Section: Obstetrics and Gynaecology

Original Research Article

ROLE OF PERSONAL HYGIENE AND SEXUAL PRACTICES IN ASYMPTOMATIC BACTERIURIA AMONG PREGNANT WOMEN

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Abstract

Background: Asymptomatic bacteriuria (ASB) is characterized by the presence and growth of microorganisms in the urinary tract without causing symptoms.It is defined as the presence of at least 100,000 organisms per millimetre of urine in an asymptomatic patient .Urinary tract infections are the commonest, widely misunderstood and challenging bacterial infections of all age groups and especially in pregnancy[1]. Poor personal hygiene and improper sexual habits play important role in UTIs. The aim is to determine the association of ASB with genital hygiene and sexual practices in pregnant women. The settings is NSCB, MCH Jabalpur. The design is cross-sectional study. **Materials and Methods:** Pregnant women attending antenatal outpatient clinic were selected. Urine sample by clean catch method was collected and battery of tests were performed. Prevalence of ASB and pregnancy outcome studied. **Result:** Total 114 pregnant women were studied, out of which 6 cases were positive for urine culture. Prevalence rate in our study found to be 5.3%. Study depicted that 66.6% women with asymptomatic bacteriuria had voluntary delay in voiding, practices wiping of perineum from back to front, didn't practice urination before sleep and had frequent sexual activity. While 83.3% women didn't practice hand washing after coitus, 66.7% women did not practice urination after coitus, 50% women didn't practice washing genitals after coitus and 66.7% women uses synthetic undergarment. **Conclusion:** Urinary tract infections are common during pregnancy. Incorrect personal & behavioural practices play key role in causations of UTIs in pregnancy. Urine culture as routine screening method can prevent adverse pregnancy outcome. All women attending ANC clinics should be educated about personal & behavioural practices.

INTRODUCTION

Urinary tract infections (UTIs) as characterized by the presence and growth of microorganisms in the urinary tract, are the single commonest bacterial infection of all age groups and especially in pregnancy.[1] It is estimated that every one in three women of childbearing age reports UTI once per year.[2]

Several physiological, anatomical, and personal factors contribute to this problem during pregnancy, such as urethral dilation, increased bladder volume, and decreased bladder tone with urinary stasis. Personal hygiene and sexual practices also increases the risk of infection.[3]

Anatomically UTI is classified as lower urinary tract infection involving bladder and urethra and upper urinary tract infection involving kidney, pelvis and ureter.[4]

UTI in pregnancy is classified as:

Asypmtomatic, where it involves lower urinary tract leading to asymptomatic bacteriuria. Asymptomatic bacteriuria is one of the clinical manifestation of UTI. It refers to the presence of at least 100,000 organisms per milimeter [10^5 CFU/ml] of urine in an asymptomatic pregnant female.[5]

Symptomatic bacteriuria involves upper urinary tract and is characterized by acute pyelonephritis.[1] It is defined as more than 100 organisms/ml of urine with accompanying pyuria (>5WBCs/ml) in a symptomatic patient. The other risk factors in pregnancy are glycosuria, high parity, older age, lower socioeconomic status

Commonest organisms reported to be found in culture media, in the general obstetric population

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include:[6] E. Coli (70%), Klebsiella (23.4%), Staphylococcus saprophyticus (5-15%), Group B Streptococcus strains, especially Streptococcus agalactiae (SGB) (10%), Proteus (2%), Pseudomonas, Citrobacter.

The prevalence of UTI varies widely within and between the countries. Prevalence of asymptomatic UTI in India is 6.2%, which if untreated, can adversely affect the health of pregnant women and infants and in 20 to 35 % of pregnant women may lead to symptomatic UTI.[1]

UTI can lead to serious obstetric complications, including poor maternal and perinatal outcomes such as intrauterine growth restriction, pre-eclampsia, cesarean delivery, and preterm delivery.[7,8] Consequently, prevention, early diagnosis of UTI and proper management of ASB is essential part of Ante Natal Care.

This study was planned to estimate the impact of personal hygiene and sexual practices on ASB in pregnant women.

MATERIALS AND METHODS

This cross-sectional study was conducted among pregnant women attending outpatient clinic of department of Obstetrics and Gynaecology NSCB, Medical College ,Jabalpur from March 2021 to August 2022. Total 114 pregnant women formed the study group.

Inclusion Criteria

All asymptomatic pregnant women's irrespective of the trimesters of pregnancy.

Exclusion Criteria

A) Pregnant women's with symptoms of UTI.
B) Pregnant women with sexually transmitted infections and /or on antibiotic therapy.
C) Non consenting.

