Reviewer's report

Title: Prevalence and acquisition of MRSA amongst patients admitted in a tertiary-care hospital in Brazil

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Reviewer: Anette Loeffler

Reviewer's report:

'Prevalence and acquisition of MRSA amongst patients admitted in a tertiary-care hospital in Brazil'
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BMC Infectious Diseases Research article

The study investigated 1. the prevalence of MRSA colonisation in 490 patients within 72 hours of admission to a tertiary hospital in Brazil, 2. risk factors for colonisation and 3. the incidence of nosocomial colonisation. Colonisation was identified in 5.3% of adults and 1.6% of children. Age over 60 and previous hospitalisation were associated with MRSA colonisation at univariable level, no independent risk factors were identified in a multivariable model. The incidence was 9.5%. The conclusions refer to recommendations for infection control measures in hospitals.

Major Compulsory Revisions

Abstract:

1. The background is too general. There are published studies which investigate whether prevalence and incidence estimates could help infection control measures. However, this is likely to be region/country/hospital specific. The location of the study needs to be stated in the abstract.

2. Results: Age and hospitalisation were only associated at univariable level, therefore not identified as risk factors.

3. The conclusions are not following on from the study results or the study design. This was a prevalence study and the identification of MRSA carriers was not examined as an intervention for control measures.

Methods:

4. study setting: Why were 72 hours post admission chosen instead of 48 hours? This should be added in the discussion.

5. data collection: Please clarify how the medical information was collected: it is stated in the methods, that clinical information was gathered “from medical records and from assistant healthcare workers”. In the discussion (last sentence, 4th paragraph), information bias from patients reporting the name or type of drug
is described. The quality of data may be quite different. How was data collected “from assistant healthcare workers”? Were they the trained researchers, the participants or the source of information?

6. data collection: Please reword the last sentence.

7. statistics: Univariable analysis: Some of the categorical variables have small values (e.g. skin lesions, diabetes) so that chi-squared would not be reliable. Fisher's exact?

8. statistics: Exact logistic regression analysis can be used for small population sizes or skewed data. This should be used here before any comments on the power of the study are discussed (Discussion, third paragraph, last sentence)

Discussion:

9. last paragraph before conclusion: Please delete as this is overstated, the study did not even reveal a trend for a significant difference.

Conclusions:

10. The conclusions should be revised to relate more specifically to the scope and the findings of the study.

11. If the conclusions aim at recommending measures for infection control, the expected benefit of such control measures should be made clearer in the introduction.

12. Second sentence: not clear, may benefit from rewording.

13. Third sentence: how do the results show that the hospital should be able to screen 78%...?

14. Incidence of colonisation (9.5%)

Figure:

15. Please clarify the numbers: In the text is says 580 were selected, in the figure 548 were randomly selected.

Minor Essential Revisions

Methods, study setting:

16. Lines 4 & 5: full wording at first use for HAI and VRE

17. Lines 11 & 12: How were the populations on different days compared? Reference? Or is there a reference that they could be different?

Methods, microbiology:

18. Swabs were transported in WHICH commercial medium? Was that an enrichment medium? If not, this should be discussed.

Methods, statistics:

19. Population size calculations: Please give references for the prevalence estimates.
Results, first paragraph:
20. Please reword third sentence. E.g. “...285 patients who had been negative for MRSA on admission had at least one second swab...”

Discussion:
21. Line 2: Is reference 10 the one that was intended? Please reword: the patients cannot be chronic.
22. Line 3: Sixty-four
23. Line 6: Confirmed
24. Line 8: Please add: in Detroit.
25. Line 9: Admitted to a hospital

4th paragraph:
26. Which two risk factors? More than two are mentioned below.
27. “..(i.e. antibiotic corticosteroids or immunosuppressors)”: please correct and clarify, corticosteroids can be immunosuppressive.

5th paragraph:
28. The first sentence refers to the “incidence”, the second to a “high rate” of colonization. Please clarify, the same things should be compared.
29. Last sentence on page: “...the acquisition of colonisation in this study increased with length of stay..., and this was in ...” or add reference.

6th paragraph:
30. parts should go in the methods

7th paragraph:
31. These patients were not selected, therefore not included in the analysis?

Conclusion:
32. Add reference for re-admission problem

Table 1:
33. Add IQR abbreviation

Discretionary Revisions
34. Could the figure be simplified by dividing the patients into two columns (adult and paediatric) higher up in the diagram, showing each enrolment stage at the same level?

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

Declaration of competing interests:

'I declare that I have no competing interests'