Reviewer's report


Version: 1 Date: 2 February 2007

Reviewer: Shabir A Madhi

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General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. This study contributes to the overall literature regarding the importance of septicemia in Africa, however the presentation of the data makes it difficult to appreciate the community-acquired from the nosocomial acquired pathogens. This is important for a number of reasons including: 1. the summary inclusion of both undoubtedly would bias the spectrum of pathogens identified, ii. Impact on the spectrum of antimicrobial resistance; iii. affect recommendations being made as to what the empirical antibiotic therapy should involve; iv. Limit comparisons with other similar studies, the focus of which are on community-acquired infections, v. determine potential of isolate being a contaminant vs. pathogenic, etc. As such, it would be easier to make deductions from the data if the scope of this manuscript is either split into community-acquired and nosocomial acquired; or alternately if only the community acquired aspect of the study is analyzed in this publication. In particular, it would probably be best to restrict the study to blood cultures performed prior to antibiotic therapy being instituted at least in the hospital.

2. The definition of “septicemia” which I suspect refers to bacteremia (?) needs to be clarified. Additionally, what were the specific criteria (other than temperature) used for making a clinical diagnosis of septicemia which triggered blood cultures being performed. The current definition at the end of paragraph 1 pg 5 is too vague.

3. The limitations of using disc-susceptibility testing (vs E-test/MIC) needs to be discussed (pg 6 -2nd paragraph)

4. Its unclear as to what criteria were used to attribute “clinical significance” vs “contaminant”- esp as an example for E faecium which was not hospital acquired etc. Similarly, were cultures with multiple isolates considered as contaminants or included in the analysis based on certain predefined criteria

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Pg 5- any reason for the lag in publication- study completed in August 2002

2. Pg 5: clarify if specific criteria, other than temp used for “suspecting serious bacterial infection”

3. Pg 5: Would be useful to indicate what the empirical antibiotic therapy is for the study site for the treatment of suspected community-acquired sepsis

4. Pg 7: provide data on mean duration between readmissions- and decide on criteria used for considering as nosocomial vs. community-acquired- probably exclude any repeat episodes with >30 days if reanalyzing for only community-acquired

5. Pg 7: Useful to show if any difference in spectrum of isolates between 1st and readmissions

6. Pg 8: suggest incorporating footnote at end of table 1 into “antimicrobial therapy” text section

7. Pg 8: 1st sentence- unclear where the figure of 1 402 comes from- should the denominator not be 1 557?

8. Pg 10: duration of hospitalization comparing inappropriate antibiotic therapy should exclude children who died from the analysis- as this would bias result toward showing no difference between the groups. Also, if there are many children who survived without adequate antibiotics- raises questions of the pathogenicity of the isolates- which would need to be discussed.

9. Pg 10: the comparison of “clinical TB” is artificial- since the signs and symptoms of AIS and TB overlap- resulting in a lower threshold of HIV infected children being treated for TB

10. Discussion: this would need to be tailored in relation to nosocomial vs. community acquired infections

11. Pg 13: 3rd last line- evidence from South Africa (Clin Infect Dis 2000) that HIV does impact on outcome of bacteremia and association with antibiotic resistance

12. Pg 14: 2nd paragraph: low yield of MTB from blood culture- same as observed in children in Malawi
(Graham S et al.)
13. Pg 14: 1st sentence –speculative – based on post mortem studies- septicemia contributes to mortality- but major problem in 1st two years in HIV infected children PCP, CMV etc.
14. Pg 23: table 2: indicate what the percentages reflect
15. All tables- suggest splitting between comm acq vs nosocomial acquired
16. Figures 2 and 3- limit analysis to proven case of septicemia- unclear if this is the case

Discretionary Revisions (which the author can choose to ignore)

**Which journal?:** Appropriate or potentially appropriate for BMC Medicine: an article of importance in its field

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**
I declare that I have no competing interests’