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OPEN PEER REVIEW

Comparative Study of *Candida albicans* Strains from Clinical and Environmental Sources in Iran

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

1 comment · 12 Nov 2024

Referee 1 Reviewer

MINOR REVISION 12 Nov 2024

Dear Authors,

I would like to express my gratitude for the time and effort you put into preparing the manuscript on virulence factors (hydrophobicity, biofilm formation, ergosterol content, and secretory enzymes) in Candida albicans strains from clinical and environmental sources. I found the topic to be both novel and interesting, and I believe it fits well within the scope of the journal. The study was well conceptualized, the data were precisely collected and reported, and the findings were comprehensively explained.

Before considering the manuscript for publication, I would like to address a few points:

1. Please mention the time of the study in the first paragraph of the Methods section.
2. Add a subsection on statistical analysis in the Methods section, including details on descriptive and inferential analysis, the statistical software used, and the probability cutoff.
3. Specify a separate conclusion section at the end of the manuscript.
4. The figures are excellent—great job!

Best regards,

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewer Response Letter

Dear Editor,

Thank you for providing us with the reviewers' comments on our manuscript titled "[**Comparative Study of *Candida albicans* Strains from Clinical and Environmental Sources in Iran**]". We greatly appreciate the time and effort that the reviewers have taken to assess our work. In order to facilitate your review, we have highlighted the comments from Reviewer 1 in blue and those from Reviewer 2 in red, with our corresponding responses following each comment.

We have addressed all of the reviewers' suggestions and have made significant revisions to the manuscript accordingly. Please find below a summary of the changes we have made in response to the reviewers' comments:

Reviewer 1

Reviewer Comment *1*: *Please mention the time of the study in the first paragraph of the Methods section.*

Response:

Thank you for your suggestion. I have added the time of the study to the first paragraph of the Methods section for clarity. The updated sentence now reads:

"This cross-sectional study, conducted between January 2020 and December 2021, involved the collection of 105 clinical samples (including urine, wound exudates, oral swabs, and vaginal swabs) and 165 environmental samples (such as those from patient beds, drug trolleys, floors, nursing stations, sharp containers, high-touch surfaces, and portable equipment) suspected of containing Candida albicans at Imam Khomeini Hospital in Ahvaz, Iran. "

Reviewer Comment *2*: *Add a subsection on statistical analysis in the Methods section, including details on descriptive and inferential analysis, the statistical software used, and the probability cutoff.*

Response:

Thank you for your valuable feedback. In response to your comment, we have added a detailed subsection on the **Statistical Analysis** in the **Methods** section of the manuscript. This new subsection includes the specifics of both descriptive and inferential statistical analyses, as well as the statistical software used and the probability cutoff. The updated **Statistical Analysis** section is as follows: **Statistical Analysis**

Statistical analysis was conducted using SPSS v.18 (SPSS Inc., Chicago, IL, USA) and Stata Version 14.0 (IBM, Armonk, NY, USA). Descriptive statistics, including frequencies and percentages for categorical variables, and means with standard deviations for continuous variables, were calculated. To compare categorical variables, such as phospholipase and proteinase activity as well as biofilm formation, the Chi-square test was employed. For continuous variables, including hydrophobicity and ergosterol content, the independent t-test was used to assess differences between clinical and environmental isolates.

The Kolmogorov-Smirnov test assessed the normality of the continuous data. In instances where data were not normally distributed (e.g., hydrophobicity), the non-parametric Mann-Whitney U test was applied. Statistical significance was determined at a p-value of less than 0.05. All analyses were two-tailed.

Reviewer Comment *3*: *Specify a separate conclusion section at the end of the manuscript.*

Response:

Thank you for your constructive suggestion. In response to your comment, we have added a separate **Conclusion** section at the end of the manuscript. This section summarizes the key findings of the study and highlights their implications. The updated manuscript now includes a distinct **Conclusion** section, which is clearly separated from the **Discussion**.

Reviewer Comment *4*: *The figures are excellent—great job!*

Response:

Thank you very much for your positive feedback on the figures. We are glad to hear that you found them excellent. We appreciate your recognition of the effort put into presenting the data visually, and we are pleased that the figures contributed to the clarity of the manuscript.

Reviewer 2

Reviewer Comment *1*: *The title could be shorter without mentioning studied virulence factors.*

Response:

Thank you for your helpful suggestion. We understand your point about the length of the title and agree that a more concise title could improve clarity and impact. We have revised the title to focus on the main comparison between clinical and environmental sources, without explicitly listing the virulence factors.

Revised Title:
Comparative Study of Candida albicans Strains from Clinical and Environmental Sources in Iran

This revision maintains the focus of the study while making the title more concise, as per your recommendation.

Reviewer Comment *2*: *The introduction could extend its scope by correlating global perspectives with local statistics in Iran, giving a clearer picture of the study's geographic impact.*

Response:

Thank you for your insightful suggestion. We agree that adding a global perspective while highlighting local statistics would provide greater context for the study and better emphasize its relevance in a broader geographical setting. In response, we have revised the **Introduction** to include both global data on *Candida* infections as well as specific statistics and trends from Iran. This should provide a clearer understanding of the geographic impact of the study and the importance of our findings in the context of regional health concerns.

Reviewer Comment *3*: *Adding more clarity in describing sample size determination and its justification is highly recommended.*

Response:

Thank you for your valuable comment regarding the sample size determination. We understand the importance of providing a clear justification for the chosen sample size.

The sample size for this study was determined based on the typical guidelines and practices used in similar studies evaluating *Candida albicans* prevalence and virulence factors, as well as the availability of samples during the study period. While a formal power analysis was not conducted, the sample sizes selected (105 clinical samples and 165 environmental samples) were considered sufficient to achieve the study's objectives of evaluating the distribution of *C. albicans* and its virulence factors in both clinical and environmental settings.

In general, cross-sectional studies investigating *Candida albicans* prevalence in hospital environments and its associated virulence factors typically involve sample sizes ranging from 100 to 300, depending on the diversity of sample types and the research objectives. The sample sizes used in this study align with those reported in previous similar studies, which are considered adequate for descriptive statistical analysis and comparisons between clinical and environmental isolates.

Furthermore, all eligible samples meeting the inclusion criteria during the 24-month data collection period were included, ensuring a comprehensive and representative sample for the analysis. Given the observational nature of the study and the resources available, this approach was deemed appropriate to achieve the desired outcomes.

We hope this additional clarification addresses your concern regarding the sample size determination and provides a clearer understanding of the rationale behind the sample size choice.

Reviewer Comment *4*: *Discussion part falls short in addressing limitations of the study or suggesting specific future research directions.*

Response:

We appreciate the reviewer’s valuable feedback and agree that the Discussion section can benefit from a more thorough examination of the study's limitations and clearer suggestions for future research directions.

In response to this comment, we have revised the Discussion to explicitly address the limitations of the study, including the sample size, the cross-sectional design, and the exclusion of certain potential virulence factors and environmental variables.

We believe these revisions better acknowledge the constraints of the current study and outline a clearer path for advancing knowledge in this area. Thank you again for your constructive suggestion.

2 Revision 1

0 comments

No public comments in this round.