MIC: Characterizing these isolates could help refine their clinical susceptibility profiles to the treatment outcome. The aim of the study was to examine the effects to different receptor types for the resistance.

Methods: A total of 247 clinical isolates of C. tropicalis collected over a period of 7 months (September 2021 to March 2022) from PGIMER, Chandigarh were included in the study identification was done by MALDI-TOF MS and anti- fungal susceptibility testing was done by broth microdilution Antifungal susceptibility testing was performed to observe the drug resistant colonies, and the MIC was determined by examining the lowest concentration of the drug. The MIC values were observed to determine the drug. Yeast cells from the range of 102-101 were spot inoculated in six replicates each on a gradient of fluconazole (0.009 to 1.0µg/mL) in YPD agar and incubated at 37°C for 2-3 days to determine the viable colony forming units (CFU).

Results: Out of the 223 susceptible C. tropicalis isolates, 10 (4.4%) were found to exhibit a trailing growth phenomenon. A dose-response relationship showed a multimodal distribution in these isolates with varying degrees of resistance, where resistant strain was ranged that from 171.0-171.0 ppm for fluconazole. Colonies were isolated from a range of the highest fluconazole susceptibility (≤0.4ȝg/mL) exhibited a similar MIC (±2-fold difference) as that of the susceptible isolates. The heterogeneity range that determines a fold difference breakpoint of the isolates varied from 4 to 256.

Conclusion: An organism of population cells under the effect of fluconazole could give rise to phenotype-different subpopulations. With repeated exposures to the drug, these seemingly susceptible isolates can emerge as truly resistant population. Clinically, the implications include relapse, treatment failure, and persistent chronic infection, owing to which this trend needs attention. Current CLSI guidelines do not provide any criteria to separately classify these isolates from the susceptible and resistant variants. Hence a definitive cut-off is warranted to identify the II and tolerable subsets. The AUC-PAF method could be refined further to discriminating heteroresistance from true resistance.

P010

Selected trans-Himalayan medicinal plants and their extracts express potent antifungal and antibiofilm activity against Candida auris and Candida glabrata

Mohammad Riyaz, Khem Raj
Parvati University, Chandigarh, India

Poster session 1, September 21, 2021, 12:30 PM - 1:30 PM

Objective: Candida auris has emerged as a major multidrug-resistant nosocomial pathogen worldwide. The organism exhibits a persistent, colonising phenotype, usually associated with biofilms formation on hospital surfaces, medical equipment, and underlying medical devices. Biofilm formation by C. auris can further aggravate the infection outcome and prove to be refractory to antifungal, anti-infective, and anti-fungal drugs. The present study aimed to evaluate the preventive and therapeutic efficacy of selected peptide derivative(s) from staphylococcal against C. auris biofilms in vitro and in vivo, using a model of murine corneal infection

Methods: These potentially antimicrobial, staphylococcal alpha-helical peptidic (19-23 amino acids) were evaluated for antimicrobial and antibiofilm activity against clinical isolates of C. auris. The antibiofilm activity was performed on both biofilm preformed and biofilm induced strain according to Clinical and Laboratory Standards Institute. Biofilm assays were performed in 96 well, flat-bottomed microplates in RPMI-1640, and the effect of the test agent on biofilm formation (MIC, minimum biofilm inhibitory concentration; MBIC; minimum biofilm eradication concentration; MBE) and effect on biofilm structure was measured. Biofilm induction process was 7 days, followed for 7 days by red blood cells that adhered to the biofilm. The cytometry of these should-be shedded on HeLa, HEK-293, and Raw 264.7 macrophage by FITC reduction test. The effect of selected test peptides on biofilm formation, in vitro and in vivo, and biofilm models of subcutaneous catheter-associated infection.

Results: The present study demonstrated that a 19 amino acid, alpha helical staphylococcal peptide derivatives exhibit promising antibiofilm activity against C. auris, particularly in preventing biofilm formation, in vitro and in vivo, and in a model of murine corneal infection.

Conclusion: The present study indicated that a 19 amino acid, alpha helical staphylococcal peptide derivatives exhibit promising antibiofilm activity against C. auris. Therefore, we are looking for further studies to develop this as a potential therapeutic agent for the treatment of biofilm infections.