Reviewer's report

Title: Alterations in plasma soluble vascular endothelial growth factor receptor-1 (sFlt-1) concentrations during coronary artery bypass graft surgery: relationships with post-operative complications

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Reviewer: Jean-François Hardy

Reviewer's report:

The authors measured plasma concentrations of sFlt-1 during CABG with cardiopulmonary bypass (CPB) and investigated whether plasma concentrations of this marker of inflammation could be related to outcomes after cardiac surgery. They conclude that high levels of sFlt-1 (and thus neutralization of VEGF) are associated with improved outcomes after CABG.

This manuscript raises several questions:

1. This is an observational study and cannot, as such, establish a link of causality between sFlt-1 and adverse outcomes after CABG. This should be stated clearly. However, it would be of interest to mention the possible mechanisms by which sFlt-1 might be linked to adverse outcomes and if this mechanism is the same for the diverse outcomes observed (cardiovascular, respiratory and haematological (coagulopathy).

2. The authors analysed samples collected more than 12 years ago. Several things have changed since this time and the authors’ observations may not apply today. Further, it is not clear that patients consented in an informed manner to analyses to be conducted long after the initial study.

3. High dose aprotinin was used in all patients. Aprotinin may have modified the inflammatory response of these patients. Since the use of aprotinin in cardiac surgery is, at present, the subject of much debate, the data presented may not apply to patients operated in 2008. Also, the use of off-pump surgery may be another factor that would render the authors’ findings more or less obsolete.

4. From a methodological standpoint, the authors do not present a formal hypothesis from which they derive a calculation of sample size. They use the SEM while a standard deviation (SD) of results would be more appropriate.

5. Finally, it is surprising that these data were not published previously, in association with other papers on the same topic.

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: Needs some language corrections before being published

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