After approval from institutional ethical committee informed consent was taken from the study participants. Demographic characteristics, gestational age, parity, history of UTI, abortions, diabetes, hypertension, sickle cell anaemia were noted. Data regarding personal hygiene and sexual practices were noted using a structured questionnaire which included demographic variables, frequency of coitus (ocasnl/frequent), genital hygiene practices including urinated after coitus (yes/no),hand washing after coitus (yes/no) washing of genitals pre coitus and post coitus (yes/no) and other health/hygiene practices, e.g. direction of washing genitals (front to back/back to front), urination before sleep(yes/no), use of synthetic underwear, voluntary delay in voiding urine (yes/no).

A midstream freshly voided urine sample by clean catch method was collected in a labelled sterile container and subjected to microscopic examination and culture sensitivity. All the samples were processed within one hour of collection, incase delay, it was refrigerated and processed within 4-6 hours. Sample collection was random. Urine analyses was done to assess presence of bacteria, RBC, pus cells, epithelial cells and urine cultures were done to detect presence of an uropathogen. Women with bacteriuria was treated with a course of antimicrobial drugs.

For statistical analysis the data was recorded in the predesigned proforma and then entered in the MS excel and eventually analyzed by using statistical software-SPSS Version 21.

RESULTS

Out of 114 pregnant women, 6 were positive for ASB. The prevalence rate found to be 5.3%.

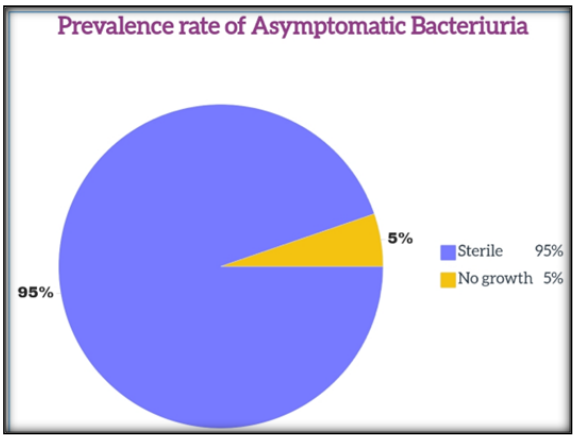

Figure 1: Prevalence of Asymptomatic Bacteriuria in Pregnant Women

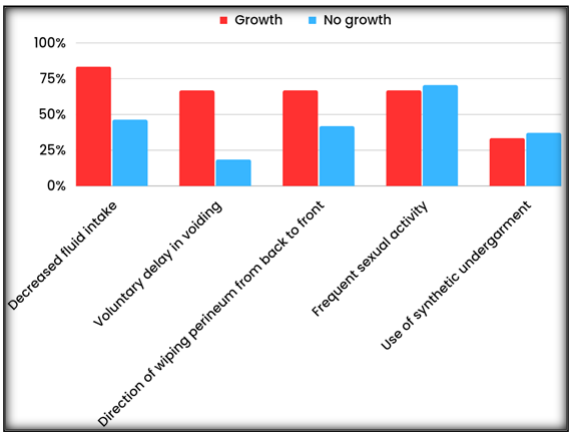

Figure 2: Association of personal hygiene & sexual practices with asymptomatic bacteriuria

Study depicted that among pregnant women with decreased fluid intake, 5 (83.3%) showed positive urine culture. Out of 24 pregnant women who voluntarily delayed voiding, 4(66.6%) had positive urine culture while out of 49 pregnant women who wipe perineum from back to front, 4 (66.7%) showed positive urine culture. 80 pregnant women who gave history of frequent sexual activity, 4 (66.7%) were with positive culture whereas among 87 pregnant women who did not wash hands after coitus, 5 (83.3%) had positive urine culture. 82 pregnant women who did not urinate after coitus, 4 (66.7%) had positive urine culture and out of 86 pregnant

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women who used to wash genitals after coitus, 3 (50.0%) women had positive urine culture. Study showed that 57 (50%) pregnant women did not practice urination before sleep. Among them 4 (66.7%) women had positive urine culture. 72 pregnant women used synthetic undergarment, out of which 4 (66.7%) females had positive urine culture. Among women who didn't use synthetic undergarment, 2 (33.3%) had positive urine culture.

Table 1: Prevalence of Asymptomatic Bacteriuria

Prevalence	Cases	Percentage (%)
No Growth	108	94.7
Growth	6	5.3
Total	114	100

Table 2: Association of personal hygiene & sexual practices with asymptomatic bacteriuria

Variables	Urine culture and sensitivity						Chi square
	No Growth		Growth		Total		
	No.	%	No.	%	No.	%	
Fluid intake							
Decreased	50	46.3	5	83.3	55	48.2	3.12
Adequate	58	53.7	1	16.6	59	51.7	
B) Voluntary delay in voiding							
No	88	81.5	2	33.3	90	78.9	7.93
Yes	20	18.5	4	66.7	24	21.1	
C) Direction of wiping perineum from back to front							
No	63	58.3	2	33.3	65	57	1.450
Yes	45	41.7	4	66.7	49	43	
D) Sexual activity							
Occasional	32	29.6	2	33.3	34	29.8	0.037
Frequent	76	70.4	4	66.7	80	70.2	
E) Hand washing after coitus							
No	82	75.9	5	83.3	87	76.3	0.173
Yes	26	24.1	1	16.7	27	23.7	
F) Urination after coitus							
No	78	72.2	4	66.7	82	71.9	0.087
Yes	30	27.8	2	33.3	32	28.1	
G) Washing genitals after coitus							
No	83	76.9	3	50	86	75.4	2.21
Yes	25	23.1	3	50	28	24.6	
H) Urination before sleep							
No	53	49.1	4	66.7	57	50	0.7
Yes	55	50.9	2	33.3	57	50	
I) Use of synthetic undergarment							
No	40	37	2	33.3	42	36.8	0.034
Yes	68	63	4	66.7	72	63.2	

DISCUSSION

The present study demonstrated an increased frequency of Asymptomatic bacteriuria among pregnant women with incorrect perineal hygiene and sexual behavior. Asymptomatic bacteriuria in pregnancy requires special attention due to the absence of symptoms and harmful consequences in pregnancy.[9]

During the study period, total 114 pregnant women were studied, out of which 6 were positive for urine culture. The prevalence rate thus found to be 5.3% which is statistically significant. The global prevalence of asymptomatic bacteriuria in pregnancy ranges from 1.9-9.1% as per literature. L Gayathree et al,[10] reported a prevalence of 6.8 % and Jayalaxmi et al,[11] and Sujata et al,[12] found a prevalence of 7.4% and 7.3% respectively.

In our study, in total 55 (48.2%) pregnant women gave history of decreased fluid intake (< 6 glasses per day). 83.3 % culture positive women had reduced fluid intake. These findings are supported by Mahmoud et al,[13] and Badran et al.[14] They reported low intake of fluids as statistically significantly association with asymptomatic bacteriuria. Adequate fluid intake increases diuresis which has diluting and flushing effect on contaminating bacteria and virulence factor. Our study found that 4 (66.7%) pregnant women with positive urine culture voluntarily delayed voiding along with 20 other women (who were culture negative), which is statistically significant. Findings are in line with study by Mahmoud et al.[13] Delay in voluntary emptying of bladder causes stasis of urine which favours bacterial growth and thus increases the risk of urinary tract infections.

We found 66.7% women with positive urine culture who didn't urinate before sleep. We also found the same percentage of women using synthetic undergarments. These types of innerwears, however, does not absorb perspiration as much as the cotton innerwear does. They trap heat and moisture helping bacteria thrive and creating perfect breeding ground for infection. Vyas et al,[15] in their study reported

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68.57% of UTI associated with synthetic undergarments, which is similar to our study. In the present study 49 (43%) pregnant women used to wipe perineum from back to front. 4 (66.7%) out of 6 women with positive urine culture practiced the perineal cleaning incorrectly. Our finding is in line with Vyas et al,[15] according to whom, majority of women don't wash Genital region in correct direction and hence suffer from UTI the most. Genital hygiene if practiced properly can reduce infection rates in pregnancy. In our study, 80 (70.2%) pregnant women had history of frequent sexual intercourse and 82 (71.9%) pregnant women did not urinate after coitus. 66.7% women with positive urine culture practiced the same. In our study, 86 (75.4%) pregnant women did not wash genitals after coitus, and 87 (76.3%) pregnant women did not washes hands after coitus. 50 % women with ASB did not wash genitals and 83.3% did not wash hands after coitus. Our study is well supported by other studies as Vyas et al,[15] and Narayan BK,[16] who reported a lower frequency of genital infections among the participants practicing correct personal and genital hygiene as compared to those who practice the genital hygiene incorrectly. All these findings suggest that lack of awareness regarding importance of personal hygiene and safe sexual behaviour leads to increased incidences of urinary infections in pregnancy. Genital and sexual hygiene if practiced properly can reduce infection rates in pregnancy.

CONCLUSION

Urinary tract infections are common during pregnancy. Asymptomatic bacteriuria can progress to pyelonephritis and may result in adverse pregnancy outcome. The results of this study showed that hygiene habits and sexual behavior may play a role in UTI in pregnant women and therefore the Knowledge of the same especially for pregnant women is very important for preventing UTIs during pregnancy. It is Therefore, recommended to educate pregnant women about sexual and hygiene genital habits in prenatal sessions.

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