Reviewer’s report

Title: The role of remote ischemic preconditioning on postoperative kidney injury in patients undergoing cardiac and vascular interventions: a meta-analysis

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Reviewer: Scott A. LeMaire

Reviewer’s report:

In this meta-analysis, the authors demonstrate the lack of evidence regarding the benefit of RIPC in terms of preventing renal complications after cardiovascular interventions, pointing to the need for large-scale RCTs. To improve the manuscript, I recommend that the authors address the following issues:

Major Compulsory Revisions

1. Although the authors have discussed their results in the context of some of the other meta-analyses evaluating the impact of RIPC on renal outcomes, this discussion should be expanded to include two other recent meta-analyses (Desai M, et al. Remote ischaemic preconditioning versus no remote ischaemic preconditioning for vascular and endovascular surgical procedures. Cochrane Database Syst Rev 2011;12:CD008472. – and – D’Ascenzo F, et al. Remote ischaemic preconditioning in coronary artery bypass surgery: a meta-analysis. Heart 2012 ;98:1267-71.). A key issue is whether the current report adds knowledge or perspective beyond that provided by the other existing meta-analyses.

Minor Essential Revisions

1. The authors should report whether the two investigators were in agreement in their selection of studies and their assessment of study validity/quality.

2. The authors should clarify whether all of the studies used an intent-to-treat analysis.

3. The authors should consider reporting the results of the primary analysis after excluding the two low-quality studies.

4. The authors note that the studies employed different definitions for renal impairment, which is the primary outcome of interest. It would be useful to the reader to have the various definitions listed.

5. Several minor grammatical errors need correction (“did not found” on page 11, “no enough” on page 12, “envelop” on page 21, etc.).

Discretionary Revisions

1. The authors discuss the degree of heterogeneity among studies in
considerable detail. Of note, there is substantial mechanistic heterogeneity as well. The causes of kidney injury will differ in open aneurysm repair (embolic, hypovolemia/bleeding, transfusion), endovascular aneurysm repair (nephrotoxic contrast, embolic), and cardiac surgery (non-pulsatile flow during CPB, embolic, transfusion). This adds to the complexity of trying to determine whether RIPC is beneficial. Clearly, multiple studies will be needed to determine the impact of RIPC in these different clinical situations entailing different (but overlapping) mechanisms of kidney injury.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have no competing interests.