 20, para 2: Give percentages for rates such as mortality since these data are not provided in tables.

Discretionary Revisions (which the author can choose to ignore)
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.