

**PREVALENCE OF ASYMPTOMATIC BACTERIURIA AMONG PREGNANT WOMEN**

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ABSTRACT

Introduction: Urinary tract infection is a common bacterial infection in women because of the short urethra which can easily be contaminated with microorganisms from the gastrointestinal tract. Pregnant women are at an increased risk of urinary tract infection because of anatomic and physiological changes of pregnancy that gives a conducive environment for bacterial proliferation. Asymptomatic bacteriuria (ASB) is defined as a significant count of bacteria (>105 colony forming units (CFU)/mL) in the urine plus absence of clinical signs or symptoms. Early screening and treating promptly of ASB during pregnancy can prevent further complication of bacteriuria in pregnant women. **Aim And Objectives:** To study the prevalence of asymptomatic bacteriuria in all pregnant women attending OBGY OPD or getting admitted in IPD at Pacific Medical College & Hospital, Udaipur. **Primary:** To find the prevalence of asymptomatic bacteriuria in all pregnant women attending OBGY OPD or getting admitted in IPD. **Material And Methods:** A Prospective Cross Sectional Observational Analytical study conducted on 100 pregnant women attending the OPD clinics or IPD from February 2021-January 2022 at department of Obstetrics and Gynecology of Pacific medical college hospital. **Results:** The prevalence of asymptomatic bacteriuria was significantly ($p=0.001$) associated with UTI and anemia as past history. The prevalence of asymptomatic bacteriuria was found to be 15%.

Conclusion:

1. The prevalence of asymptomatic bacteriuria was found to be 15%.
2. IUCD past history was in 35% and anemia was in 26% patients. However, Catheterization and UTI was in 23% and 21% patients respectively.
3. The prevalence of asymptomatic bacteriuria was highest in age >30 years (21.4%) and was least in 26-30 (8%) years. However, there was no significant ($p>0.05$) association prevalence of asymptomatic bacteriuria with age.
4. The prevalence of asymptomatic bacteriuria was significantly ($p=0.001$) associated with UTI and anemia as past history.

KEYWORDS : Asymptomatic bacteriuria, Pregnant women, Urinary tract infection

INTRODUCTION

Urinary tract infection is a common bacterial infection in women because of the short urethra which can easily be contaminated with microorganisms from the gastrointestinal tract. Pregnant women are at an increased risk of urinary tract infection because of anatomic and physiological changes of pregnancy that give a conducive environment for bacterial proliferation. Under the influence of progesterone, there is smooth muscle relaxation, dilatation of the ureters and renal pelvis especially the right due to compression from the enlarging dextro-rotated uterus. In addition to the relative stasis of the urine due to reduced peristalsis of the ureters, there is glycosuria of pregnancy and general decline in the immunity.

Urinary tract infections (UTIs) and bacteriuria are common during pregnancy due to mechanical and hormonal changes. Asymptomatic bacteriuria (ASB) is defined as a significant count of bacteria (>105 colony forming units (CFU)/mL) in the urine plus absence of clinical signs or symptoms (Tadesse et al, 2018)¹.

Early screening and treating promptly of ASB during pregnancy can prevent further complication of bacteriuria in pregnant women. According to the American College of Obstetricians and Gynecologists, screening of ASB is recommended in all pregnant women. However, in many hospitals in developing countries including Ethiopia, routine

urine culture test is not carried out for antenatal women probably due to cost implication and time factor for culture result (usually 48 hours period) (Mwei et al, 2016)².

Asymptomatic bacteriuria is one of the major risk factors for the development of UTIs during pregnancy which accounts for about 70% of the cases. Globally, asymptomatic bacteriuria affects 2-10% of all pregnant women (Tadesse et al, 2018)¹. But it was reported at different level in different parts of the world.

AIM AND OBJECTIVES

To study the prevalence of asymptomatic bacteriuria in all pregnant women attending OBGY OPD or getting admitted in IPD at Pacific Medical College & Hospital, Udaipur.

OBJECTIVES

- 1- **Primary:** To find the prevalence of asymptomatic bacteriuria in all pregnant women attending OBGY OPD or getting admitted in IPD.
- 2- **Secondary:** To find the association of asymptomatic bacteriuria in pregnant women attending OBGY OPD or getting admitted in PMCH with past history of UTI, IUCD usage, catheterization and anemia.

MATERIAL AND METHODS

A Prospective Cross Sectional Observational Analytical study conducted on 100 pregnant women attending the OPD clinics

or IPD from February 2021-January 2022 at department of Obstetrics and Gynecology of Pacific medical college hospital.

Inclusion Criteria

- Antenatal patients for regular antenatal check-ups in PMCH.
- Patients who were willing for participating in this study.
- Patients who were getting admitted in PMCH UDAIPUR.

Exclusion Criteria:

- Patients with history of UTI in the past six months or during this pregnancy.
- Patients who had taken antibiotics in last 2 weeks.
- Patients who were not willing for participating in this study.
- Antenatal women who had any urinary complaints.
- Patients who were known case of renal calculi or any other renal complications.

Statistical Analysis

The results are presented in frequencies, percentages and mean±SD. The Chi-square test was used to find the associations. The p-value<0.05 was considered significant. All the analysis was carried out on SPSS 16.0 version (Chicago, Inc., USA).

