Reviewer's report

Title: Obesity and smoking are factors associated with poor prognosis in patients with bacteraemia

Version: 1 Date: 22 September 2006

Reviewer: Philip Hill

Reviewer's report:

General

This paper comes from a well-published infectious diseases group in Finland. The key issues that need resolution are the selection of patients for the study, the lack of information and interpretation in the results section, possible issues with the analysis (especially the multivariable analysis), and the emphases in the discussion.

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

Since it was only possible to recruit one patient per week the authors need to prove that this was robust—that the selection did not introduce a bias. Until this is proven, this study is potentially unsound. Were these patients randomly selected from those who had positive cultures and how was this randomisation process conducted. There is some further insights in the discussion about this, but it is still not clear.

There are 6 tables of results yet the results section appears to have tunnel vision for the findings related to obesity and smoking and alcohol. This results section should more systematically describe the findings of the study in relation to the tables. The findings with respect to obesity etc should be dealt with more efficiently.

The multivariable model is not well described in the methods or results. One would want to adjust for age and sex a priori as a standard practice, and considering the mortality difference between organisms is well known at least from other studies, include organism as a possible confounding variable. I note sex was maldistributed by organism. And there are other factors, such as ICU stay, that one might want to explain if it was considered for this analysis.

Table 5 is probably unnecessary or the findings could be incorporated into Table 4. Table 6 is unnecessary.

It is debatable whether to use peak values in such a study or whether values at an equivalent time point, in relation to the bacteraemia, are more appropriate. It would be helpful to hear from the investigators their thoughts on this issue in relation to tables 3 and 4. This may be something to mention in the discussion.

There should be a better summary of the significant findings by organism and by mortality and not such an exclusive focus on obesity etc. In particular, this study did not actually find an association between mortality and alcohol use in the multivariable model and, as such, there is no justification for 2 paragraphs in the discussion on alcohol.

Similarly the results do not show that Rheumatoid arthritis is associated with increased mortality from bacteraemia in this study and this claim should be removed.

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

It is unusual to discuss the key findings in the background section-especially when they were ‘opportunistic’. It would be better to keep the background short and leave out the sections on Obesity and Smoking and Alcohol for the discussion.

Discretionary Revisions (which the author can choose to ignore)

It is unusual to discuss the key findings in the background section-especially when they were ‘opportunistic’. It would be better to keep the background short and leave out the sections on Obesity and Smoking and Alcohol for the discussion.
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: No

Declaration of competing interests:

I declare that I have no competing interests