Reviewer's report

Title: Epidemiological Characteristics of Nosocomial Infection in a Newborn Intensive Care Unit (NICU), South Korea

Version: 2 Date: 21 March 2006

Reviewer: Kevin Laupland

Reviewer's report:

General

This study is a retrospective cohort that describes the occurrence and microbiology of nosocomial infections in a single neonatal ICU in a tertiary care centre in South Korea. Strengths of the study include that standard definitions were used and that the study was conducted over a several years duration. Weaknesses include the retrospective nature (chart review), a very high rate of missing data (172/696 or 25% of the charts were missing or unavailable), and a lack of a risk factor/outcome analysis.

---------------------------------------------------------------------

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

1. The rate of unavailable/missing charts is striking (25%). Given that this study was conducted in a single hospital these charts should be available. The authors should track these down and include them. At the absolute least a detailed description of the reasons for why so many charts are missing needs to be reported. Lost/unavailable charts at this degree is very concerning from a medical records/patient confidentiality perspective.

2. In my opinion it is essential to perform a risk factor analysis exploring factors associated with development of an infection. Baseline factors (age, gender, birthweight, delivery type, etc) can be explored as well as potentially device use, surgical procedures, treatments rendered etc. This will need to involve statistical comparisons among those that developed an infection and those that did not. The authors may need to enlist the assistance of a statistician. Inclusion of a risk factor analysis is essential in this study; epidemiology usually refers to the occurrence and determinants of disease—at present the authors are looking only at incidence and microbiology. To this end without a risk factor analysis the title should be changed removing reference to "epidemiology"

3. The outcome of infection is not reported. This needs to be done and compared to those that did not develop infection similarly to 2 above.

---------------------------------------------------------------------

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

1. Abstract conclusions. The conclusions do not follow directly from the data presented in the abstract. Perhaps "Although the distribution of pathogens were similar to previous reports, a high rate of nosocomial infection and in particular conjunctivitis was observed in this study that merits further evaluation".
2. Introduction. I think it is important that the authors refer to Richards et al pediatrics 1999;103;4:1-7. This was a very large study (61 ICUs) conducted using the NNIS database in the US. While not focussed on neonates, it does provide important data categorized by age.

3. Given the apparent rarity of literature (a handful of reports worldwide according to the authors), the authors should reference all of the studies evaluating the epidemiology of neonatal infections in the ICU (ie first sentence of second paragraph of introduction).

4. The second paragraph of the methods section (Total 696 neonates...) and Table 1 are results and not methods and need to be moved to the results section.

5. The time to infection after ICU admit should be reported.

6. Given that the conjunctivitis was observed to occur in outbreaks it would be useful to see a plot of the occurrence of these (and potentially the others on a stacked bar graph) over time.

7. Table 2 repeats data in the text. Should only be presented in one format (ie minimize redundancy).

8. Table 3. What are the organisms that are "others" in table 3.

9. Figure 1. is not alluded to in the text and I do not see how this adds to the data in Table 3. Justify or delete.

10. The article needs proofreading for grammatical errors.

11. Would be nice to have some added data on resistance rates of the organisms to antibiotics.

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: Needs some language corrections before being published

Statistical review: Yes

Declaration of competing interests:

I declare that I have no competing interests