Reviewer’s report

Title: An epidemiological and molecular study regarding the spread of vancomycin-resistant Enterococcus faecium in a teaching hospital in Bogotá, Colombia 2016

Version: 3 Date: 10 Jan 2019

Reviewer: Research Square

Reviewer’s report:

"STATISTICAL REVIEWER ASSESSMENT:

Is the study design appropriate for the research question (considering whether the analyzed population accurately reflects the design and whether you see any problems with control/comparison groups, e.g., likely confounders)?

No - there are minor issues

Are methodologies adequate and well implemented (considering whether assumptions are addressed and whether analyses are robust)?

No - there are minor issues

Are the analyses adequately communicated (considering whether reporting details are adequate and whether figures and tables are well labeled and described)?

No - there are minor issues

Does the interpretation accurately reflect the analyses without overstatement (considering whether limitations/bias are acknowledged and whether accurate descriptors, e.g., 'significant', are used)?

No - there are minor issues

Could an appropriately REVISED version of this work represent a statistically sound contribution?

Probably - with minor revisions

STATISTICAL REVIEWER COMMENTS:
The findings of the study may help the molecular microbiologists, clinical practitioners and other laboratory researchers and workers consider the sensitivity and resistance patterns of vancomycin towards Enterococcus faecium. This will help them choose alternatives for the same.

The authors have performed the study based on the Multilocus variable-number tandem-repeat Analysis (MLVA) by applying modified time-place-sequence (TPS) algorithm. They have presented their data in tables, figure and supplemental files (tables and figures) but only using descriptive statistic (frequency distribution).

The authors have not applied any of the inferential statistic (such as correlation, linear regression, Chi square/Fisher's exact test) that may be applicable here. With the application of such inferential statistic, the findings could be made more conclusive. Other comments have been given with this peer review.

REQUESTED REVISIONS:

General comments:

Line 156: Mention full form of 'TD'.

Table 2A: Write short name of the month 'August' properly.

Specific comments:

Background:

* Lines 84-86: Elaborate upon those additional therapeutic efforts.

* Lines 100-103: Rewrite in separate sentences.

Methods: Mention basis of sample size calculation, sampling technique, study procedure and statistical analysis (descriptive as well as inferential).

Results:

* Elaborate upon the diagnosis for which vancomycin was started and showed resistance pattern.

* Simplify the supplementary table 1.

* Table or figure showing molecular study (as mentioned in the title) is still lacking.
Lines 113-116: Total number of beds was not 802 while counting all the beds mentioned.

Line 124: Patients cannot be expressed in amount (rather expressed in number).

Line 125: Mention the criteria established by the Bogotá District Health Secretariat.

Line 269: Cite references to these criteria.

Line 278: Elaborate upon the conventional epidemiological surveillance.

Figure 2: Cite the reference to support the statement "If this index is above the third standard deviation (SD), an outbreak is confirmed."

Discussion and conclusion:

Elaborate upon your conclusion "… real-time combined clinical and molecular epidemiological models contributed towards introducing/enforcing more efficient outbreak control strategies." How can you conclude based on the descriptive statistic of just 33 sample size? This needs elaboration in large scale sample size to get conclusive evidence.

References:

* Rewrite references 2, 3, 6, 9, 16, 17, 19-21, 27, 31-41, 43-45 and 47 keeping the names of the journals properly.

* Rewrite references 10, 23, 24 and 28 in English version to allow the prospective researchers track them.

* Rewrite references 12, 13 and 46 by removing the brackets.

* Rewrite reference 22.

ADDITIONAL REQUESTS/SUGGESTIONS:

"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.
No

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

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

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