Asia Pacific Journal of Research
A peer reviewed international Journal
Print -ISSN -2320 - 5504
Online-E-ISSN - 2347 - 4793

PREVALENCE OF BIOFILM PRODUCTION AMONGST CANDIDA SPECIES ISOLATED FROM CLINICAL SAMPLES IN A TERTIARY CARE HOSPITAL FROM NORTHEAST INDIA

Arunjyoti Sarmah[1], Dweep Jyoti Baishya[2], Bornali Sarmah Dutta[3], Ajanta Sharma[4], Naba Kumar Hazarika[5]

[1]Research Scientist I (Medical), VRDL, Deptt. Of Microbiology, Gauhati Medical College, Guwahati,
[2]Demonstrator, Department of Microbiology, Gauhati Medical College, Guwahati,
[3] Demonstrator, Department of Microbiology, Gauhati Medical College, Guwahati,
[4] Professor, Department of Microbiology, Assam Medical College, Dibrugarh,
[5] Professor, Department of Microbiology, Gauhati Medical College, Guwahati,

ABSTRACT

Context*:* *Candida species are component of normal flora of human beings. A variety of factors are known to predispose both superficial and deep seated candidiasis which act either by altering the balance of normal microbial flora of the body or by lowering the host resistance. Candida attributes its pathogenicity to its virulence factors**;** one of which is the biofilm production. The ability to form biofilms is associated with the pathogenecity and should be considered as an important virulence determinant during candidiasis.*

Aims:

1) To identify the spectrum of Candida species in clinical infections
2) To ascertain the prevalence of biofilm producing isolatesas
3) To identify their sensitivity pattern to available antifungal agents

Settings and Design:
The study is a Hospital Based prospective study carried out in the department of Microbiology of the Institute.

ISSN: 2320-5504, E-ISSN-2347-4793

Methods and Material:
A total of 128 (One hundred and twenty eight) isolates of Candida obtained during the period from June 2013- May 2014 from different clinical specimens were recruited for the study. Identification was done by Wet mount, Gram staining, Germ tube formation, colour detection on Hichrome agar, chlamydospore formation on Cornmeal agar , biochemical tests and confirmation on Vitek 2 system. Biofilm production was observed on Sabouraud Dextrose Broth with 8% glucose by Test tube method.

Results:
Out of the 128 isolates, 28 (21.87%) were C.albicans while the rest 100 (78.13%) were Non-albicans Candida; the highest being C. tropicalis [40 (31.25%)] and C. glabrata [34 (26.56%)]. It was observed that C. albicans was less resistant to all the drugs as compared to non-albicans Candida species. Of the 28 isolates of C. albicans, only 12 (42.86%) were found to produce biofilms while out of the 100 isolates of Non-albicans Candida, 48 (48%) were able to form biofilms.

Conclusions:
Reduced susceptibility as well as frank resistance to drugs like azoles, as documented in our study, is an issue of crucial importance in treatment of immunocompromised patients with serious infections. Hence, antifungal susceptibility testing and detection of biofilm production is a promising tool for predicting the efficacy of a given agent in different clinical isolates.

Key-words: Azoles, Biofilm, Candida, Immunocompromised, Virulence