Reviewer’s report

Title: The Therapeutic Effects of MicroRNAs in Preclinical Studies of Acute Kidney Injury: A Systematic Review Protocol

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Reviewer: Jamie Privratsky

Reviewers report:

1. Original submission:

Recommendation

Accept

2. Comments to Author:

SYSR-D-19-00147

The Therapeutic Effects of MicroRNAs in Preclinical Studies of Acute Kidney Injury: A Systematic Review Protocol

Authors: Sarah Zankar; Rosendo A. Rodriguez; Jose Luis Vinas; Kevin Burns

Systematic Reviews

Overview and general recommendations:

The authors of this systematic review protocol propose a method for performing a systematic review to determine the therapeutic effects of microRNAs on acute kidney injury (AKI) outcomes in preclinical studies. AKI is a major clinical problem and there are currently no therapeutic modalities. MicroRNAs have been implicated in AKI, however no systematic reviews of the preclinical literature have been undertaken to determine whether possible microRNA-based therapies hold promise for translation to humans. The authors propose to use multiple databases and a comprehensive search strategy to identify preclinical non-human studies that examine the effects of microRNAs in AKI. They will examine effects of miRNA delivered alone, with extracellular microvesicles or nanoparticles. They will examine effects of these agents in multiple animal models of kidney injury. The primary outcomes will be indices of kidney structure and function. They will have 2 independent investigators screen abstracts and
selected studies will be examined to obtain outcome results. Their proposed studies appear to sufficiently determine risk of bias and grade quality of evidence. They will perform meta-analysis if the data allows for that. They hope to identify areas where more preclinical research is needed and also identify promising miRNAs for future human clinical trials.

Overall, the methodology appears sound and the data will be useful.

Major comments:
None

Minor comments:

1. I am skeptical that there will be enough non-biased studies in animal models that will allow for robust meta-analysis. Also, I am worried that the heterogeneity and lack of transparency in many pre-clinical studies will make it very difficult to draw meaningful conclusions. However, I think the authors should attempt this analysis and should proceed.

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

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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