Reviewer’s report

Title: Distribution of Candida albicans and non-albicans Candida species isolated in different clinical samples and their in vitro antifungal susceptibility profile in Ethiopia

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Reviewer: Vijay Aswani

Reviewer's report:

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This is a descriptive study of Candida species isolated from a variety of clinical samples and their in vitro antifungal susceptibility profiles. The study reports on 209 yeasts isolated from 776 different clinical samples. The authors found that while C. albicans remains the dominant yeast species isolated from the samples (49%), the proportion of non albicans Candida (NAC) is close at 43.1%. The authors report that 4% of the isolated yeasts were resistant to fluconazole. They compare the susceptibility of the isolated yeast isolates to five different antifungal drugs.

Comments:

Page 1, line 37: I would characterize this as a descriptive study of Candida species from clinical isolates. To call it a prospective study is a bit of an over-reach because (1) there was no inclusion and exclusion criteria identified, (2) there was no longitudinal study element, (3) the statistics and data description is very basic -- simple percentages of the different Candida strains and sensitivities generated as output as part of a routine laboratory evaluation; (4) a prospective study design would have looked at the power of the study to answer the questions of distribution of Candida species among different clinical sites, and sought to collect an equal number of specimens from each site, with the minimum being determined by the study power. This is a simple descriptive study where a number of specimens for a period of time was collected and analyzed. The total number of specimens, their distribution from different clinical sites and the time period of collection do not seem to have any reason other than perhaps, availability and convenience.

Page 1, line 42: change 'sits' to 'sites'.

Page 2, line 33: I think you mean to say that attention should be given to treating candidiasis based on sensitivities rather than empirically.
Page 3, lines 43 to 54 should be re-written. The statement is too vague and the grammar is not correct.

Page 4, lines 4-7: correct English

Page 6, lines 15-17: what do you mean by 'considered to be correct'? What was your threshold for accepting the identification: Excellent, very good, good, acceptable or low discrimination?

Page 5, lines 7-12: what swabs were used to collect the samples? Were blood cultures specifically excluded from the study? Why?

Page 6, 33 - 38: what was the purpose of coding since the results are aggregate summaries where individual identifiers are not used? What does 'double entered' mean?

Page 7, lines 12-18: 209 yeasts were isolated from 776 samples. It would be useful for you to report on the percentage of each sample category that was positive for yeast. Your study seems skewed to the yeast population of vaginal swabs, since 40% of your yeast came from vaginal swabs. Could the yeast species at different locations be different? This information is hard to gather when certain clinical samples are over-represented in your population. A normative statistical analysis might help, although your sample sizes seem rather small.

Page 7, lines 28 - 33: the numbers in brackets such as 14/90X 100 are unnecessary.

Page 7, lines 59 to page 8, lines 4: the data is confusing. There were 209 positive yeast samples. 15 of these were non-Candida. That leaves 194 yeast samples. It is not clear why C. famata and C. ciferrii were not tested. They are 13 and 6 strains, respectively, totally 19. 194-19 = 175. So for fluconazole sensitivities you included C. famata but not C. ciferrii?

Page 9, line 11: the comparison of C. albicans being the most frequently isolated yeast among different studies will vary based on the patient population and site from where the sample was collected.


Page 10, lines 16-25: you may need to clarify the method the VITEK2 compact system uses to make the identifications. If there is serious concerns regarding strain misidentification, then your distribution discussion becomes suspect.

Page 10, line 43: this is confusing in light of page 7, line 59 to page 8, line 4. On the earlier page (page 7), you report 85.6% of Candida were susceptible while here you report 87% Are you trying to round up? If so, shouldn't it be 86%?

Page 8, line 4: you suggest that 10.5% of your Candida species were resistant to fluconazole. The percentages of C. dubliniensis (total 7 strains), C. rugosa (total 10 strains) , C. lipolytica (total 6 strains) and C. ciferrii (total 6 strains)
This study has several limitations: the absence of clinical data and the exclusion of blood cultures severely limit its applicability. Most life-threatening Candida infections are candidemia (as you point out in the background section of your paper). So the applicability of this work to clinical use is limited. The isolation of yeast from sputum is interesting. Sputum cultures are usually obtained from individuals with cystic fibrosis, HIV/AIDS and cancers or other immunocompromising conditions. In comparing results of frequency of different Candida strains with other studies, questions such as the clinical site the specimens came from and what method of identification affect the results.

I agree that there is a general shift away from the dominance of C. albicans to other organisms. However, how much of this is due to increased ability to detect other Candida strains versus true change in prevalence? Modern methods that are PCR-based or spectrometric (MALDI-TOF) are more sensitive and reporting out strains not previously reported in samples. The VITEK 2 uses 47 fluorescence-based biochemical assays and falls in between the older methods of identification and the nucleic acid based methods.

I suggest looking over the literature again. Your papers are a little dated and you have left out some recent works relevant to your study:

Species distribution and antifungal susceptibility patterns of Candida isolates from a public tertiary teaching hospital in the Eastern Cape Province, South Africa.


Distribution of clinical isolates of Candida spp. and antifungal susceptibility of high biofilm-forming Candida isolates.


Surveillance study of the prevalence, species distribution, antifungal susceptibility, risk factors and mortality of invasive candidiasis in a tertiary teaching hospital in Southwest China.


The epidemiology of Candida species in the Middle East and North Africa.

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

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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