RESULTS

Table-1: Association Of Prevalence Of Asymptomatic Bacteriuria With Past History

Past history	No. of patients	With bacteriuria		Without bacteriuria		p-value ¹
		No.	%	No.	%	
UTI	21	9	42.9	12	57.1	0.001*
Catheterization	23	2	8.7	21	91.3	0.23
Anemia	26	14	53.8	12	46.2	0.001*
IUCD	35	2	5.7	33	94.3	0.06

¹Chi-square test, *Significant

Table-1 shows the association of prevalence of asymptomatic bacteriuria with past history. The prevalence of asymptomatic bacteriuria was significantly (p=0.001) associated with UTI and anemia as past history.

Table-2: Distribution Of Patients According To Prevalence Of Asymptomatic Bacteriuria

Prevalence of asymptomatic bacteriuria	No. (n=100)	%
With bacteriuria	15	15.0
Without bacteriuria	85	85.0

Table-2 shows the distribution of patients according to asymptomatic bacteriuria. The prevalence of asymptomatic bacteriuria was found to be 15%.

Table-3: Distribution Of Patients According To Past History

Past history#	No. (n=100)	%
UTI	21	21.0
Catheterization	23	23.0
Anemia	26	26.0
IUCD	35	35.0

#Multiple response

Table-3 shows the distribution of patients according to past history. IUCD past history was in 35% and anemia was in 26% patients. However, Catheterization and UTI was in 23% and 21% patients respectively.

DISCUSSION

The present study was conducted in the Department of Obstetrics and Gynecology of Pacific Medical College hospital with the objective to study the prevalence of asymptomatic bacteriuria in all pregnant women attending

OBGY OPD or getting admitted in IPD at Pacific Medical College & Hospital, Udaipur. A total 100 patients were included in the study. The prevalence of asymptomatic bacteriuria was found to be 15% in this study. This finding was almost similar to the study by Patel et al (2022)⁶ in which the prevalence rate of asymptomatic bacteriuria was seen in 13.8% in pregnant women. However, Cotton et al (2022)³ found that from a total of 18,938 urine samples, 1522 (8.04%) were positive for bacteriuria. In another study by Chawanpaiboon et al (2021)⁴, the prevalence of ASB was 7.2% (8/110 cases). The prevalence of asymptomatic bacteriuria was slightly higher in the study by Agarwal et al (2021)⁵ than this study in which the prevalence rate of ASB in pregnant females was 17.4%. Nteziyaremye et al (2020)⁶ found low prevalence than this study in which out of the 587 pregnant women, 22 (3.75%) tested positive for asymptomatic bacteriuria. Edae et al (2020)⁷ observed that the overall prevalence of asymptomatic bacteriuria was 19.9%. Tadesse et al (2018)¹ revealed that out of 259 pregnant women included in the study, the prevalence of asymptomatic bacteriuria was at 55 (21.2%).

In the study by Yadav and Prakash (2019)⁵⁵, the prevalence rate of asymptomatic urinary tract infection (AUTI) among pregnant women was found to be 42%. The highest number of UTI cases found during pregnancy was in between age 21-25 years (52.22%), in second gravida (51.59%), during 3rd trimester of pregnancy (49.68%) and in winter with 52.22%. In another study by Prabhavathi et al (2018)³, the prevalence of ASB was 11.33%. Out of 34 cases of ASB positive, 8 cases (23.5%) were delivered with birth weight <2500 grams as compared to 11 cases (4.1%) in unexposed cases (RR 5.68, 95% CI; 2.46-13.15; p<0.05). Preterm low birth was noticed in 5 (14.7%) cases of ASB positive pregnant women with compared to unexposed cases (RR 1.5, 95% CI; 0.61-3.65, p=0.36). Regarding maternal outcomes, premature labour was observed in 8 cases (23.5%) of ASB exposed women whereas 22 (8.3%) in non-exposed cases (RR 2.84, 95% CI; 1.37- 5.88, p=0.004). A significant number of women have developed hypertension (17.6%) and preeclampsia (8.8%) in ASB positive cases as compared to ASB negative cases (4.9% and 2.3% respectively).

This study showed that IUCD past history was in 35% and anemia was in 26% patients. However, Catheterization and UTI was in 23% and 21% patients respectively. Sonkar et al (2021)⁸ showed that the female gestational period, haemoglobin level, and BMI were significantly associated with ASB. Logistic regression also showed that higher haemoglobin level was less likely to ASB (AOR = 0.42, 95% confidence interval: 0.202-0.88, p = 0.021).

In the current study, the prevalence of asymptomatic bacteriuria was significantly (p=0.001) associated with UTI and anemia as past history. Agarwal et al (2021)⁵ showed that there was a significant finding of previous history of UTI (22.9%) and anemia (58.3%) associated with ASB in pregnant females.

CONCLUSIONS

The present study was conducted in the Department of Obstetrics and Gynecology of Pacific Medical College hospital with the objective to study the prevalence of asymptomatic bacteriuria in all pregnant women attending OBGY OPD or getting admitted in IPD at Pacific Medical College & Hospital, Udaipur. A total 100 patients were included in the study. The following are the major findings of this study:

1. The prevalence of asymptomatic bacteriuria was found to be 15%.
2. IUCD past history was in 35% and anemia was in 26% patients. However, Catheterization and UTI was in 23% and 21% patients respectively.
3. The prevalence of asymptomatic bacteriuria was highest

in age >30 years (21.4%) and was least in 26-30 (8%) years. However, there was no significant ($p>0.05$) association prevalence of asymptomatic bacteriuria with age.

4. The prevalence of asymptomatic bacteriuria was significantly ($p=0.001$) associated with UTI and anemia as past history.

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