PM04
Antifungal susceptibility and mechanism ofazole resistance in Candida albicans clinical isolates from orthopaedic candidiasis patients in Iran
Zahrat Jahanhashi
Parsnour Institute of Iran, Tehran, Iran
Poster presenter: Zahrat Jahanhashi
Monday, September 1, 2022, 12:30 PM - 1:30 PM
Objectives: Orthopaedic candidiasis (OPC) is the most frequent opportunistic fungal infection in head and neck cancer patients. This study was done to investigate the antifungal susceptibility of Candida albicans (C. albicans) from orthopaedic candidiasis (OPC) and to determine the relationships between C. albicans and azole resistance in these isolates and azole resistance.
Methods: A total of 524 clinical isolates of C. albicans were collected. Identification of the clinical samples was performed by culturing on CHROMAgar, carbohydrate assimilation and ITF sequencing method. Azole susceptibility was tested using M27-A3 and E-test microdilution methods. The E-test 14 days of 42 isolates of C. albicans were amplified and sequenced. Results: Of the 524 isolates collected, 44.75% (145 isolates) were C. albicans. ERG11 gene was sequenced in 42 isolates. In total, 14 different mutations were found in ERG11 gene from 42 isolates. Among them, ERG4 and TFE4A substitutions were most prevalent and were known to cause flucytosine resistance. Conclusions: A total of 14 mutations in the ERG11 gene were identified in azole-resistant C. albicans isolates, which indicated as possible solution with no resistance to azole drugs and the recurrence of orthopaedic candidiasis. Finding more mutations and information required studies with a higher number of samples.
PM05
Candida: isolate profiling and antifungal susceptibility testing experience from Jodhpur, Western India
Vidit Jain, Taiefahem Nave, Kirli Vohswakam, Aditya Kundu, Anujrai Radhshriven, Vilbhor Sal, Daks Kumar, Ankur Sharma, Nilesh Karve
All India Institute of Medical Sciences, Jodhpur, Jodhpur, India
Poster presenter: Nilesh Karve
Monday, September 1, 2022, 12:30 PM - 1:30 PM
Objectives: The study was undertaken over a 9-month study period at a tertiary care and super specialty hospital situated in Jodhpur, Western Rajasthan, India, with the following objectives:
1. To determine the prevalence of Candida among all blood culture positive patients
2. To profile isolates or speciation of Candida spp.
3. To antifungal susceptibility testing of the Candida isolates
Methods: Autamized blood culture bottles (BD BACTEC 912) that flagged positive were taken up for azole testing. These bottles which showed growth-positive reading have not with or without penicillin were selected as the study isolates for candida. All such broth was subcultured on Sabouraud’s dextrose agar and incubated aerobically at 37°C for 2-5 days. Crying, pour, white-coloured colonies of Candida were further taken up for identification by using tube test, CROMAgar, and VITEK-MS.
Antifungal susceptibility testing was performed for all isolates by VITEK 2 against fluconazole, caspofungin, voriconazole, micafungin, flucytosine, and amphotericin B.
Results: In the study period from April 2021 – January 31, 2022, the microbiology laboratory received a total of 10,941 automated blood culture bottles of which, overall, 1051 flagged positive. Building rooms were seen in 92 bottles. The prevalence of candidaemia was found to be 1.94%. Building rooms made up 8.75% of all positive blood cultures. Convenient and automated identification methods showed the predominated Candida made up the majority (84.87%) of isolates. Candida tropicalis (45.47%) was the most common species overall, followed by C. parapsilosis (13.77%), C. albicans (14.35%), C. guilliermondii (5.43%), C. glabrata (5.43%), and C. krusei (4.34%). Two isolates each of C. krusei, C. glabrata, and Pichia sp were also obtained. The antifungal susceptibility testing results for the commonest species C. tropicalis showed susceptibility of 90% against caspofungin, 95% against fluconazole, 94% for flucytosine, and 67.5% against amphotericin B. C. albicans showed 100% susceptibility to fluconazole, caspofungin, and fluconazole, while C. parapsilosis showed a lower susceptibility percentage against all drugs in the panel. The strains of C. albiens were solely susceptible to caspofungin. Demography of the patients showed a male predominance (M:F ratio was 2:1). The mean age of patients was 44 years.
Conclusion: The prevalence of candidaemia in Jodhpur, Western India was found to be 1.41%, a figure much less than that reported from most other tertiary care centers of the country. The commonest isolate was C. tropicalis (45.47%), as is that reported from most Indian studies. Our isolates were largely (>95%) susceptible to the drug of choice, caspofungin, including the multi-resistant C. albicans strains. The study findings reflect a low prevalence of candidiasis, indicating adequate antifungal and antifungal stewardship practices in Jodhpur.
