Reviewer's report

Title: Serum procalcitonin elevation in the critically ill patients at the onset of bacteremia caused by either gram negative or gram positive bacteria

Version: 1 Date: 18 December 2007

Reviewer: benjamin tang

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The present study sought to investigate whether the extent of procalcitonin (PCT) rise in sepsis is determined by the pathogen types, namely, Gram-positive or Gram-negative bacteraemia. The authors concluded that Gram-negative bacteraemia is associated with a greater rise of PCT among critically ill patients with sepsis.

There are several issues in this paper.

1. The findings of the logistic regression need further clarification (table 3). As stated in the Abstract, Results and Conclusion sections, the authors suggested that Gram-negative sepsis is associated with a greater increase in serum PCT level. This comparison was done on the basis of using Gram-positive sepsis as the baseline variable. However, in table 3, Gram-negative sepsis was used as the baseline reference instead, with Gram-positive sepsis being the main variable of interest in the logistic regression analysis. The authors offer no explanation with regard to this discrepancy between table 3 and the main text. What are the findings if Gram-positive sepsis is used as the baseline for comparison instead? The authors need to re-present their data in a more coherent manner and ensure that the table and the main text are consistent.

2. The diagnostic performance of the PCT to distinguish between Gram-positive or Gram-negative sepsis seems to be intermediate at best. This suggests that the usefulness of applying PCT in routine clinical settings is quite limited.

3. No confidence intervals were given in table 4. They are important because they provide readers with information regarding the precision of the estimates.

4. In the Abstract section, the authors concluded that Gram-negative bacteraemia is associated with higher PCT values, regardless of the severity of the disease. However, no findings were given under the Results headings to support the claim that this finding is independent on the severity of the disease.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest
Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.