Reviewer's report

Title: Increased Mortality with Myocardial Infarction and Kidney Dysfunction: the Contribution of Gaps in the use of Guideline-Based Therapies

Version: 1 Date: 15 September 2008

Reviewer: francois schiele

Reviewer's report:

1. Is the question posed by the authors well defined? Yes
2. Are the methods appropriate and well described? Yes
3. Are the data sound? Partially, see comments
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? yes
5. Are the discussion and conclusions well balanced and adequately supported by the data?
6. Are limitations of the work clearly stated? No, see comments regarding the study population
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Partially, see comments
8. Do the title and abstract accurately convey what has been found? yes
9. Is the writing acceptable? yes

Overview

This paper by Perterson et al aimed to determine the relative impact of the use of guidelines-based therapies on renal dysfunction in patients with acute myocardial infarction. It is an observational cohort study from the PREMIER registry, including 2426 patients. The results show that renal dysfunction is associated with both worse baseline conditions and under-use of recommended treatments. After two years follow-up, the authors observed that there was no significant treatment effect on adjusted mortality and they concluded that under-use of guidelines-based treatment did not explain the high mortality rate in patients with kidney dysfunction.

Several points require further explanation:

The authors considered only survivors at discharge. We know, from large registries, that in-hospital mortality represents a large proportion of the mortality at one year. Since the quality of management in the acute phase has an impact on the early mortality, and since patients with renal dysfunction less frequently
receive reperfusion, coronary angiography, betablockers and statins, the selection of survivors after the acute phase is of paramount importance. This selection of patients alive at discharge should be underlined and even announced in the title of the report.

The authors should provide details of the study population, showing (in a flow chart for example) the number of patients admitted, the % of in-hospital death, % of patients who refused to participate, or who had incomplete data or lost to follow-up.

As acknowledged in the discussion, the authors only recorded the treatment at discharge and not during follow-up. Nevertheless, it is likely that, over a 2 years period, the treatment was modified: either a reduction in treatment, for example because of side effects or non-adherence, or an increase in treatment because of progressive introduction of drugs or changes in guidelines. Thus, it seems difficult to support the hypothesis of having the same treatment over two years and to draw definitive conclusions on the impact on mortality.

The authors provide data on eligibility for treatments, and this is an important point. Nevertheless, the definition of contra-indication is not detailed in the paper. In addition, from table 2, it appears that the authors did not consider that patients with renal dysfunction had an indication for ACEI or ARB.

In the discussion section, the authors should compare their results to another registry study showing that renal dysfunction was an independent predictor of one year mortality even after adjustment on the rate of use of guidelines-recommended treatment (Am Heart J. 2006;151:661-7).