

A prospective study to identify the prevalence of vulvovaginal candidiasis in second trimester

Punit S Topno¹, Manju Merina Bara^{2*}

¹Senior Resident, Department of Obstetrics and Gynecology, Mahatma Gandhi Memorial Medical College and Hospital Jamshedpur, Jharkhand, India

²Associate Professor, Department of Obstetrics and Gynecology, Mahatma Gandhi Memorial Medical College and Hospital Jamshedpur, Jharkhand, India

Received: 26-06-2021 / Revised: 17-07-2021 / Accepted: 27-08-2021

Abstract

Introduction: Prevention of preterm birth remains one of the greatest challenges in present day Obstetrics. Several factors indicate an association between vaginal candidiasis and preterm births. Candida can be isolated from the amniotic fluid of the pregnant women with preterm deliveries. **Materials and Methods:** The study was a hospital based prospective study conducted in Department of Obstetrics and Gynecology, Mahatma Gandhi Memorial Medical College and Hospital Jamshedpur, Jharkhand over a period of 6 months (March 2020-August 2020). The study population was selected from the patients who were attending the antenatal outpatient department after getting the detailed informed consent. A detailed clinical history was taken from the patients; age, parity, presence or absence of symptoms (vaginal discharge, itching or burning) and risk factors (diabetes, use of antibiotics in the past, previous history of candidiasis and history of immunosuppression) associated with vaginal candidiasis were recorded. **Results:** Majority of patients were in age group between 26-30 years. Least belonged to group >35 years. 21 patients were of group 20-25 years. 31-35 years group had 6 patients. Gravida 2 was the most common parity on our study. Next common group was primi. Lowest was G3 and G4. **Conclusion:** Our study concluded that candidiasis is more prevalent in pregnant women but there was no statistical significance in occurrence of vaginal candidiasis among various age groups, parity or trimester. Hence it is better to screen all the patients in I early II trimester in order to find out and treat positive cases early to prevent preterm births attributed to vaginal candidiasis.

Key Words: preterm birth, candidiasis, parity, trimester.

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Prevention of preterm birth remains one of the greatest challenges in present day Obstetrics. Several factors indicate an association between vaginal candidiasis and preterm births. Candida can be isolated from the amniotic fluid of the pregnant women with preterm deliveries[1].

Candida species colonises the vagina in 20% of all women, which rises to 30% in pregnancy. vaginal candidiasis is due to Candida albicans in 85-95% of cases. In less than 10% of cases, non-albicans, like Candida glabrata, Candida tropicalis, etc. cause vulvovaginitis, often with fewer clinical features[2].

Recently, studies showed that Candidiasis in pregnancy may be associated with an increased risk of pregnancy complications like premature rupture of membranes and poor pregnancy outcomes. There is an emerging evidence that eradication of candida during pregnancy may decrease the risk of preterm births and late miscarriages[3]. If preterm births are reduced significantly, it will be reflected in reduction of the need of the neonatal facilities, hospitalization and prolonged care for preterm babies. In addition it also reduces the financial burden for the patients and health sectors [4,5].

The objective of our study is to determine the prevalence of vulvovaginal candidiasis among pregnant women, attending the antenatal clinic in our teaching hospital. It helps us to understand the magnitude of the problem in our region and to implement the necessary treatment modalities to reduce the preterm births.

Materials and methods

The study was a hospital based prospective study conducted in Department of Obstetrics and Gynecology, Mahatma Gandhi Memorial Medical College and Hospital Jamshedpur, Jharkhand over a period of 6 months (March 2020-August 2020). The study population was selected from the patients who were attending the antenatal outpatient department after getting the detailed informed consent.

Inclusion Criteria

Patients in second trimester, patients consenting to the study, patients with or without symptoms of candidiasis were included in the study.

Exclusion Criteria

Patients not consenting to the study and patients in first or third trimester were excluded from the study.

A detailed clinical history was taken from the patients; age, parity, presence or absence of symptoms (vaginal discharge, itching or burning) and risk factors (diabetes, use of antibiotics in the past, previous history of candidiasis and history of immunosuppression) associated with vaginal candidiasis were recorded. Under sterile precautions high vaginal swabs were taken, placed immediately in the case, labelled and sent to department of microbiology for growth. In Candida positive cultures, *Candida albicans* or nonalbicans were differentiated and recorded. Growth results were recorded with patient details. The results were statistically analysed and tabulated.

*Correspondence

Dr. Manju Merina Bara

Associate Professor, Department of Obstetrics and Gynecology, Mahatma Gandhi Memorial Medical College and Hospital Jamshedpur, Jharkhand, India

E-mail: drmanjubara@gmail.com

Results

Majority of patients were in age group between 26-30 years. Least belonged to group >35 years. 21 patients were of group 20-25 years. 31-35 years group had 6 patients.

Table 1: Age distribution

S.No	Age in years	No of patients
1	20-25 years	21
2	26-30 years	22
3	31-35 years	6
4	>35 years	1

Gravida 2 was the most common parity on our study. Next common group was primi. Lowest was G3 and G4.

Table 2: Parity

S.No	Parity	No of patients
1	Primi	12
2	G2	27
3	G3	8
4	G4 and Above	3

Most of our study patients belonged to middle class. Lower class were 7. Very few patients were from the upper class.

