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Study of urinary tract infection during antenatal period at tertiary care hospital

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Abstract
Introduction: Urinary tract infections frequently affects most of the pregnant mothers. This problem causes significant morbidity like preterm birth, resistant anemia, new born sepsis, pyelonephritis and added healthcare expenditure. 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 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 analyzed.
Results: 1st, 2nd, 3rd, trimester uti seen in 700, 1100, 200 patients. Majority of cases are in primigravida (1100).
Conclusion: urinary tract infection is more common in primigravida and majority is seen in first trimester. Working women are more prone to UTI than non-working women.

Keywords: urinary tract, during antenatal, tertiary care hospital

Introduction
Pregnancy is an immune deficient state and renal changes in pregnancy makes the pregnant women prone for Urinary tract infections. Three common clinical manifestations of UTIs in pregnancy are: asymptomatic bacteriuria, acute cystitis and acute pyelonephritis. Worldwide 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 and anemia. Acute pyelonephritis can lead to maternal sepsis and renal failure. Recurrent UTIs in pregnancy require long term prophylactic antibiotic treatment. Urinary tract infections (UTI) remain a leading cause of morbidity and healthcare expenditure in all age groups [1, 2] 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 [1] The incidence of UTI reported among pregnant mothers is about 8% [1, 2] Anatomically UTI can be classified into lower urinary tract infection involving the bladder and urethra and upper urinary tract infection involving the kidney and pelvic 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 (> 5 white blood cells [WBCs]/mL) in a symptomatic patient. There is a 5-10% more incidence of urinary tract infection in pregnancy as compared to non- pregnancy woman. 61% pregnant women with asymptomatic bacteriuria in pregnancy went on to develop symptomatic infection and 20% developed pyelonephritis [3]
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.

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.
- mothers who are at risk of uti due to secondary causes like stones, sickle cell anemia

Sample size: 2000

Duration of study: 24 months (01-01-2017 to 31-12-2018)

Place of study: Antenatal Clinic at Bowring and Lady Curzon Hospitals of Bmcri, Bangalore

Type of study: Descriptive observational study

Methodology

Consecutive booked antenatal women who presented to antenatal clinics were randomly recruited into the study (After informed verbal consent,) either had any of the symptoms suggestive of urinary tract infections or without any symptoms...A consecutive 2000 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: No of Patients

	Number of patients	Percentage
Total no. of patients enrolled	2000	100
Number of Pregnant women with UTI	600	15
Number of Pregnant women without UTI	1400	85

A total of 2000 pregnant women were included in the study. In this study out of 2000 pregnant cases 600 patients showed significant bacterial growth making an overall prevalence of 15 %.

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

Age (Years)	Number of patients examined	Number of positive UTI's	Percentage of Positive UTI's
18-20 years	100	0	0
21-25 years	1000	201	20.1%
26-30 years	800	41	10.1%
31-35 years	100	10	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	700	61	8.5%
2nd Trimester	1100	199	18%
3rd Trimester	200	41	20.5%
Total	2000	290	14.5%

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

Obstetric score	Number examined	Number positive	% Positive
1st Gravid	1100	120	10.9%
2nd Gravid	700	140	20%
3rd Gravid	200	40	20%

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

Occupation	Number of patients examined	Number of positive UTI's	Percentage of Positive UTI's
Non-Working women	1700	200	11.7%
Working women	300	100	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 2000 pregnant women were included in the study. 300 patients showed significant bacterial growth making an overall prevalence of 15 %.no cases are between 18-to 20 years, 50% uti is in the age group of 21-25 yrs, 5% of until 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 prime's 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 hyginicity 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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