Reviewer's report

Title: Veno-venous ECMO: a synopsis of nine key potential challenges, considerations, and controversies

Version: 3 Date: 1 April 2014

Reviewer: Steven J Lisco

Reviewer's report:

I have no major compulsory revisions. The authors have done a fine job addressing most, if not all of my original issues.

Minor essential revisions are as follows:

1) Page 5 re-write last sentence "...we will discuss the points that most challenge a new practitioner...

2) Page 6 re write first sentence challenge one: "Careful selection of ECMO candidates is critical because of potential complications and substantial costs."

3) Page 6, re-write sentence as “Further suggestions and guidelines on using ECMO to rescue patients with severe ARDS can be found in the ongoing EOLIA......”

4) Page 7 last line, the letter “h” is missing in the word “however”

5) Page 9, delete the last sentence in the second paragraph beginning “Also, the fact that centrifugal pumps...” This is addressed in the paragraph directly below.

6) Page 12, second paragraph, challenge six. Re-write the sentence that starts and ends “Compared to heparin ...compared to heparin.” Please use that phrase only once. I would favor beginning the sentence “Patients who received....”

7) Page 13, Challenge Seven, second sentence. Insert the word “intubated.” “However, the necessity of keeping VV ECMO patients ‘intubated’ is being investigated....”

8) Page 15, sentence 5, and rewrite “Furthermore, they suggest that a minimum volume threshold be established to define a regional facility as a center of excellence....”

9) Page 15, last sentence, same paragraph, re-write “Finally, Davis et al concurred that the use of specialized centers with adequate patient volume led to (delete 'do') good ECMO results...."

10) Page 15 summary, second sentence, re-write “Essential considerations are the futility of treatment and the safety of anticoagulation.”

11) Page 16, the paragraph beginning “Using a single cannula....” is written
much better in the original version of the manuscript. I would revert to that wording; add the references from the revised version as well as the last sentence of the paragraph on high fidelity simulation.

I have no discretionary revisions.

**Level of interest:** An article of importance 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'