Reviewer's report

Title: Clinical outcomes and molecular typing of heterogenous vancomycin-intermediate Staphylococcus aureus bacteremia in patients in intensive care units

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Reviewer: Anne-Claude Crémieux

Reviewer's report:

This retrospective study compared the in-hospital mortality attributed to heterogenous vancomycin-intermediate Staphylococcus aureus (hVISA) and vancomycin-susceptible Staphylococcus aureus (VSSA) bacteremias in 48 adults with MRSA-bloodstream infections hospitalized in ICUs of a Taiwanese tertiary medical center. Fourteen (29%) of the 48 isolates had the hVISA phenotype. Overall in-hospital mortality was 72.9% and significantly higher for the hVISA (92%) than VSSA phenotype (65%). However, mortality attributable to MRSA was similar for the two groups. Authors concluded that, for patients in ICUs with MRSA bacteremia, the hVISA phenotype was a factor predictive of mortality.

The paper is clear and well-written. As underlined by the authors, the major limitations are the retrospective, single-center design and the small sample size.

Discretionary Revisions:
The overall mortality seems to be high compared to the literature and this point should be discussed as it could hamper the extrapolation of these results to other centers.

It would also be of informative to provide more detailed information on previous vancomycin therapy (length of treatment, dose) and compare it between the 2 groups.

Minor essential revisions
- The sentence at the end of the second paragraph of the Discussion, “We did not observe any significant effect of treatment failure caused by hVISA in our study” is unclear and should be revised.
- Tables that appear in the “supplemental materials” should be included in the text.

Typographical error
- In Methods: bioMérieux instead of bioM’erieux
- In the Discussion,
  - End of 3rd paragraph: delete but (their results…)
  - Verify the sentence in the 4th paragraph : “In a previous study, SCCmec II …in
either study"

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests