Results: Comparable results were obtained using EUCAST and CLSI methods.

Objective: MIC (≤4) to fluconazole and terbinafine was observed in 100% of isolates, both CAR and CAS. On the contrary, a statistically significant difference in terbinafine, echinocandins, disomicarpos, and fumidilbacin MICs between CAR strains and CAS strains was observed with higher geometric mean (GAM) in CAS (3.5-7.2 μg/mL) than in CAR (0.8-2 μg/mL) strains. Proline was detected in the lowest GMs of 0.6 and 0.42 μg/mL in CAR and CAS strains, respectively. A significant difference of the GMs for all the DMIs tested, except proline, was observed between the isolates harboring a TRA/FHM/PM or M220/IM2 mutation (GAM using 10-16 μg/mL) and those with other CYP51A mutations (GAM 1-4 μg/mL).

In the CAS showing high DMI MICs, the absence of CYP51A mutations was confirmed, while a synonymous mutation P194P was identified in CYP51B. No mutations in HMGIC genes were found.

In the induction tests, the prolonged exposure to DMIs showed induced phenotypic resistance of 100% (13/16 isolates) for echinocandins, of 72.7% (8/11) for terbinafine and fumidilbacin, and of 91.1% (10/11) for proline. Molecular analyses to understand if the phenotypic resistance corresponds to induced mutations in CYP51A, CYP51B, and HMGIC genes is in progress.

Conclusion: Preliminary results confirm cross-resistance between clinical azoles and DMIs, with MIC differences between CAR and CAS and between strains with different mutations in the CYP51A gene. Furthermore, the ability of DMIs to induce resistance in vitro was highlighted.

P146 Preliminary evaluation of gradient concentration strips for detection of terbifinim resistance in Trichophyton spp.

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Poster session, November 1, 2022, 12:30 PM - 1:00 PM

Objectives: Dermatomycosis is the most common superficial fungal infection. Trichophyton rubrum and T. mentagrophytes are the most frequently isolated species, but their incidence varies according to geographical regions. Terbinafine is the main molecule used to treat this type of infection. In recent years, a high incidence of allergic reactions, infections, and treatment failures due to a newly described species, T. indotigrum, have been reported in India and recently described in Europe. It currently a public health problem for the management of these infections in this country.

Until now, the monitoring of dermatomycosis susceptibility to terbinafine was easily performed due to the lack of standardized in vitro tests. Since then, an in vitro technique has been standardized by the European Committee for Antimicrobial Susceptibility Testing (EUCAST) to test terbinafine and other antifungals. Recently, a gradient concentration strip method has been marketed.

The aim of this study was to compare terbinafine susceptibility testing by the gradient concentration strip (GCS) method and the EUCAST-standarized method.

Materials: A panel of 47 molecularly identified isolates of T. examinosporum, T. mentagrophytes, and T. indotigrum was used. The panel included 7/16 susceptible isolates and 4 terbinafine-resistant isolates for which the susceptible genome was sequenced.

Minimum inhibitory concentration (MIC) of terbinafine was determined using EUCAST microdilution broth method for dermatophytes. Isolates were supplemented with cycloheximide and chloramphenicol. Final drug concentrations ranged from 0.008 to 8 μg/mL and inoculum plates were incubated at 25°C for 5 days. The MIC was determined spectrophotometrically with a 96-well growth inhibition endpoint.

MIC of terbinafine was also determined using GCs (Terbinafine Eny MIC® Grifol, Holika, India) on RPMI agar. The plates were incubated for 5 days at 25°C. After incubation, MIC was read by using a complete inhibition endpoint. Isolates with undetermined MIC were excluded.

Results: EUCAST MIC values ranged from 0.008 to 0.0625 μg/mL, and from 0.12 to 16 μg/mL for susceptible and resistant isolates, respectively.

GCS MIC values ranged from 0.002 to 0.015 μg/mL and 0.125 to 16 for susceptible and resistant isolates, respectively.

The categorical agreement (percentage of strains found in the same category) by the two techniques was 98%.

