Reviewer’s report

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

Version: 2 Date: 3 December 2011

Reviewer: Jeffrey B Riley

Reviewer’s report:

Major compulsory revisions

# If the authors are going to compare the HB technique to MUF, they should briefly review the benefits of MUF in the introduction.

# “Cell Saver” (CS) is a trademark name of Haemonetics Corporation – suggest the use of the term cell washer or cell processor, not cell saver.

# “The platelet count increase in Group H from 105±12K/mm3 to 201±22K/mm3 compared to the decrease from 102±11K/mm3 to 57±11K/mm3 in Group CS (p<0.001). The total protein concentration passed from 3±0.5mg/dL to 9±1mg/dL in Group H and dropped from 3±0.3mg/dL to 0.4±0.2mg/dL in Group CS (p<0.001). Albumin increased from 1.5±0.3mg/dL to 4.5±0.3mg/dL in Group H and dropped from the same 1.7±0.3mg/dL to 0.3±0.1mg/dL in Group CS (p<0.001). Fibrinogen also increased in Group H from 125±18mg/dL to 342±39mg/dL and decreased from 122±18 mg/dL to 33±4mg/dL in Group CS (p<0.001).” It is not clear from this statement if the authors are reporting patient blood levels or CS and H transfusion bag values in the text. The platelet, protein and fibrinogen values are not feasible for patient values – but are for H or CS final product levels – rewrite to clarify.

# Table 3 reports “blood levels” but like the sentence above – the blood levels do not make sense for patient values – some make sense for the resulting final product of the CS or H – authors must clarify Table 3 values.

# Pg 8: “Hemobag has demonstrated to maximize the composition of the residual…” Use grammar check.

Minor essential revisions

# The introduction is not unique – it reads like so many other articles introducing the problem of finding techniques to reduce donor exposure and preserve clotting factors – this is a very important message, but other publications have covered it. Could be a more brief introduction that focuses on why they did this report.

# The HB technique has been described in several other publications such that the author’s description is not unique – shorten this discussion and depend on other publications if readers what to reproduce the technique.

# “Hemobag results in higher cell concentrations, more rapid processing and less lost final product respect to circuit recirculation methods because is not limited by
a fixed CPB volume and the constraint to retrieve the entire concentrated product.” This statement should be referenced and probably belongs in the Introduction or Discussion.

Discretionary revisions

# Authors might consider adding values to the significantly higher hemoglobins. It is interesting that the immediate post-CPB differences did not carry over into the ICU period.

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

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

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

**Declaration of competing interests:**

I have no competing interests with the authors or the manufacturer of the HB. I am referenced twice in this manuscript. I have consulted in the past with the manufacturer of the HemoBag (2006-2008). After 2008, I have had no financial interest in the HemoBag or its manufacturer.