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: 0 Date: 29 Apr 2018

Reviewer: Laurence Armand

Reviewer’s report:

This manuscript describes an outbreak of vancomycin-resistant Entecococcus faecium (VRE) that occurred at the Mederi Teaching Hospital in Bogota. The authors performed molecular analyses on strains of E. faecium to explain the transmissions.

It's an interesting study, but I have some major comments.

First of all, the manuscript is too long and should be shortened.

Second, the manuscript is not very clear.

It is unclear whether the authors described the spread of VRE strains in their hospital or whether they describe an outbreak of healthcare-associated infection due to E. faecium, as trains included in molecular typing were present in infection and colonization and not all isolates are taking into account in the outbreak.

In addition, it is unclear when the outbreak began and for how long. On Figure 1, a very high increase in isolated VRE strains can be observed in February 2016, but the authors wrote that the VRE outbreak began in May 2016 with the increase in VRE-related HIAs.

Introduction

Too long. For example, fields L18 to 23 P4 could be deleted.

L45 P4 : "antibiotic misuse": not all antibiotics, probably avoparcin.

L52 P4 : "Efm represented 3.7% of HAIs" : where?

L12-17 P5: prevalence instead of probability?

Methods

It is difficult to understand why strain clonality was not used as the first criterion to confirm transmission.
It will be clearer if authors could use CDC criteria to describe the outbreak as "confirmed", "probable", "possible" transmission (possible has fewer criteria than probable to suspect transmission), in that order and taking into account both patient location and strain clonality.

Result

L26-36 P10 "Hypothesis....program" is more a discussion than a result.

Figure 1: Did the authors report several or only one isolated strain per patient?

Why is the figure 1 stopped in June, since the manuscript concerns the period from May to September?

Figure 4: Same remark as for the methods part. Please use "confirmed, probable and possible" CDC criteria.

Table 2 Only one MIC dilution difference may be a technical artefact. I think Table 2 and the results concerning the prediction of the van gene with MIC of Vancomycin and teicoplanin should be deleted. Simply indicate that vanA genes are associated with MIC of Vancomycin from 64 to >512 and to teicoplanin from 8 to < 256 and describe the MIC of negative VanA genes.

The MIC of teicoplanin could be added to Table 3A.

Table 3 the name of the month would be clearer for the reader than the colors.

Discussion:

The main limitation of this study is that we did not know whether systematic rectal screening for VRE was performed. If not, it is difficult to describe the outbreak because digestive colonization by VRE is much more frequent than infection. The unknown carriers are the hidden reservoir for the transmission and dissemination of VRE. These limits should be included in the discussion section.

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

Yes

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?
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Not relevant to this manuscript

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

Acceptable

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