PS10
Candida auris and non-aureus candida in adult patients in a tertiary care set up, New Delhi, India
Priyanka Jangra, Malini Capoor, Harish Sachdeva, BK Tripathi, DK Gupta
VMCH and Safdarjung Hospital, New Delhi, India
Poster presenter: Priyanka Jangra
Monday, September 1, 2022, 12:30 PM - 1:30 PM
Objectives: The aim of this study was to determine the species distribution, compare Candida auris and non-C. auris candida isolates and antifungal susceptibility pattern of candida cases in adult patients at a tertiary care hospital, New Delhi, India.
Materials and Methods: Candida species identification was performed by phenotypic methods, VITEK (Biomerieux, France), and DNA sequencing (PGM; Chugard). The antifungal susceptibility was performed by broth microdilution method as per CLSI M27-A4 guidelines 2017.
Results: Out of 1274 blood sample, 78 samples (5.9%) yielded the growth of Candida species. There was a predominance of NAC spp. over C. albicans in candidaemia patients. C. auris (12.65%, 970) and non-C. albicans (87.34%, 1075) was isolated in this study. In non-C. albicans candida, C. tropicalis (28.57%, 270) was the predominant Candida species followed by C. parapsilosis (20.71%, 194) and C. glabrata (14.28%, 130). Rare species among NAC spp. included C. antarctica, C. bantiana, C. krusei and C. haemulonii were isolated. The most common prepondering factor for C. auris and non-C. auris candida was urinary catheter (72.83%, 1070) followed by an increased period of hospitalization (42.83%, 308), diabetes mellitus (12.14%, 1570), etc. The significantly associated risk factor associated with C. auris was diabetes mellitus (P < 0.02). The overall resistance was 22.77% to all antifungal drugs. The multidrug resistance (MDR) was noted in 7.1% of isolates.
Conclusion: Early identification of risk factors is helpful in candida speciation, and timely management is crucial for the outcome of candida cases. Non-albicans species were predominant over C. auris indicating the change in the epidemiology and emergence of MDR Candida spp. like C. lusitaniae, C. glabrata, C. nivariae, C. lusitaniae, and Pichia kudriavzevii (C. krusei). This warrants understanding of the antifungal susceptibility pattern (Asf) and dose escalation of antifungal drugs. The identification of MDR and non-albicans Candida spp.; accurate species identification, and their antifungal susceptibility is crucial for overall patient management.
PS11
A case of neofastat infectiosis by spicophytum of Spicophytum globosum
Eunyu Jeong, Jaeungwon Yim, Hyeungmok Keon, Jongsung Cho, Donghun Shin, Jiyang Kim
Yeungnam University Hospital, Daegu, South Korea
Catholic Kwandong University International St. Mary's Hospital, Incheon, South Korea
Poster presenter: Eunyu Jeong
Monday, September 1, 2022, 12:30 PM - 1:30 PM
Objectives: Spicophilosis is the leading subcutaneous mycosis caused by the Spicophilus (S.parasiticus) subcubicus. S.globosus is the causative organism of flesh spicophilosis in Korea. The preferential regimen of catureosomal spicophilosis is itraconazole for 3-6 months, however, there are few studies for neofastat spicophilosis.
Methods: In 2018, we performed a histological examination of a patient who suffered spicophilosis for 3 years and cultural part of the specimen. Despite various regimens for years, improvement and evacuation were rare, so we took another skin biopsy and cultured it in 2021. Isolates from the 2018 and 2021 lesions were identified as S. globosus by ribosomal DNA microsequencing (Sanger sequencing, Biomerieux). The antifungal susceptibility profile in 2018 revealed sensitivity to fluconazol 0.125 μg/ml, and resistance to high MIC values for amphotericin B (8 μg/ml), itraconazol (16 μg/ml), voriconazol (32 μg/ml), and fluconazol (≥ 16 μg/ml). Treatment with voriconazol, itraconazol, or amphotericin B, the skin lesions were partially improved. In 2021, we took the second spicophilosis biopsy and performed the histopathological examination. The histopathological examination results were the same as the above. The antifungal susceptibility profile revealed sensitive to itraconazol (0.5 μg/ml), and high MIC for others. Clinically, skin lesions were not improved with the use of itraconazol 200 mg. Itraconazol 400 mg/ml with local heat reduced induced modest improvement. There was no evidence of severe adverse effect. Conclusion: We experienced recalcitrant spicophilosis which did not respond to voriconazol and itraconazol, and the sensitivity of antifungal susceptibility tests was needed. It was important to perform antifungal susceptibility tests in order to select appropriate antifungal agents for recalcitrant spicophilosis.