Reviewer’s report

Title: Prevalence and Antifungal Susceptibility of Candida albicans Causing Vulvovaginitis Among Pregnant Women in Lebanon

Version: 0 Date: 13 Aug 2019

Reviewer: Maria Drogari-Apiranthitou

Reviewer's report:

The objectives of this study were to (i) determine the prevalence of VVC in pregnant women in Lebanon, (ii) evaluate the antifungal susceptibility profile of the isolated Candida strains, and (iii) evaluate the association between the presence of Candida species and gestational complications and outcomes. The subject is interesting, however the study appears to have several flaws and major points of concern:

Major points

1. The study design has not been adequately described and there is confusion with regard to the populations included in the study. In the abstract the authors state: "This study determined the presence of Candida species in symptomatic pregnant women", in the Background: "...the prevalence of VVC caused by Candida species in pregnant women", whereas in the Discussion it reads: "The present study was conducted to evaluate the effect of Candida colonization with regard to pregnancy outcomes". This is not made clear in the Methods or Result section of the manuscript, as it should. Were all of the 100 Candida-positive women symptomatic for VVC? Were they clinically diagnosed having VVC? How were they evaluated? Were all of the remaining 158 women symptom-free or had other types of vaginitis/vaginosis? How many were only colonized? How many of the 165 participants who filled out the questionnaire had VVC? What was the control group of the study? Not the healthy (or not colonized) ones? If the associations have been calculated only between the different species isolated and not compared to a healthy group, objective (iii) as above, cannot be met (as it reads "the presence of Candida species"), comparisons with other studies in the Discussion are not possible and, unless all these questions are answered, the stated conclusions cannot be evaluated.

2. It is well known that species as C. glabrata and C. krusei are less virulent, usually affecting individuals with certain predispositions and peri- or postmenoposal women. If the frequencies of these species were so high (41% and 17%, respectively) the patients having indeed VVC, the authors should present detailed clinical data and discuss these important findings accordingly.

3. Isolates were identified as C. glabrata and C. krusei using chromogenic agar only. As numerous other species have pink or creamy colored colonies, how confident were the authors that identification was accurate? How did they confirm that? They should comment on that.
4. In the Results, the actual numbers with percentages should be presented and not only the interpretation of the statistics; e.g. number of women (%) with x compared to number of women (%) without x, etc.

Other points

1. The demographic and clinical characteristics with patient numbers should be presented in a separate Table.

2. The Background is too long. Lines 36-56 in page 3 and 4-19 in page 4, can be omitted. There is also information repeated in the Discussion.

3. In the Methods, the description of a commercial method such as the Etest is redundant and should be omitted (lines 46-58, page 6 and lines 4-14, page 7).

4. The Discussion is unnecessarily long. It should be focused on the results of this study and avoid extended, not directly related information, on treatment for example. Information in page 9, lines 43-53 belongs to the Background. The finding that 4 cultures were mixed is trivial and the authors should not start with it. In such cases, C. albicans, if present, is considered the culprit anyway and treatment is primarily focused on that species.

5. In Tables and Figures the results of the current study should be presented. Table 2 and Fig 1 are irrelevant to this study. Table 2 would be meaningful if only data from vaginal swabs from pregnant women were presented. In Table 3, delivery week, delivery type, induced labor and other gestational complications are not specified. Legends to the Tables and Figures are missing.

6. The Conclusions, page 13, except for the first sentence and lines 31-33, are too generic and do not derive directly from the results of the current study.

Some minor errors and suggestions for improvement

1. Page 2, lines 36-38. More accurate to say 'C. albicans was significantly associated only with gestational diabetes'.

2. Page 2, line 45. 'efficient' would be more accurate than 'efficacious'.

3. Page 2, line 50. 'antenatal'

4. Page 3, line 24 'in' pregnant women
5. Page 4, lines 41-46. The resistance profile of circulating C. albicans cannot "predict" appropriate prophylaxis and treatment. It just "should be considered when local prophylaxis and treatment guidelines are established" as stated in ref.26.

6. Page 9, 29. "The observed" or "The calculated susceptibility rates were....." in place of "The susceptibility rates … were determined to be…"

7. Page 10, lines 7-14. There is no information about vaginal samples in the study in ref 36. This could be a good argument for the authors as to why they undertook the present study.

8. Page 10, lines 48-56. "However…delivery.", citation is needed for this sentence.

9. Page 11, lines 7-9. In a more recent study also using a molecular typing method (pulsed-field gel electrophoresis), it has been shown that vertical transmission has the principal role in the neonatal colonisation by C. albicans in the very first days of life [Filippidi A, Galanakis E, Maraki S, Galani I, Drogari-Apiranthitou M, Kalmanti M, Mantadakis E, Samonis G. The effect of maternal flora on Candida colonisation in the neonate. Mycoses. 2013 Jun 12. doi: 10.1111/myc.12100.] The authors may add this information here.


11. Page 11, line 31. 'in' Iran

12. Page 11, line 36. 'in' agreement

13. 'C. krusei' should be corrected throughout the text and tables.

14. 'Candida' should be in italics.

**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

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