Reviewer's report

Title: Short-term and one-year outcome of infective endocarditis in adult patients treated in a Finnish teaching hospital during 1980-2004

Version: 2 Date: 26 February 2007

Reviewer: Michel Wolff

Reviewer's report:

General
This is a retrospective study focusing on factors associated with outcome and need of cardiac surgery in patients with infective endocarditis (EI). The authors have previously published very interesting studies concerning this topic, the number of involved patients is pretty high and the manuscript is well written. A key point is that outcome was evaluated for both short-term and long-term (1 year). In many papers, only in-hospital survival is reported. The authors have identified several parameters predictive of mortality or need of valvular surgery. Most factors have already been identified in previous reports. However, there are some drawbacks, which in my opinion decrease the strength of this study.

Comments:
1. A point of concern is the very long period elapsed between the first and the last patient, i.e. 24 years. During such a long period of time, several aspects of diagnostic and therapeutic management may have changed significantly, for example echocardiography procedures, evaluation of neurologic complications by either CT-scan or MNR, timing and characteristics of cardiac surgery.
2. I think the paper would be strengthened if the authors include only the 224 patients with definite IE according to the Duke criteria or at least if a separate analysis is performed for this group of patients.
3. I do not think that IE is a homogenous disease, which allows performing statistical analysis in the whole population of patients. I mean that left-sided IE, right-sided IE, and prosthetic valve IE are probably different with regard to pathogens, risk factors and usually, outcome. Therefore, it should be more meaningful to analyse separately these subgroups of patients, at least patients with left-sided and those with prosthetic valve IE.
4. Echocardiography characteristics, such as the presence of vegetation or a major criterion are found to be associated with both outcome and need of surgery. Thus, the authors should give more information on the number of patients who underwent only TTE and those who had also TEE. This information is relevant because vegetations and paravalvular abscess which are major criteria may not be seen by TTE. I guess that a high percentage of patients in the early period underwent only TTE. In addition there is no information about the size of vegetations but this parameter would be difficult to assess retrospectively in patients who underwent different echocardiographic procedures.
5. Many previous reports, including those by the same group, have identified neurological complications as factors associated with a worse outcome. This information is not very new. To improve the manuscript, the authors could be more precise regarding these complications by indicating if ischemic stroke, cerebral bleeding or meningitis play a similar role in the outcome.
6. Short-term and long-term outcome results could be more interestingly presented as Kaplan-Meier survival curves.
7. The problem of the role of cardiac surgery as a prognostic factor is very complicated. Patients may not be operated on because they are critically-ill while some patients undergo cardiac surgery only because they have large vegetation. Since controlled studies will never be performed for obvious ethical reasons, the best way to evaluate cardiac surgery is to perform a nested case control-study with a propensity score, in order to compare patients who are comparable. This type of analysis has already been performed for left-sided complicated valve IE (Hasbun et al. JAMA 2003). Again, I suggest a separate analysis for patients with native-valve IE and those with PVE.
8. The role of serum C-reactive protein is interesting but its clinical relevance is unclear. In order to strengthen this result, I would suggest a ROC curve with the 100 mg/l cut-off.
9. As reported by others, S. pneumoniae is associated with a worse outcome, but there were only 11 patients infected by this pathogen. The authors did not find any significant difference in outcome in S. aureus IE versus other pathogens. This is quite unusual. Could they further comment on this specific finding?
10. Mortality and need of surgery were higher for those patients who had infections of 2 native valves. Since aortic valve IE was associated with a worse outcome and more surgery, this result may be the consequence of the sole aortic infection.
11. Finally, most data reported in this series have already been published by the same group, especially
those concerning serum C-reactive protein (Eur Hear J 2005) and the general characteristics of the 326 episodes (Heart 2006).

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

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

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 of limited interest

Quality of written English: Acceptable

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'