Table 2. Antifungal susceptibility pattern of Candida strains isolated from otomyom patients

| Species          | FLC | KTC | MCZ | NYT | TCZ | ITZ | AMB |
|------------------|-----|-----|-----|-----|-----|-----|-----|
| C. albicans (n=9) | 0.5-2 | 0.016-0.063 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 |
| C. parapsilosis (n=6) | 0.5-2 | 0.016-0.063 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 |
| C. orthopsilosis (n=6) | 0.5-2 | 0.016-0.063 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 | 0.016-2 |

Note: Antifungal agents: FLC: fluconazole; KTC: ketoconazole; MCZ: miconazole; NFT: nystatin; TCZ: tocinazole; ITZ: iraconazole; AMB: amphotericin B, VRC: voriconazole; GM: geometric mean.

WSA

Trichophyton rubrum enemizing: molecular and antifungal susceptibility study on Trichophyton in North India and how antifungal stewardship can contribute in control

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Background: Trichophyton spp are yeast-like organisms belonging to class Basidiomycota which are usually commensal. It can cause diseases ranging from superficial infection, commonly known as White Piedra, to disseminated infections (Trichophytonosis). Cases of invasive Trichophytonosis have increased worldwide. It has now become the second most common cause of tinea after Candida spp, especially in immunocompromised individuals.

Methods: We conducted a hospital-based prospective chart review of six patients with nonmucosal infections caused by Trichophyton spp. Demographic data, clinical history, comorbidities, and outcomes after treatment were collected. Samples were processed using conventional media, biochemicals, and confirmed using automated systems, MALDI-TOF and VITEK-2.

Results: A total of 8 patients developed UTI and 4 developed disseminated bloodstream infections. All patients had associated co-morbidities. All patients had history of treatment with antifungal drugs which were ineffective. In all, 8 patients were identified to be infected with T. anulatus and T. rubrum. All patients showed improvement with azoles. We also encountered a case of breakthrough Trichophytonosis.

Conclusions: Iatrogenic Trichophytonosis developed in patients with associated risk factors. Trichophyton spp presents diagnostic and therapeutic challenges. It is usually confused with disseminated candidiasis leading to incorrect treatment and increased risk of breakthrough Trichophytonosis. Prolonged antifungal treatment can lead to disseminated infection. New trazoles have shown to be effective against Trichophyton spp.

PSR

Prevalence and antifungal susceptibility of Candida spp from the sputum sample of patients in a tertiary care hospital in Sikkim

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Objectives: The role of Candida in sputum culture is unclear and is generally not treated when present in sputum samples. The objective of this study is to describe the clinical findings of patients with Candida spp. in sputum and their antifungal susceptibility pattern to know the local epidemiology of antifungal resistance.

Methods: Patients with respiratory symptoms attending the tertiary care hospital during the study period of 6 months from June 2021 to December 2021. A total of 23 sputum samples were processed in the microbiology laboratory. Samples were processed following conventional mycological procedures including direct microscopy (visualization of budding yeast cell on slides), growth on saboraud dextrose agar, germ tube test, and CHROMagar. The isolates were identified by rapid identification (RI) of yeast and yeast-like organisms in the BD PhoenixTM Automated Microbiology System.

Antifungal Susceptibility Testing (AST) was carried out by disk-diffusion susceptibility testing, Zone interpretation criteria as per M44-A2 of CLSI were used. Antifungal and were amphotericin B (20 mcg), itraconazole (10 mcg), fluconazole (25 mcg), and voriconazole (1 mcg). Results of tests done on 25 isolates were collated and analyzed retrospectively.

Clinical profile of the patients was taken retrospectively from record section and analyzed.

Results: Of the 23 patients, most common presentation was fever followed by cough and dyspnea. A total of 34% patients were receiving some form of steroid (inhalable or inhalational). Only 2 patients were COVID positive by RT-PCR and 7(30%) patients had some radiological findings like consolidation, emphysema changes, etc. Immunodeficiency pattern was seen in 4 (17%) patients like tuberculosis and diabetes mellitus.

Of the 23 samples, C. albicans showed prevalence of 95%, as compared with C. tropicalis (15%) and C. glabrata (4.5%). AST showed Candida spp. was found to be mostly sensitive to voriconazole and fluconazole. Resistance to amphotericin B was seen in most Candida spp. Itraconazole was not susceptible to even one isolate only 4 samples were intermediate (Fig. 1).

Conclusions: Infections with Candida spp. are usually of low virulence and are associated with a few well-defined risk factors as immunosuppressed state, malignancy, and steroid therapy. Understanding these risk factors, identifying the species with changing trends in antifungal resistance, instituting infection control practices to reduce morbidity and mortality in critical care areas can improve outcomes.

Surveillance of the rates of Candida infection in critical areas, reporting of outbreaks and continuous monitoring of antifungal susceptibility patterns will help in showing the best therapeutic management of complicated cases. Comparison of trends in infection rates among hospitals between various Indian cities and their resistance patterns can reveal vital information regarding the breakthrough of infection control measures. Most Candida infections are of low virulence and only become significant in the vulnerable critical care areas. With the rise in prevalence of inherently azole-resistant species and rising use of echinocandins in ICUs, identifying risk factors and controlling the infection early can improve patient outcomes.