Reviewer's report

Title: The Hemobag: the modern ultrafiltration system for patients undergoing cardiopulmonary bypass

Version: 2 Date: 20 December 2011

Reviewer: David Moskowitz

Reviewer's report:

Minor Essential Revisions

1) Methods paragraph in abstract. Spell out US.

2) Introduction paragraph 2. The first and second sentences are redundant.

3) Introduction paragraph 3. The following "direct transfusion and during CPB and post CPB ultrafiltration" should be changed to "direct transfusion and ultrafiltration both on-CPB and post-CPB".

4) Methods section paragraph 1. "Patients were allocated in the Hemobag group (Group H) or in the Cell Saver group (Group CS) depending on the preference of the Surgeon." Please clarify how one allocates when the study is a retrospective comparison. The surgeons would need to decide which patients they want to study the Hemobag but not which one is to receive cell saver and be included in the study. Or was this a case-matched study, etc...

5) Methods section paragraph 2. No patients were allocated to the CS group because it is a retrospective comparison to the standard of care in that hospital. Please remove this term allocated to CS group.

6) Methods section paragraph 2. Why didn’t the surgeons use CS in the H group additionally. There are times when there is surgical blood loss and the patient is not heparinized. This needs to be mentioned as a limitation.

7) Technology section paragraph 1. Please define CE.

8) Technology section paragraph 1. I question the use of novel. Please consider another term.

9) Technology section all paragraphs. The description of the Hemobag in this section sounds like a commercial for the product and needs to be more of a description of how the technique was done at this institution. Please avoid the us of the following terms - safely, quickly, more rapid. Please avoid stating it results in higher cell concentrations. That is left for the study to determine.

10) Results and Discussion paragraph 1. The first sentence does not make sense with the ending "...were compared resulting similar."
11) Results and Discussion paragraph 3 and Table 3. Please explain where the Hct, platelets, etc... was drawn from in this analysis bc it does not make sense if the final product of the CS was only concentrated to 35%. If the results are from the patients blood, then it is dangerous to have a Hct of 51% post bypass.

12) Results and Discussion paragraph 4. Please state why CS was superior or state the disadvantages of direct infusion of pump blood in this paragraph referencing studies.

13) Results and Discussion paragraph 5? Please state how this study is different from the Samolyk study.

14) Results and Discussion paragraph 6 - please describe the final product. I believe this is referring to the hemoconcentrated blood and not the patients blood.

15) Results and Discussion paragraph 7. In the paragraph that describes the institutions implementation of a blood conservation program, many of the subsequent statements regarding the Hemobag and its benefits are not backed by outcome data. The reference to "best possible" and "greatest possible" need to rephrased to prevent this paper from becoming an advertisement for the product. What is "best possible" and/or the gold standard for a blood salvage technique?

16) Results and Discussion paragraph 8? In this paragraph it states that the Hemobag is a safe and quick method. Please have a reference for this. Please refrain from this becoming too much of an advertisement.

Major Compulsory Revisions

1) The paper needs to be rewritten so that it is not an advertisement for the Hemobag. Only state the facts and refrain from using "best possible" or "greatest possible".

2) They mention throughout the paper that the Hemobag is safe and effective. In this paper, it only shows that it was just as safe as the Cell Saver. I do not see in this paper where they can conclude that it is faster than the CS or a fast technique. Compared to what - processing the cell saver which is ongoing and continuous or to creating whole blood for direct transfusion post bypass which does not seem to take a long time either.

3) Statistical analysis section. Please state how the CS group was formed. Consecutive case prior to forming the H group. Random cases over the last year.....

4) Results and Discussion paragraph 6. Is this an initial evaluation or is this the first clinical trial. Please clarify further.

5) Results and Discussion paragraph 7. In the paragraph that describes the
institutions implementation of a blood conservation program, many of the
subsequent statements regarding the Hemobag and its benefits are not backed
by outcome data. The reference to "best possible" and "greatest possible" need
to rephrased to prevent this paper from becoming an advertisement for the
product. What is "best possible" and/or the gold standard for a blood salvage
technique?

6) Results and Discussion paragraph 8? In this paragraph it states that the
Hemobag is a safe and quick method. Please have a reference for this. Please
refrain from this becoming too much of an advertisement.

7) Final paragraph. They conclude that patients in the H group did not require
higher vasopressor therapy compared to the CS group and that this is unlike
previous papers where a CS group was compared to MUF. In the next sentence
they conclude that this happened because..... This needs to be changed so that it
reads that "This may have occurred because...."

8) The final sentence should state "...compared to the CS technique."

9) Need a limitation section.

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'