Reviewer's report

Title: Does using a femoral nerve block for total knee replacement decrease postoperative delirium?

Version: 1 Date: 15 November 2011

Reviewer: Allan Gottschalk

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With the exception of the comment about Figure 1, would put these as compulsory Revisions.

General Comments:

The authors examine a subset of data from a prior study to determine if those who received continuous postoperative analgesia via a femoral nerve block AND pca experienced less delirium than those who received PCA only. The working hypothesis is that the opioid-sparing effect of the nerve block would then have a beneficial effect regarding postoperative delirium incidence. Indeed, there is a trend toward a decrease, and group assignment was significant in a logistic regression related to delirium formation. Since postoperative pain is also hypothesized to be contributory to delirium development, it would be preferred if pain levels in the different groups were more easily accessed by the reader. More speculation as to why the groups differed as to delirium incidence should be included since the primary hypothesis of reduced opioid consumption was not observed. Also, the literature contains some estimates as to the amounts of opioid that has been associated with increased rates of delirium. How do the amounts of opioid administered to these patients compare with these earlier studies? Do the amounts used here even come close?

Specific Comments:

Abstract (Results) - It would be useful to see data regarding the hypothesized opioid sparing effect. Did the femoral NB group actually use less opioid?

In Table 3 it is not possible to know, just from looking at table, whether the odds ratio was in direction of the femoral NB group or the PCA-only group (thought apparent from the text).

In Table 2 it is not possible to readily determine the amount of pain actually experienced by the patients. Only differences with respect to preop are give, and one cannot find preop data in Tables 1 or 2. It would be desirable to see that the levels of preop pain did not differ between groups. Only information on the number taking opioids is given in Table 1.. Then, it would be desirable to see the level of postop pain experienced by each group compared. Ideally, it would be done as a very short (two observations) longitudinal analysis, which could be conditioned on the preop pain level.
Was it specifically determined whether postop pain and level of level of opioid analgesic therapy influenced delirium? This is implied in the use of variable with p<0.2, but since pain and opioid consumption are linked to delirium, it would be nice to see it mentioned explicitly here.

In the Discussion in the section describing evidence-based preventive therapy, the authors neglect to site recent work by Sieber et al Mayo Clinic Proc 85:18-25, 2010

Figure 1 could just as easily been one line in Table 2.

**Level of interest:** An article of limited interest

**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'