Conclusion: These preliminary results show that GCS can detect resistance to terbinafine and could be used as a screening method. These results must be confirmed on a larger panel of isolates.
Identification, clinical profile, antifungal susceptibility pattern of candida auris from a tertiary care center in India

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Poster session 1, September 21, 2022, 12:10 PM - 1:30 PM

Objectives:
To identify the phenotypic characteristics of Candida auris.
To analyze the clinical profile of Candida auris infection.
To describe the antifungal susceptibility pattern of Candida auris.

Methods:
The study was conducted in the Department of Microbiology in Mycology division at Sri Ramachandra Institute of Higher Education and Research from December 2019 to November 2021. The study protocol was approved by Institutional Ethics Committee.

Candida auris isolated from various specimens sent to the laboratory were identified by Matrix-Assisted Laser Desorption Ionization-Time of Flight mass spectrometry (MALDI-TOF). The growth characteristics of C. auris were investigated on various media including Selective Anaerobic Medium (SAM), HIH Broth agar Candida and Terrium reduction agar.

Antifungal susceptibility testing was performed by using the Clinical and Laboratory Standards Institute broth microdilution method M27-A3. Antifungal susceptibility testing was performed by using the Clinical and Laboratory Standards Institute broth microdilution method M27-A3. Antifungal susceptibility testing was performed by using the Clinical and Laboratory Standards Institute broth microdilution method M27-A3. Antifungal susceptibility testing was performed by using the Clinical and Laboratory Standards Institute broth microdilution method M27-A3.

Results:
A total of 65 C. auris isolates were collected. Both adult and pediatric cases were included. The mortality (23.1%) of the C. auris cases were seen in the age group of 15-64. Median age was 54 years for the adults. Among the 7 children, 6 were neonates and 1 was an infant. The most common source of isolation is urine and blood.

A total of 55/57 isolates showed moderate to heavy growth on the SAM, while 2 isolates showed mild growth after 72 h. But all the other Candida species and other yeast tested were inhibited on this medium. All the isolates of C. auris grew as cream to pinkish purple colonies on HIHreone agar Candida. On Terrium reduction agar, all of them formed maroon colonies.

The average duration of hospital stay was 25 days (range 4-63). A total of 35 of the patients were admitted to ICU. 8 had undergone mechanical ventilation and invasive. Central venous catheter was inserted in 9 patients and post-operative catheter placed in 4 patients. 4 patients had undergone tracheotomy and 25 of them had undergone some other invasive procedures. Fetal maternal nutrition was received by 3 patients, 16 were diabetes and 11 were hypertensive. Prior antifungal exposure was present in 9 patients and 26 had received broad-spectrum antibiotics.

The crude mortality rate with C. auris infection in patients was 32.4% and the attributable mortality rate, as considered by the toxemic physician was 10.4%.

Antifungal resistance was noted to be amphotericin B (n= 15, 40.5%), fluconazole (n= 10, 28.5%), voriconazole (n= 4, 11.1%), caspofungin (n= 6, 16.6%), posaconazole (n= 3, 8.5%), and caspofungin (n= 4, 11.1%). Multidrug resistance was noted in 15 (40.54%) isolates and 3 isolates (8.1%) were resistant to a drug from all three groups.

Conclusion: C. auris poses a great threat to immunocompromised individuals and those admitted in ICUs for long term.

Antifungal susceptibility and in silico drug interaction with fluconazole against C. auris

Antifungal susceptibility pattern of Candida auris from a tertiary care center in India

Antifungal resistance was noted to be amphotericin B (n= 15, 40.5%), fluconazole (n= 10, 28.5%), voriconazole (n= 4, 11.1%), caspofungin (n= 6, 16.6%), posaconazole (n= 3, 8.5%), and caspofungin (n= 4, 11.1%). Multidrug resistance was noted in 15 (40.54%) isolates and 3 isolates (8.1%) were resistant to a drug from all three groups.

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Identification, clinical profile, antifungal susceptibility pattern of candida auris from a tertiary care center in India