Reviewer's report

Title: Clinical and Inflammatory Response to Bloodstream Infections in Octogenarians

Version: 2 Date: 24 October 2013

Reviewer: Irene Maeve Rea

Reviewer's report:

This manuscript reports a retrospective observational comparison of subject groups below and above 80 years of age for comparison of clinical features laboratory findings and mortality for those presenting with sepsis to a hospital setting during the year 2010. Inclusion criteria was to include only those with a single sepsis episode managed on a single hospital site with adequate study details. Although 1367 patient episodes were screened, only 167 met study criteria with 127 episodes for subjects 18-80 years of age and 40 episodes for those >80 years of age, with apparently equal sex distribution across the age groups. Heart Rate, Oxygen Saturation and neutrophil count appeared higher in the >80s age group with temperature and blood pressure showing no difference compared to the <80s group.

Major Compulsory Revisions:

- This study is of interest because of the octogenarian age group but there are a number of important issues which need carefully considered.
- The Methodology section has insufficient detail for clear exclusion criteria for the study and this detail is missing in the accompanying Flow Diagram 1. There is no explanation for the comparator age groups to be <80 (18-80yrs) an extremely wide range and >80 years. No standard deviations are given for age. In addition Why does the Abstract say that participants 'were taken to be all adult patients'?
- The Charleston Index is neither defined nor referenced in the manuscript.
- How was mortality identified and at what stage was it audited in the study protocol?
- Results need to be more clearly and succinctly described making better use of the Tables for explanation. Paragraph Headings for different result sections would be useful ie patient demographics, Clinical and Laboratory Finding, Mortality etc to match the Table with this data.
- Tables; the tables need more detail and description in headings.
- Abbreviations such as LLC, HLC, numbers ( ), SD should be defined in subscript below tables.
- Microbiology gram positive or negative finding in Table 3 would fit best in Table 4 with microbiology results.
- In logistic regression table 3 the variables should be described more precisely ie what does greater age, lower Blood Pressure, Lower O2 Saturation mean in this
context. It is not clear what the comparators are for each variable v Mortality in this logistic analysis.

P values need only be described to 2 decimal points.

There are no legends for the Figure or any of the Tables included with manuscript. The references throughout do not seem to be in order or have been incorrectly indexed ie Background para 3 end of sentence ref 5,17. References 6-17 appear to be missing. Perhaps this should read 5-17 but this needs checking. There is no evidence of Reference 4 in the text. Similarly in the first paragraph of the Discussion references 21,29, should this be 21-29, since 22 and 23 follow etc.

The limitations of the study are included in the final part of the Discussion.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.