**INTRODUCTION**

Candida auris is an emerging multidrug resistant yeast that causes severe invasive infections and nosocomial outbreaks, with mortality rates ranging from 30-72%.

**METHODS (continued)**

- A 0.5 McFarland in saline was prepared from each isolate, and inoculated into fresh residual nasal-axillary-groin-perineum-rectal swabs (Copen ESwal™ with liquid Amies), with a final concentration of 250 CPU/mL.
- Six 5-fold dilutions from (250 CPU/mL to 0.08 CFU/mL) of each spiked sample were prepared.
- Each diluted sample was:
  - Directly inoculated onto Colorex Candida Plus (Miconostyx, Ottawa) (M) agar and directly tested for C. auris using PCR
  - First inoculated into Auris Enrichment Broth (Thermo Fisher Scientific, Massachusetts) (AEB) and incubated for 48 hrs, before inoculating onto M and before testing for C. auris using the BioGX C. auris research-use-only PCR using EasyMag (bioMérieux) extraction.
- The limit of detection was calculated using a Probit analysis (https://biostats.shinyapps.io/LOD_prob/) and the Analyse-it Method Validation Edition (Analyse-it Software, Ltd., UK), both at a probability of 95%.
- The range for absolute LOD values was assessed using back-calculated initial sample concentrations and a review of 0.5 McFarland concentrations in the literature.

**RESULTS**

- The calculated LODs are shown in Table 1 and Figure 1.
- AEB-enriched methods were the most sensitive methods:
  - Culture-based, AEB-enriched methods were on average nearly 200 times more sensitive than culture-based, direct-to-agar methods but the halo effect from AEB-enriched cultures (see AMMI Canada – CACMID 2022 Poster P100) has similar sensitivity with culture-based, direct-to-agar methods.
  - PCR from AEB-enriched specimens was on average ~ 100 times more sensitive than direct PCR from specimen.
- Notably culture-based AEB-enriched methods had the same sensitivity as PCR from AEB-enriched specimens.
- Direct PCR from specimen was the second most sensitive method.
- Direct PCR from specimen was nearly 2 times more sensitive than direct-to-agar methods.
- Culture-based, direct to agar methods had the lowest sensitivity.

**CONCLUSIONS**

- AEB-enrichment of specimens increased the sensitivities of both culture-based and PCR screening procedures compared to direct-from-specimen procedures.
- Culture-based, direct-to-agar screening methods are the most cost-effective and easily implemented into the clinical lab workflow, but allow for greater breakthrough of other species.
- Culture-based, AEB-enriched screening methods are more sensitive, but require slightly more time, a higher cost, and extra broth-enrichment steps in the workflow.
- PCR screening methods have the shortest turnaround time, but highest cost worked without significantly improved sensitivity compared to culture-based methods.

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**REFERENCES**