Reviewer's report

Title: Does Prophylactic Sotalol and Magnesium Decrease the Incidence of Atrial Fibrillation Following Coronary Artery Bypass Surgery: A Propensity-Matched Analysis

Version: 1 Date: 2 February 2006

Reviewer: Vipin Zamvar

Reviewer’s report:

General
One hundred and three patients undergoing Coronary Artery Bypass Graft Surgery (CABG), operated on by one surgeon received Sotalol and Magnesium (SM group) in the postoperative period. 487 other patients undergoing CABG surgery in the same institution did not receive Sotalol and Magnesium (control group). The incidence of Atrial Fibrillation (AF) in the SM group was 13.6% compared to 31% in the control group.

In order to assess the effects of Sotalol and Magnesium, the authors performed propensity matched cohort analysis. They were able to match 89 patients in each group. The patients were very well matched (Table 1). They found a significantly lower incidence of AF in the SM group.

Randomised controlled trials are the gold-standard to answer questions regarding the beneficial effects of various treatments. However the results of randomised controlled trials have to be duplicated in observational studies in real-life situations. This is one such study. Propensity matched cohort analysis adds to the strengths of this study.

The authors have also drawn attention to some of the limitations of the study.

I have a few points to make which the authors may wish to address:
1) The mode of administration of Sotalol and Magnesium must be mentioned (in the abstract).
2) Was use of cardiopulmonary bypass one of the variables included in the propensity score: In both the groups the use of the off-pump technique is similar. How can this be explained? What percentage of CABG cases are performed using the off-pump technique in the unit?

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
None

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

There are a few spelling mistakes.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after discretionary revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.