Reviewer’s report

Title: Is There A Difference In Bleeding After Left Ventricular Assist Device Implant: Centrifugal Versus Axial?

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Title: Is There A Difference In Bleeding After Left Ventricular Assist Device Implant: Centrifugal Versus Axial?

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I wish to raise some questions to the authors with regards to their findings.

The recently published RCT (Endurance Trial) compared the exact same devices HVAD vs HMII. They however noted a higher incidence of stroke in the HVAD cohort. A follow up by Carmelo Milano highlighted the role of blood pressure control as being protective of strokes in the HVAD cohort.

1) Would it be possible for the authors to include
   a. MAP
   b. And anti hypertensive medication history - as >50% in both cohorts were notably hypertensive.

   It may also be of interest to discuss the point that increased stroke rates were not seen as BP control was monitored etc

2) I note higher (albeit) not significant haemoglobin in the HMII cohort, but a lower requirement for blood products (FFP + RBC) in the HVAD cohort. Were there any intraoperative complications to explain this phenomenon? Given that there was an increased need to implant an RVAD in the HVAD cohort, it does seem odd that the blood product requirements were a lot less. The INR of the HMII cohort

3) The increased need for the RVAD in the HVAD cohort. Were there any Pulmonary Artery Catheter measurements or surrogate makers (LFTs) collected. Could this be included in the
Could the intrapericardial placement of the HVAD affect the RV function by compression?

4) Were there any reoperations in either groups?

5) What were the cardiac indices, LVEF and other markers of cardiac dysfunction beforehand?

6) Why was the PTT longer in the HVAD group?

General comments

This study has raised many pertinent interesting questions about the devices. However a detailed analysis of the abovementioned factors alongside a more focused discussion reflecting the positive findings should be considered.

The discussion concentrates too much on less pertinent matters like the location of the ligament of Trietz. There is no mention of anaemia being a measure of covert GI bleeds which may be important given that a large proportion of devices have been inserted as destination therapy.

The unit should however be commended for the low rate of driveline infections. Pump thrombosis rates should also be investigated.

As the focus of the study was on bleeding and shear forces, were other measures of haemolysis (eg haptoglobins, blood films etc) done?

Minor issues

Statistical analysis

- How was the non-parametric data analysed? Mann-Whitney U?
- How was the parametric data analysed?
- How was categorical data analysed given there were some fields with <5 - Fishers vs Chi squared?

Conclusion - novel anticoagulants were not mentioned in the rest of the manuscript. This makes the conclusion vague.

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Quality of written English
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