VOLUME-9, ISSUE-1, JANUARY-2020 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Microbiology

CANDIDURIA IN DIABETIC PATIENTS IN TERTIARY CARE HOSPITAL OF NORTH BIHAR

Dr. Amit Prakash* Tutor, Department of Microbiology, Sri Krishna medical college, Muzaffarpur, Bihar. *Corresponding Author

Dr. Prakash Kumar Mishra Assistant Professor, Department of Microbiology, Sri Krishna medical college, Muzaffarpur, Bihar.

Dr. Ranjeet Kumar H.O.D & Associate Professor, Sri Krishna medical college, Muzaffarpur, Bihar.

ABSTRACT

Introduction and purpose: Candiduria is common in patients having UTI, who have predisposing factors like catheterization, diabetes , chronic kidney disease and old age. Aim of this study was to know occurrence of candiduria in diabetic pateints.

Material & methods: This was an observational study done in diabetic patients have UTI attended this hospital from period January 2018 to December 2019. Urine specimen were collected and processed as per standard Microbiological procedure. Candidas isolated from samples were further speciated as per standard mycological protocol.

Result: Out of 400 samples , Candida were isolated in 45. Commonly isolated species were *C. albicans*, *C. glabrata*, *C. tropicalis and C. parapsilosis*.

Conclusion: UTI is common in diabetic patients. In these cases, candiduria must kept as an important etiological agent , so that immediate and proper treatment can be feasible. This can reduce the morbidity associated with this disease.

KEYWORDS :

INTRODUCTION

Urinary tract infections (UTIs) in diabetic patients are very common. Infection due to *Candida* species is increasing day by day , particularly in hospitalized patients [1]. There has been increase in the incidence of *Candida* species infection in urinary tract[2,4]. Multiple predisposing factors, includes diabetes mellitus, long term exposure to antibiotics ,urinary catheter, immunosuppressive therapy and old age etc[3]. Diabetes is one of the most common associated risk factor. Management of these *candida spp*. is complicated due to emergence of drug resistance[5,6]. Condition in diabetes is more serious because of low immune system response. Candiduria is mainly asymptomatic, not properly diagnosed and treated thus increases morbidity and mortality[7].

AIMS & OBJECTIVE

Aim of this study was to know occurrence of candiduria in diabetic patients[2].

MATERIAL AND METHOD:

Urine samples were collected from diabetic patients attending Sri Krishna Medical College and Hospital , a tertiary care Government hospital of North Bihar with signs and symptoms of urinary tract infection during the study period from January 2018 to December 2019 and cultured by standard Microbiological protocol[9]. Pure growths of *Candida spp* obtained on blood agar were included in this study. The isolates were identified as per standard mycological techniques[8,9].

RESULT

A total 400 Patients were included in our study from January 2018 to december 2019. Candida species were isolated from 45(11.25%) samples .

Among them *Candida albicans* were isolated in 14 samples(31.1%) where as non albicans candida were isolated from 31 samples (68.9%).

Out of non albicans candida . *Candida glabrata* were isolated from 20 samples(44.44%), *Candida tropicalis* were isolated from 7 samples (15.55%), and *Candida parapsilosis* in 4 (8.89%).

C.glabrata was the most predominant *candida spp*. Isolated from urine samples in UTI cases from diabetic patients in our study.

Table : Different candida species causing UTI in diabetic patient.

Species	Frequency	Percent(%)
Candida albicans	14	31.1%
Candida glabrata	20	44.4%
Candida tropicalis	7	15.5%
Candida parapsilosis	4	8.89%
Total	45	100.0

DISCUSSION:

The prevalence of candiduria caused by *Candida glabrata* were high in the our study. In the last few years various factors like diabetes, old age, immunocompromised status, immunosuppressive therapy, prolonged antibiotic therapy, catherisation have all contributed for increase in risk of candiduria. Diabetes increases chances of UTIs by decreasing immunity allowing organisms to infect urinary tract[12]. The indiscriminate, inadequate use of antibiotic drugs, especially intravenous group have all contributed for increase in risk of Candida *spp infection*[10].

In the present study, isolation of *Candida* spp. from urine samples is 11.25%, which is higher than non diabetic patient. Our Studies shown that there is increase in *Non Albicans Candida* (NAC) species among candiduria[11,13]. The high increase of NAC spp. causing candiduria is concern because many of them are resistant to commonly used antifungal drugs.

CONCLUSION

We found an increasing trend in candiduria in diabetic patients. This change is important clinically because many of them are resistant to common antifungal drugs. We also found that change of candiduria at species level . It is important to keep in mind of initiating proper antifungal treatment empirically for high risk group to decrease morbidity significantly.

REFERENCES

1. Lundstrom T, Sobel J. Nosocomial candiduria: A review. Clin Infect Dis.

2001;32:1602–07
2. John E. Edwards, Jr. Candidiasis. 19th edition. United States of America: McGraw-Hill education;
3. Jagdish Chander. Candidiasis. 3rd edition. India: Mehta publisher;
4. Manisha J, Vinita D, Bibhabati M, Archana T, Poonam SL, Aradhana B. Candiduria in catheterized intensive care unit patients: Emerging microbiological trends. Ind. J.Path. Micro. 2011;54(3):552–55.
5. Kaufman, D., Boyle, R,. Hazen, K. 2001. Fluconazole prophylaxis against fungal colonization and infection in preterm infants. N Engl. J. Med., 345: 1660–1666.
6. Pfaller MA, Diekema DJ, Messer SA, Boyken L, Hollis RJ. Activities of fluconazole and voriconazole against 1,586 recent clinical isolate of Candida species determined by broth microdilution, disc diffusion and E test method: report from the ARTEMIS global antifungal susceptibility program 2001. J Clin Microbiol. 2003;41:1440–46
7. Antinori S et al,candidemia and invasive candidiasis in adult:A narrative review.Eur J internal Med.2016 oct;34:21-28.doi:10.1016.
8. Ang BSP, Talenti A, King B, Steekelberg JM, Wilson WR. Candidaemia from a urinary tract source: Microbiological aspects and clinical significance. Clin Infect Dis. 1993;17(4):626–66.
9. D.Testoni,M.Hayashi,M.Cohen-Wolkowiezetal.,"Late-onset bloodstream infections in hospitalized term infantOdds FC, Bernaets R. CHROM agar Candida a new differential medium for presumptive identification of clinically important candida species. J Clin Microbial. 1994;12:1923–129.
10. Odds FC, Bernaets R. CHROOchipinti DJ, Gubbins PO, Schreckenberger P, Danziger LH. Frequency pathogenicity and microbiologic outcome of non Candida albicans candiduria. Europ J Clin Microbiol Infect Dis. 1994;13:459–67.
11. M agar Candida a new differential medium for presumptive identification of clinically important candida species. J Clin Microbial. 1994;12:1923–129.
12. Hartstein AI, Garber SB, Ward TT, Jones SR, Morthland VH. Nosocomial urinary tract infection: a prospective evaluation of 108 catheterized patients. Infect. Control. 1981;2:380–86.
13. Ragini AK, Sandhya B, Gayatri D, Indumati Incidence of Non Candida albicans in patients with Urinary Tract Infection with special Reference to speciation and Antifungal Susceptibility. JEMDS. 2012;1(4):572–76.