Reviewer’s report

Title: Infection rates associated with epidural indwelling catheters for seven days or longer: systematic review and meta-analysis

Version: 1 Date: 18 January 2007

Reviewer: Kwok ming HO

Reviewer's report:

General
This is an interesting systematic review and it was nicely performed.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. The conclusion of this study was based on very little good data and I will prefer the authors to conclude with a more conservative conclusion, ie to recommend a large prospective cohort study rather than to give an inaccurate estimate of risk of deep infection and mortality. The mortality was said to be deep-infection related in the conclusion of the abstract but was not well described in the result section (page 10) whether those deaths in patients with deep infections were related to the infection or died as a result of the cancer. Furthermore, while 1/500 might have died from deep infections but we also need to know the death rate of those without deep infection in the six studies. The difference between two rates will give the 'attributable mortality' of deep infection related to an epidural catheter and is much more meaningfully and important to practising clinicians.

2. Confidence interval should be reported in all the estimates in the abstract and the result section (eg 4 out of 57 patients died, give 7%; 95%CI 2.8-16.7%), a significant imprecision. If we multiple this confidence interval with the risk of deep infection 1/35 (95%CI: 2.1-3.8%), the confidence interval of death will be even larger.

3. As the estimate was imprecise (as illustrated in point 2) and this point was also highlighted by the authors on page 12, I will recommend the authors not to mention these estimates in the conclusion of the abstract which may mislead clinicians who just read and remember the conclusion of the abstract.

4. Sensitivity analysis in table 3 should include the number of studies in each column & also confidence interval for the percent of patients and incidence per 1000 catheter-day.

5. The sum of the number of patients with deep (57) and superficial infections (194) in table 2 and in the abstract =251 which is smaller than their report of 257. Was there any double counting in terms of patients? If there any patient with both superficial and deep infection, I am not too sure we can enter them as two 'patients' in the calculation of percent of patients with infection. We can certainly enter a patient twice for incidence of infection/catheter-day but I think it will be inappropriate for double counting them as two patients.

6. Sensitivity analysis should include a column in table 3 including only the prospective studies. This group of studies is actually most important despite the small number of patients included (735 patients) because their data should be most accurate and clean as the definitions of infection will be clearly defined prospectively and the occurrence of infection was actively surveyed by the researchers.

7. The results section (line 13) in the abstract should present the rate of infection in the prospective studies rather than the nine studies's data (all small studies, mostly retrospective).

8. Some references were incorrect. For example, reference 4 should be Anesthesiology instead of Anesthesiol, reference 19: The title should be Postoperative pain management at general nursing stations. An analysis of eight year's experience at an anesthesiological acute pain clinic.

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

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential 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, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.