Reviewer's report

Title: Systematic Review: Comparative Effectiveness of Adjunctive Devices in Patients with ST-Segment Elevation Myocardial Infarction Undergoing Percutaneous Coronary Intervention of Native Vessels

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Reviewer: Ole Fröbert

Reviewer's report:

The authors systematically review the comparative effectiveness of adjunctive devices to remove thrombi or protect against distal embolization in patients with ST-segment elevation myocardial infarction. This is an important subject with an imbalance between operator belief and economic interests on the one side and clinical evidence and patient benefit on the other. Although the number of reviews within this area by far outnumbers the number of adequately designed RCTs, the quality of this manuscript speaks for itself. The review is comprehensive and the search strategy is well-defined. In my view it is not a problem that the manuscript is a revamped version of report originally commissioned by the US Agency for Healthcare Research and Quality

I have no major points but a few minors:

1. Why is the review restricted to studies with <5% of the study population receiving PCI of saphenous veins when this is the primary indication for distal protection devices? Please explain in the manuscript.

2. Please define STSR (ST-segment resolution?) when used the first time.

3. Discussion, p. 13. Please rephrase: (although the trended in the right direction).

4. Discussion, bottom p13:
   “However, STSR, MBG-3, TIMI-3, no reflow, and distal embolization were favorably impacted by catheter aspiration devices compared to standard PCI. As such, more research is needed to truly determine the balance of benefits to harms but this strategy looks promising.”
   - what does “this strategy” refer to? All in combination?

5. Discussion p. 16: “Such trials should have adequate representation of interventional cardiologists from the United States and include both tertiary academic medical centers and large community based hospitals.”
   - BMC Cardiovascular Disorders is an international medical journal. Please
rephrase.

6. In order to update the reader and demonstrate that there is light at the end of the tunnel it would improve the manuscript if the ongoing large RCTs within the area are mentioned. Particularly the 5000 patients Scandinavian TASTE trial (Am Heart J. 2010, 160:1042-1048.) and the 4000 patients primarily Canadian TOTAL study (ClinicalTrials.gov Identifier: NCT01149044).

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests