International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2019; 3(1): 82-85
Received: 13-11-2018
Accepted: 17-12-2018

Chandrabhanu Dalal
Department of Obstetrics and Gynaecology, IMS and SUM Hospital, Siksha "O" Anusandhan Deemed to be University, K8, Kalinga nagar, Bhubaneswar, Odisha, India

Swayamprabha Sahoo
Medical Research Laboratory, IMS and SUM Hospital, Siksha "O" Anusandhan Deemed to be University, K8, Kalinga nagar, Bhubaneswar, Odisha, India

Pradip Kumar Panigrahi
Associate Professor, Department of Obstetrics and Gynaecology, IMS and SUM Hospital, Bhubaneswar, Odisha, India

Correspondence
Pradip Kumar Panigrahi
Associate Professor, Department of Obstetrics and Gynaecology, IMS and SUM Hospital, Bhubaneswar, Odisha, India

Antifungals susceptibility pattern of Candida spp. isolated from female genital tract our experience at a tertiary care teaching hospital

Chandrabhanu Dalal, Swayamprabha Sahoo and Pradip Kumar Panigrahi

DOI: https://doi.org/10.33545/gynae.2019.v3.i1b.15

Abstract
Introduction: Vaginal candidiasis is considered as an essential general medical issue worldwide and its rate has expanded these days. As of late, unseemly and unbalanced utilization of antifungal medications, auto medication and in addition rebelliousness have caused tranquilize obstruction.
Methods: This examination went for deciding the *in vitro* antifungal weakness examples of Candida species detached from female genital tract at IMS and SUM Hospital in Bhubaneswar, Odisha, India. Two hundred and fourthy five ladies (age run: 15 years to 49 years) going to the clinic were selected among January and December 2018 in this cross sectional investigation. Vaginal smears were gathered utilizing sterile swabs from every member and refined on sabouraud dextrose agar enhanced with chloramphenico l 0.5%; distinguishing proof of Candida spp. was performed following standard strategies. The plate dissemination technique was utilized for antifungal vulnerability testing.
Results: Out of the 245 vaginal smears gathered, 94 (38.4%) strains of yeast were segregates among which 43 (45.7%) were Candida albicans and 51 (54.3%) were non albicans. The most elevated helplessness of the segregates was seen for nystatin 62 (83.78%), ketoconazole 61 (82.43%) and fluconazole 60 (81.08%).
Conclusion: In spite of the detectable opposition of Candida spp. secludes to miconazole and itraconazole, the outcomes show that nystatin, ketoconazole and fluconazole are the medications of decision for the treatment of vaginal candidiasis in this area.

Keywords: Incidence, *Candida*, vulvovaginal candidiasis, antifungal resistance

Introduction
Vulvovaginitis is a bulky condition shown by irritation of vulva, vagina, or both. Vulvovaginal Candidiasis (VVC), as an imperative subtype, is portrayed by extreme tingling of vulva, anomalous vaginal release, erythema, edema of vulva, and satellite injuries [1]. Numerous examinations have appeared 75% of the female populace will have somewhere around one scene of VVC and 40 - half will have intermittent episodes, amid their lifetime [2, 4]. In spite of a few treatment modalities and use of new successful medications, VVC is an intricate and extensive issue in gynecology and obstetrics [4]. Then again, in the ongoing years different considers in various nations have outlined that the included types of this sickness is additionally evolving [1, 5-7]. In the investigation of Aalei *et al*. [8], *Candida albicans* and non-albicans types of Candida were in charge of 75% and 25% of VVC cases, individually. As per the investigation of Jamilian *et al*. [6], C. albicans was confined in 42.03% of VVC patients, while in the rest of the cases, the sickness was caused by other Candida species. This example of progress was likewise noted in different nations [2, 5, 9]. Ahmad *et al*. [9] detailed a pervasiveness of 53.1% of non-albicans species among patients with VVC, where C. glabrata (36.7%) was the most well-known secluded species. The non-albicans species were appeared to be vital causative operators for recurrence and chronicity of the malady and a significant number of them were impervious to basic antifungal medications [9]. There are expanding gives an account of fluconazole (as a first line treatment for VVC) opposition in some Candida species [5, 6, 10, 11]. This ailment, not just influences physical and mental wellbeing of patients, yet in addition forces a critical financial consumption and troubles for conjugal relationships, and may even prompt fruitlessness [12].
Candidal vaginitis speaks to a standout amongst the most widely recognized gynecological disorders [13]. Basic hazard factors for Candida disease are ongoing anti-toxin use, pregnancy, diabetes mellitus, oral-contraceptives and deficient therapy [14]. Seclusion of Candida (species) spp. from tests of vaginal exudates is an exceptionally visit thing. *Candida albicans* represents the larger part of cases with Candida infection [15, 16].

Relatively 75% ladies will have a candidal vulvovaginitis amid their life expectancy, and almost 50% of them will experience the ill effects of a second event [17]. It is broadly seen that the occurrence of Candida disease is rising. This spurred the examination to look for potential hazard factors and to conceivably counteract Candida disease. Recognizable proof of hazard factors is a vital route in the aversion of maladies. The target of this investigation was to decide the hazard factors for Candida contamination of genital tract in the tropics and give a premise to ailment disease.

In this investigation we evaluated the rate of various species of Candida in patients with VVC to increase new information on included species and the predominance of the ailment in Sari, Iran.

Materials and Methods

This investigation was a case control think about. Data on the cases was gathered from the Hainan part of General Hospital of People's Liberation Army, Hainan General Hospital and Sanya Maternity and Child Health Care Hospital from January in 2018 to October 2018 utilizing a nitty gritty poll overview. Cases were explicitly dynamic patients. Vaginal examination was performed in the cases. Vaginal discharge examination, tiny examination and thin prepare cytology test (TCT) were utilized to analyze Candida disease of genital tract. Controls were patients without Candida disease who were haphazardly chosen from patients showing to the healing facilities. This examination was affirmed by the Ethics advisory group of our institutional morals board of trustees of our clinic, and educated assent was gained from the patients. Information was gathered by doctors. Information included patient benchmark statistic qualities, hidden sickness, Potential hazard factors for Candida contamination of genital tract. Hazard factor data for cases and controls included: age, marriage, family unit enlist, length of home in Hainan, training, multiplication of kids, premature birth, tight jeans wearing, utilization of sterile towel, vaginal lavage, utilization of pantyliners, times of sex, cleaning the vulva before sex, sexual accomplices, kind of enrolled perpetual home, sort of momentum address, sort of ebb and flow house, occupation, malady, methods for cleaning pants, methods for drying pants, times of swimming, menstrual cycle, sexual amid menstrual period, recurrence of day by day shower, methods for shower, prophylactic technique, recurrence of shower amid menstrual period, cleaning the vulva after sex, texture of pants, pants substitution, working condition. Swab tests were gathered from the patients and refined in explicit medium at restorative research lab. In the wake of developing the parasites, they are related to morphology and biochemical tests i.e customary techniques. The antifungal medication affectability designs were completed by circle dispersion strategies.

Results

Two hundred and forty five ladies, mean age 28.5 years (extend 15-49) were enlisted in this examination. Out of the 245 vaginal smears gathered, 94 (38.4%) strains of yeast were detaches among which 43 (45.7%) were Candida albicans and 51 (54.3%) were non albicans (Figure 1). The general Candida species recorded the most elevated defenselessness to nystatin 62 (83.7%), trailed by ketoconazole 61 (82.4%), fluconazole 60 (81.1%), miconazole 44 (59.4%) and itraconazole 12 (16.2%). The most astounding obstruction was seen for itraconazole 23 (31.1%) as appeared Table 1.

Fig 1: Four different species of Candida isolated in genital tract of female.

