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## Study of urinary tract infection during pregnancy at tertiary care hospital

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### Abstract

**Introduction:** Urinary tract infections frequently affect pregnant mothers. This problem causes significant morbidity and healthcare expenditure. Three common clinical manifestations of UTIs in pregnancy are: asymptomatic bacteriuria, acute cystitis and acute pyelonephritis. Escherichia coli remain the most frequent organism isolated in UTIs. All pregnant mothers should be screened for UTIs in pregnancy and antibiotics should be commenced without delay. Urine culture and sensitivity is the gold standard in diagnosing UTIs

**Aims and Objectives:** The study attempts to know the prevalence of urinary tract infection in pregnancy.

**Material and Methods:** all pregnant women who come for antenatal clinic are screened for UTI. consecutive booked antenatal women who presented to antenatal clinics were randomly recruited into the study (Upon verbal informed consent,) either had any of the symptoms suggestive of urinary tract infections or without any symptoms were only included. Mid stream clean catch sample sent for urine analysis and culture. Results are tabulated and analysed

**Results:** 1st, 2nd, 3rd, trimester UTI seen in 70, 110, 20 patients. Majority of cases are in primigravida (110)

**Conclusion:** urinary tract infection is more common in primigravida and majority are seen in first trimester. Working women are more prone to UTI than non working women.

**Keywords:** urinary tract, during pregnancy, hospital

### Introduction

Urinary tract infections frequently affect pregnant mothers. This problem causes significant morbidity and healthcare expenditure. Three common clinical manifestations of UTIs in pregnancy are: asymptomatic bacteriuria, acute cystitis and acute pyelonephritis. Escherichia coli remain the most frequent organism isolated in UTIs. All pregnant mothers should be screened for UTIs in pregnancy and antibiotics should be commenced without delay. Urine culture and sensitivity is the gold standard in diagnosing UTIs. Without treatment, asymptomatic bacteriuria in pregnancy is associated with preterm delivery, intrauterine growth retardation, low birth weight, maternal hypertension, pre-eclampsia and anemia. Acute pyelonephritis can lead to maternal sepsis. Recurrent UTIs in pregnancy require prophylactic antibiotic treatment. Urinary tract infections (UTI) remain a leading cause of morbidity and healthcare expenditure in all age groups<sup>1,2</sup> UTI account for about 10% of primary care consultations by pregnant women and it was reported that up to 15% of women will have one episode of UTI at some time during their life.<sup>1</sup> The incidence of UTI reported among pregnant mothers is about 8%.<sup>1,2</sup> Anatomically UTI can be classified into lower urinary tract infection involving the bladder and urethra and upper urinary tract infection involving the kidney and pelvis ureter. The majority of the UTI occur due to ascending infection. 1, 2 UTI is defined as the presence of at least 100,000 organisms per milliliter of urine in an asymptomatic patient, or as more than 100 organisms/mL of urine with accompanying pyuria (> 7 white blood cells [WBCs]/mL) in a symptomatic patient. There is a 4-10% more incidence of urinary tract infection in pregnancy as compared to non- pregnancy woman. 60% pregnant women with.

Asymptomatic bacteriuria in pregnancy went onto develop symptomatic infection and 20-25% developed pyelonephritis<sup>3</sup>. The study attempts to know the prevalence of urinary tract infection in pregnancy.

### Material and Methods

**Materials:** All pregnant women who come for antenatal clinic.

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**Criteria for selection of sample****Inclusion criteria**

- Mothers who are pregnant
- Mothers who can understand either kannada, hindi or English
- Mothers who are willing to participate
- Age group of 18 to 45 years

**Exclusion criteria**

- Mothers who are not willing to participate
- Mothers who are not available at the time of data collection
- Mothers who were on treatment with antibiotics

**Sample size:** 200

**Duration of study:** 12 months (01-01-2017 to 31-12-2017)

**Place of study:** antenatal clinic At B R Ambedkar Medical College, Bangalore

**Type of study:** descriptive observational study

**Methodology:** Consecutive booked antenatal women who presented to antenatal clinics were randomly recruited into the study (Upon verbal informed consent) either had any of the symptoms suggestive of urinary tract infections or without any symptoms were only included. A consecutive 200 pregnant women with or without symptoms of UTI were included in this study. Socio-demographic data such as age, occupation and duration of gestation were collected from the pregnant women using standard questionnaires and kept confidential during the research. Clean-catch midstream urine was collected from each pregnant woman into a wide-mouthed sterile screw-capped container. With a Calibrated micro-loop 0.001 ml. of urine charged into appropriate culture media. After overnight incubation at 37 °C for 24 hours, colony counts yielding bacterial growth of  $\geq 10^5$  / ml was taken as being significant in both symptomatic and asymptomatic pregnant women. The Results Are Tabulated in Microsoft Excel and Analyzed

**Results**

**Table 1:** Patients examined

	Number of patients	Percentage
<b>Total no. of patients enrolled</b>	<b>200</b>	<b>100</b>
Number of Pregnant women with UTI	30	15
Number of Pregnant women with out UTI	170	85

A total of 100 pregnant women were included in the study. In this study out of 100 pregnant cases 15 patients showed significant bacterial growth making an overall prevalence of 15 %.

**Table 2:** Prevalence of Urinary Tract Infection in relation to age:

Age (YE Ars)	Number of patients examined	Number of positive UTI's	Percentage of Positive UTI's
18-20 years	10	0	0
21-25 years	100	20	20
26-30 years	80	4	10
31-35 years	10	1	20

**Table 3:** Prevalence of urinary tract infection in relation to gestational trimester:

Pregnancy Trimester	Number of patients examined	Number of positive	% Positive
1st Trimester	70	6	8.5%
2nd Trimester	110	20	18%
3rd Trimester	20	4	20%
Total	200	30	15%

**Table 4:** Prevalence of urinary tract infection in relation to obstetric score

Obstetric score	Number examined	Number positive	% Positive
1st Gravida	110	12	10.9%
2nd Gravida	70	14	20%
3rd Gravida	20	4	20%

**Table 5:** Prevalence of urinary tract infection in pregnant women in relation to Occupation

Occupation	Number of patients	Number of positive	Percentage of Positive UTI's
Non-Working women	170	20	11.7%
Workingwomen	30	10	33.3%

**Discussion**

Urinary tract infections are one of the common infections occurring during pregnancy. The intent of present study is to determine the prevalence of urinary tract infection in pregnancy. A total of 200 pregnant women were included in the study. 30 patients showed significant bacterial growth making an overall prevalence of 15 %. 50% UTI is in the age group of 21-25 yrs, 5% of UTI is equally distributed 18 to 20 and 31 to 35 years. Most commonly UTI is noted in second trimester and least UTI cases are noted in third trimester. Incidence was slightly higher in multies than primes. Multies 20% than prime 10.99%. UTI was more common in non working women than working women this may be due to coital activity and poor hygienicity Urinary tract infections are common complications of pregnancy. Therefore, proper screening and treatment of urinary tract infections during pregnancy is necessary to prevent complications. All pregnant women should therefore be screened for the presence of bacteriuria, which if detected should be treated with an antimicrobial agent believed to be safe for use in pregnancy.

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