Reviewer's report

Title: Pleural Fluid Soluble Triggering Receptor Expressed on Myeloid Cells-1 as a Marker of bacterial infection: a Meta-analysis.

Version: 1 Date: 13 May 2011

Reviewer: Evangelos Giamarellos-Bourboulis

Reviewer's report:

The authors are performing a meta-analysis of the use of sTREM-1 as a diagnostic tool for bacterial infections in the event of pleural infusions. Although in the statistical sense this meta-analysis is correctly conducted, it presents several drawbacks having to do with peculiarities related with this novel molecule.

Major compulsory revisions

• In which type of fluid was sTREM-1 assessed in studies involved in this meta-analysis? Was it serum of pleural fluid? Although the title of the manuscript reports for pleural fluid, I have read several times the entire manuscript and this is not specified.

• The authors claim that they used in their literature search criteria, the terms sTREM-1 and TREM-1. Although sTREM-1 is the shed receptor of TREM-1, they cannot be both used in the analysis. Did any of the reported studies used fluid cytometry for TREM-1 in neutrophils of blood or of pleural fluid? If so, it should be mentioned. Was sTREM-1 measured in all studies by ELISA or it was also measured by Western blots? This may have introduced bias.

• The reported cut-offs of diagnosis in each of these seven studied vary considerably. Do they refer to serum sTREM-1 of to the pleural fluid sTREM-1? With such variability how is it acceptable to construct one cumulative ROC?

• Did in the mentioned studies authors report both serum and fluid sTREM-1? Why for the authors not to report and analyze the value of the pleural to serum ratio as it is the case for so many well-established indexes of validation of processes taking place in the pleura?

• The authors report two main limitations: the small number of patients in the studies and the changes of sTREM-1 by therapy. On the contrary they should have mentioned that i) for situations like pleural effusions the numbers of enrolled patients are satisfactory and ii) sTREM-1 was estimated before start of any treatment in these studies.

Minor essential revisions

• The type of bacteria involved in bacterial pleuritis in the individual studies and their impact on sTREM-1 should be provided in detail.

Discretionary revisions
None

**Level of interest:** An article whose findings are important to those with closely related research interests

**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