Table1: Antifungals susceptibility pattern of the Candida species isolated

Antifungal Tested		Candida species									
		C albicans (43)		*C glabrata* (19)		*C krusei* (05)		*C tropicalis* (07)		Total	
		no	%	no	%	no	%	no	%	no	%
FLU	S	37	86.0%	16	84.2%	2	40.0%	5	71.4%	60	81.1%
	SDD	3	9.1%	1	5.3%	0	0.0%	0	0.0%	04	5.4%
	R	3	6.8%	2	10.5%	3	60.0%	2	28.6%	10	13.5%
MCZ	S	27	61.4%	10	52.6%	3	60.0%	4	57.1%	44	59.4%
	SDD	16	36.4%	9	47.4%	2	40.0%	2	23.6%	29	39.2%
	R	0	0.0%	0	0.0%	0	0.0%	1	14.3%	01	1.3%
ITR	S	8	18.2%	3	15.8%	0	0.0%	0	14.3%	12	16.2%
	SDD	24	55.8%	10	52.6%	3	60.0%	2	28.6%	39	52.7%
	R	11	25.0%	6	31.6%	2	40.0%	4	57.1%	23	31.1%
KET	S	37	84.1%	15	78.9%	3	60.0%	6	85.7%	61	82.4%
	SDD	6	13.9%	3	15.8%	2	40.0%	0	0.0%	11	14.8%
	R	0	0.0%	1	5.3%	0	0.0%	1	14.3%	02	2.7%
NY	S	38	86.4%	16	84.2%	3	60.0%	5	71.4%	62	83.7%
	SDD	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0%
	R	5	11.6%	3	15.8%	2	40.0%	2	28.6%	12	16.2%
FLU=Fluconazole, MCZ=miconazole, ITR=Itraconazole, KET=Ketoconazole,NY=nystratin S=susceptible,I=intermediate, R=resistance											

Discussions

Analysts are keen on antifungal opposition since it is related with raised insignificant inhibitory fixations (MICs) that are related with poorer clinical results, leap forward contaminations amid treatment and increment social insurance costs. In this examination, 43 segregates out of 94 secludes were *Candida albicans* and 51 (54.3%) were non albicans. These outcomes are like past investigations [17] in this manner demonstrating the job of *C. albicans* in vaginal candidiasis where it had been built up that its capacity to shape germ tube presents it survival capacities over other yeast species. Obstruction of Candida species to the polyene and azole antifungals is the most common kind of protection from antifungals; some of candidiasis treatment disappointments are because of the opposition of yeast pathogens to the medications utilized. In the present examination, the consequences of the helplessness of the secludes to antifungals were as per the following: fluconazole: 60 detaches (81.1%) powerless and 10 (13.5%) safe; miconazole: 44 segregates (59.4%) defenseless and 02 (2.7%) safe; itraconazole: 12 (16.2%) vulnerable and 23 (31.1%) safe; ketoconazole 61 (82.4%) vulnerable and 02 (2.7%) safe; nystatin: 62 disengages (83.7%) helpless and 13 (17.5%) safe.

Our outcomes further uncovered that nystatin, fluconazole and ketoconazole were the best antifungal medications and itraconazole had the poorest action. Concerning Candida confines helplessness to nystatin (polyene), our outcomes are as per those of Jasem *et al*. [18]. By and by, Ane-Anyangwe *et al*. [19] detailed higher obstruction (80%) of Candida disconnects to nystatin which might be because of the unreasonable utilization of this medication as topical treatment or suppository because of its accessibility and ease. Concerning Candida separates vulnerability to fluconazole, the consequences of our examination are upheld by those of Pfaller *et al*. [20] who demonstrated a high defenselessness to fluconazole of 90.2% out of 190,000 disconnects from 41 nations; in spite of the fact that proof of opposition has been accounted for by a few specialists [19, 21]. VC is viably treated with azole-based antifungal medications [22] that may clarify the opposition seen by these creators and the finding saw in our examination with itraconazole.

Conclusion

Our outcomes demonstrate a variety in the variety of the powerlessness of the Candida species segregated to the diverse antifungals tried with nystatin, ketoconazole and fluconazole being the medications of decision for the treatment of vaginal candidiasis in this district. As an outcome, research facility tests including species ID and antifungal defenselessness testing ought to be asked for ladies with vaginal candidiasis before medications organization.