Table 3: Socio economic status

S.No	Socio economic status	No of patients
1	Upper	9
2	Middle	34
3	Lower	7

Most of our patients in the study were in the 18+1-22 weeks (40%), next common group was 22+1-28 weeks (36%). 24% was contributed by 14+1-18 weeks.

Table 4: Period of gestation

S.No	Period of gestation In weeks	No of patients
1	14+1-18	12
2	18+1-22	20
3	22+1-28	18

Table 5: Number of patients with symptoms

S.No	Variables	No of patients
1	Symptoms present	12
2	Symptoms absent	38

Table 6: Common Symptoms

S.No	Common Symptoms	No of patients
1	Itching	8
2	Curdy white discharge	7
3	Burning sensation	5
4	Foul smell	3

Table 7: Culture results

S.No	Culture results	No of patients
1	Positive	27
2	Negative	23

In our study, the highest number of positive cases were found to be in 26-30 years of age group (51%) followed by 20-25 years (24%). 31-35 years and >35 years were almost the same (11%).

Table 8: Distribution of vaginal candidiasis among different age groups

S.No	Age in years	No of patients
1	20-25	7
2	26-30	14
3	31-35	3
4	>35	3

Table 9: Distribution of vaginal candidiasis in relation to parity

S.No	Parity	No of patients
1	Primi	10
2	G2	10
3	G3	6
4	G4 and above	1

Table 10: Distribution of vaginal candidiasis in second trimester

S.No	Distribution of cases (Weeks)	No of patients
1	14+1-18	4
2	18+1-22	5
3	22+1-28	18

Discussion

Vulvovaginal candidiasis is an important cause of morbidity in pregnancy which can result in miscarriages, Candida chorioamnionitis, subsequent preterm delivery and emotional stress [7,8]. In our study, the highest number of positive cases were found to be in 26-30 years of age group (51%) followed by 20-25 years (24%). 31-35 years and >35 years were almost the same (11%).

In relation to parity, primi and G2 were almost the same in distribution (38.8%). G3 had (10%) of distribution. In relation to 2nd trimester, in our study, the highest number of positive cases were found to be in 26-30 years of age group (51%) followed by 20-25 years (24%). 31-35 years and >35 years were almost the same (11%). 22+1-28 weeks had the most distribution of cases (68%). 23% of Candida positive women were symptomatic and the remaining 77% were asymptomatic. As preterm labour is a result of chronic inflammatory process, it is better to screen all patients in early/mid II trimester to pick up the cases early to initiate the treatment[9]. The safety of any proposed intervention in pregnancy is of great importance. Clotrimazole is classified as category A drug, which has been used by large number of pregnant women without any proven increase in the frequency of malformation or harmful effects on the fetus[10].

Conclusion

Early detection and diagnosis may improve the clinical condition of the pregnant women and reduces the number of preterm term births significantly. If preterm births are reduced significantly, it will be reflected in reduction of the need of the neonatal facilities, hospitalization and prolonged care for preterm babies. In addition, it also reduces financial burden for patients and health sectors.

References

1. Chaim W, Mazor M, Wiznitzer A. The prevalence and clinical significance of intraamniotic infection with *Candida* species in women with preterm labor. *Arch Gynecol Obstet.* 1992 ;251 (1): 9-15.
2. Figueroa R, Garry D, Elimian A, Patel K, Sehgal PB, Tejani N. Evaluation of amniotic fluid cytokines in preterm labor and intact membranes. *J Matern Fetal Neonatal Med.* 2005; 18(4): 241-7.
3. Mending W, Brasch J. German Society for Gynecology and Obstetrics; Working Group for Infections and Infect immunology in Gynecology and Obstetrics; German Society of Dermatology, the Board of German Dermatologists; German Speaking Mycological Society. 2010:1-11
4. Guideline vulvovaginal candidiasis of the German Society for Gynecology and Obstetrics, the Working Group for Infections and Infect immunology in Gynecology and Obstetrics, the German Society of Dermatology, the Board of German Dermatologists and the German Speaking Mycological Society. *Mycoses.* 2012;55 (Suppl 3):1-13.
5. Sobel JD. Vulvovaginal candidosis. *Lancet.* 2007;369(9577): 1961-71.
6. Fardiazar Z, Goldust M. Vulvovaginitis candidiasis recurrence during pregnancy. *Pak J Biol Sci.* 2012;15(8):399-402.
7. Ilkit M, Guzel AB. The epidemiology, pathogenesis, and diagnosis of vulvovaginal candidosis: a mycological perspective. *Crit Rev Microbiol.* 2011;37(3):250-61.
8. Mazor M, Chaim W, Shinwell ES, Glezerman M. Asymptomatic amniotic fluid invasion with *Candida albicans* in preterm premature rupture of membranes. Implications for obstetric and neonatal management. *Acta Obstet Gynecol Scand.* 1993;72(1):52-4.
9. Morrison EA, Cushman LF. Prevention of preterm delivery. *N Engl J Med.* 2007;357(19):1979.
10. Singh SI. Treatment of vulvovaginal candidiasis. *Clin. Rev. CPJ/RPC.* 2014;136(9):26-30.

Conflict of Interest: Nil

Source of support: Nil