Reviewer's report

Title: Available, Bed-sided, Comprehensive (ABC) Score to A Diagnosis of Methicillin-Resistant Staphylococcus aureus Infection: A Derivation and Validation Study

Version: 1 Date: 29 Jul 2017

Reviewer: Shey-Ying Chen

Reviewer's report:

Though the manuscript was revised and English-edited significantly by the authors, there remain concerns before it is accepted for publication.

My first comment is about the purpose and clinical application of the ABC score in this study. The authors mentioned that "The present study aimed to establish an available, bed-sided, comprehensive (ABC) score to differentiate various types of active MRSA infections from its colonization,...", so it is the clinicians but not infection control practitioners will use this ABC score. Judgement of active infection or no active infection of a patient is the job of clinicians. I don't think a non-doctor infection control practitioner can use this ABC score to suggest prescribing or discontinuing antibiotics use.

The second comment also is my major concern. I believe in clinical practice, most patients who need receive sterile site specimen culture usually also have certain clinical signs of infection or inflammation. A patient with positive MRSA culture from sterile specimen therefore should be considered as having active infection before the infection diagnosis can be safely excluded. So I worry about the inappropriate use of this ABC score might lead to delay treatment of patient with MRSA infection. The authors should mention this point in the limitation section.

I would like to suggest the author to do subgroup analysis for the ABC score sensitivity/specificity/PPN/NPC and re-plot the ROC curves and corresponding AUC values, by subgrouping patients with MRSA culture from sterile site and non-sterile site. It gives readers a more clear sense of using the ABC score in different clinical situations.

Finally, in "Background", the authors mentioned the difficulty in the diagnosis of "MRSA infection" and said "Scoring approaches for diagnosing MRSA infection have been invented. For example, multi-centered retrospective cohort studies have led to the development of simple risk
scores to identify patients with community-acquired MRSA pneumonia who might benefit from MRSA therapy [13, 14].” The MRSA risk score developed by Shorr et al., however, is to stratify the risk of MRSA as causative pathogen among patients with pneumonia. It is not a score to differentiate colonization or non-colonization of pneumonia patients with positive MRSA culture. It is inappropriate to cite this reference in the background section.

Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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