References

1. Quan M. Vaginitis: diagnosis and management. Postgrad Med. 2010; 122(6):117-27.
2. Souza PC, Storti-Filho A, Souza RJ, Damke E, Mello IC, Pereira MW *et al*. Prevalence of Candida sp. in the cervical-vaginal cytology stained by Harris-Shorr. Arch Gynecol Obstet. 2009; 279(5):625-9.
3. Zhou X, Westman R, Hickey R, Hansmann MA, Kennedy C, Osborn TW *et al*. Vaginal microbiota of women with frequent vulvovaginal candidiasis. Infect Immun. 2009; 77(9):4130-5.
4. Fidel PJ. History and update on host defense against vaginal candidiasis. Am J Reprod Immunol. 2007; 57(1):2-12.
5. Trama JP, Adelson ME, Raphaelli I, Stemmer SM, Mordechai E. Detection of Candida species in vaginal samples in a clinical laboratory setting. Infect Dis Obstet Gynecol. 2005; 13(2):63-7.
6. Jamilian M, Mashadi E, Sarmadi F, Banijamali M, Farhadi E, Ghanatpishe E. Frequency of vulvovaginal Candidiasis species in nonpregnant 15-50 years old women in spring 2005 in Arak. Arak Univ Med Sci. J. 2005; 10(2):7-14.
7. Etminan S, Zarinkatsh H, Lotfee M. The Prevalence of Candida Vaginitis among Women aged 15-49 Years in Yazd, Iran. Med Lab J. 2008; 2(1):39-45.
8. Aalei BSH, Touhidi A. Prevalence of Candida vaginitis among symptomatic patients in Kerman. J Qazvin Univ Med Sci. 2000; 13:42-8.
9. Ahmad A, Khan AU. Prevalence of Candida species and potential risk factors for vulvovaginal candidiasis in Aligarh, India. Eur. J Obstet Gynecol Reprod Biol. 2009; 144(1):68-71.
10. Richter SS, Galask RP, Messer SA, Hollis RJ, Diekema DJ, Pfaller MA. Antifungal susceptibilities of Candida species causing vulvovaginitis and epidemiology of recurrent cases. J Clin Microbiol. 2005; 43(5):2155-62.
11. Bonyadpour B, Akbarzdeh M, Pakshir K, Mohagheghzadeh A. *In vitro* susceptibility of fluconazole, clotrimazole and toucrium polium smoke product on Candida isolates of vaginal candidiasis. J Armaghan Danesh. 2010; 2:88-96.
12. Verghese S, Padmaja P, Asha M, Elizabeth SJ, Anitha A, Kundavi KM *et al*. Prevalence, species distribution and antifungal sensitivity of vaginal yeasts in infertile women. Indian J Pathol Microbiol. 2001; 44(3):313-4.
13. Sobel JD. Epidemiology and pathogenesis of recurrent vulvovaginal candidiasis [J]. Am J Obstet Gynecol. 1985; 152(7Pt 2):924-935.
14. Grigoriou O, Baka S, Makrakis E, *et al*. Prevalence of clinical vaginal candidiasis in a university hospital and possible risk factors [J]. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2006; 126(1):121-125.
15. Boselli F, Chiossi G, Garutti P, *et al*. Preliminary results of the Italian epidemiological study on vulvova-ginitis [J]. Minerva Ginecol. 2004; 56(2):149-153.
16. Ben-Haroush A, Yogev Y, Kaplan B. The importance of diagnostic work-up in the management of candidal vulvovaginitis. A prospective study [J]. Clin Exp. Obstet Gynecol. 2004; 31(2).
17. Seddigheh Esmaeilzadeh, Saeid Mahdavi Omran Zr. Frequency and etiology of vulvovaginal candidiasis in women referred to a gynecological center in Babol, Iran. Royan Institute Int. J fertile Steril. 2009; 3(2):74-7.
18. Mohamadi J, Reza Havasian M, Panahi J, Pakzad I. Antifungal drug resistance pattern of Candida spp. isolated from vaginitis in Ilam-Iran during 2013-201 Bioinformation. ECollection. 2015; 11(4):203-206.
19. Ane-Anyangwe I, Meriki HD, Silum SP, Nsongomanyi FR, Zofou D. Antifungal susceptibility profiles and risk factors of vaginal candidiasis amongst female university students in southwest region, Cameroon. Afr. J Cln. Exper Microbiol. 2015; 16(1):67-72.
20. Asticcioli S, Sacco L, Daturi R, Matti C, Nucleo E, Zara F *et al*. Trends in frequency and *in vitro* antifungal susceptibility patterns of Candida isolates from women attending the STD outpatients clinic of a tertiary care hospital in northern Italy during the years 2002-2007. New Microbiol. 2009; 32(2):199-204.

21. Njunda AL, Nsagha DS, Assob JCN, Kamga HL, Teyim P. *In vitro* antifungal susceptibility patterns of Candida albicans from HIV and AIDS patients attending the Nylon Hospital in Douala Cameroon. J Public Health Africa. 2012; 7-3(1):e2.
22. Mathema B, Cross E, Dun E, Park S, Bedell J, Slade B *et al*. Prevalence of vaginal colonization by drug-resistant Candida species in college-age women with previous exposure to over the counter azole antifungals. Clin Infect Dis. 2001; 33(5):23-7.