



ORIGINAL ARTICLE

Urinary tract infection and associated risk factors among pregnant women at a tertiary care hospital.

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ABSTRACT... Objective: To determine prevalence of UTI in pregnant women and its associated risk factors at a tertiary care hospital. **Study Design:** Cross Sectional study. **Setting:** Department of Gynae & Obstetrics Independent University Hospital, Faisalabad. **Period:** 1-10-2022 to 31-3-2023. **Methods:** All pregnant patients visiting gynae OPD (5280) were enrolled for study. Mid-stream urine sample was taken and analyzed. UTI was diagnosed if >10 pus cells / HPF were seen. Inclusion Criteria: All pregnant females attending antenatal clinic during study period. Exclusion Criteria: Women with chronic renal disease. History of antibiotic treatment in last one week, Congenital renal abnormality. Patients on immuno suppressive therapy. **Results:** The prevalence of UTI in our study was 28%. In this study 593 patients (40%) were <20 years of age, 258(17%) were in 21-30 years age group, 246 (16%) were 31-40 years and 381(26%) were >40 years of age. In our study 526 (35%) were primigravidas, 249(17%) were G2, 272(18%) were G3 and 431 (29%) were G4 or above. In this study 698 (47%) patients were in first trimester, 320(22%) were in second trimester, 460(31%) in third trimester. Among risk factors 245 patients (16%) were anemic and 421(28%) were diabetic. **Conclusion:** The Prevalence of UTI in pregnant female of independent university hospital Faisalabad is quite high. Anemia and diabetes are major associated risk factors. Owing to its association with a number of complications, UTI needs to be diagnosed and treated promptly to lessen perinatal and maternal morbidity and mortality.

Key words: Bacteruria, Dysuria, Flank Pain, Nocturia, Perinatal Outcome, UTI.

INTRODUCTION

Urinary tract infections (UTI) are widespread among pregnant women and are associated with adverse maternal, fetal and neonatal outcome. In pregnancy certain physiological and anatomical changes occur in urinary tract such as urethral dilatation, decreased bladder tone with resulting urinary stasis and increased bladder volume. All these changes enhance risk of UTI during pregnancy. Certain changes in immune system during Pregnancy also contribute to increasing UTI in pregnant women. Increasing age, diabetes, urinary tract disorders and history of UTI increase the risk of urinary tract infection in pregnancy.¹

UTI in pregnancy may be symptomatic or asymptomatic. Asymptomatic bacteruria is presence of significant bacteruria without symptoms of acute UTI. Symtomatic UTIs are

divided into lower tract (acute cystitis) or upper tract (acute pyelonephritis) infections.²

Urinary tract infection is one of the most frequent problems facing the obstetricians. These are among the most common health problems worldwide, especially in developing countries like Pakistan. Very few studies have been done In Pakistan and data is scarce.

UTIs have significant morbidity and mortality associated with them. Low birth weight: preterm labour, fetal growth restriction and neonatal sepsis are associated with UTI.³

UTI, if untreated during pregnancy, can lead to adverse effects such as preterm labour, hypertension, pre-eclampsia, anaemia, amnionitis, pyelonephritis septicemia, low birth weight babies, still

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birth and neonatal death.⁴

Keeping in view the importance of UTI and its dreadful effects on mother and fetus, we conducted a study at Independent University Hospital which is a 500 bed Hospital and caters for a large number of pregnant populations in Faisalabad.

METHODS

After approval from hospital ethical committee (IRB number 000045). A cross sectional study was performed in department of gynae & obs Independent University Hospital Faisalabad for a period of six months from 1-10-22 to 31-3-23. Sampling technique was by simple random sampling. All pregnant females attending antenatal clinic were included in study after written informed consent. Demographic data was collected such as age, number of pregnancies, duration of gestation, occupation and socioeconomic. Thorough history was taken to identify risk factors such as anaemia, diabetes, poor hygiene. A mid-stream clean catch urine sample was collected and complete examination of urine was done. UTI was diagnosed on urine examination if >10 leucocytes were detected per high power field. All this information was recorded on a predesigned proforma.

Data was analyzed by SPSS version 12.

RESULTS

In our study period total 5280 pregnant patients visited gynae OPD. Out of these patients 1478 (28%) had UTI.

Among them 526(35%) were primigravidas, 249(17%) were G2, 272(18%) were G3 and 431(29%) were G4 and above.

Out of total 1478 patients, 593(40%) were <20 years of age, 258(17%) were in age group 21-30, 246(16%) were 31-40 years and 381(26%) were >40 years of age.

Among 1478 pregnant patients 698(47%) were in their first trimester 320(22%) in second trimester and 460(31%) were in third trimester.

Regarding risk factors 245(16%) were having anemia and 421(28%) were diabetics.

In symptomatology 134(9%) patients had history of frequency and urgency 467(31%) had burning micturition 134(9%) had flank pain while 444(30%) were asymptomatic.

Age In Years	No. of Patients	% age
<20	593	40
21-30	258	17
30 -40	246	16
>40	381	26

Table-I. Distribution of patients according to age n=1478

Parity	No. of Patients	% age
Primigravida	526	35
G2	249	17
G3	272	18
G4	431	29

Table-II. Distribution of patients according to parity n=1478

Trimester	No. of Patients	% age
1 st Trimester	698	47
2 nd Trimester	320	22
3 rd Trimester	460	31

Table-III. Distribution of patients according to pregnancy trimester n=1478

Risk Factors	No. of Patients	% age
Diabetes	421	28
Anaemia	245	16
History of UTI	456	31
Poor Hygiene	154	10
Low Socioeconomic status	202	14

Table-IV. Distribution of patients according to risk factors n=1478

Symptoms	No. of Patients	% age
Flank pains	134	9
Burning Micturition	467	31
Dysuria	201	13
Nocturia	98	66
Increased frequency urgency	134	9
Asymptomatic	444	30

Table-V. Distribution of patients according to symptoms n=1478

DISCUSSION

Urinary tract infection (UTI) is one of the infections

that occurs along the urinary tract including the urethra, bladder, ureter and kidney. Pregnant patients are more susceptible to UTI due to physiological changes in the urinary tract during pregnancy. Pregnancy hormones influences these changes. Gravid uterus causes anatomical obstruction to ureters and vesicoureteric reflux is also increased. So pregnancy is a risk factor for increased UTI and pregnant patients get this infection more frequently than general population. UTI has significant morbidity and mortality associated with them. e.g maternal renal problems, anaemia, hypertension, preterm labour and fetal growth restriction. Owing to burden of UTI on society and its untoward effects, we conducted a study at independent university hospital to find out prevalence of this disease in our pregnant population and also to determine associated risk factors.

In our study out of 5280 pregnant patients, 1478 were having UTI which means prevalence in our study %. The high incidence of UTI in our study was due to the fact that most of our patients were from rural population and they had poor socio-economic status. In a study conducted in Ghana prevalence was 2%-10%.⁵

Pregnant women in developing countries have higher rates of UTI and it burdens the developing nations.⁶

In another study prevalence was 33.5 %.⁷

Forson et al conducted a study showing prevalence of UTI as 42.8%.⁸

One study in Uganda showed prevalence of 35%.⁹ The prevalence in our study is lower than a study in Nigeria where prevalence was quite higher i.e 75%.¹⁰

The difference in results might be due to different research methods with previous studies.

Most of our patients 593(40%) were <20 years of age. This may be explained by early age of marriage in Pakistan especially in rural areas. Also young pregnant patients are more prone to have

nutritional deficiency due to lack of knowledge regarding balanced diet so putting them at risk for developing different infections including UTI.

Another study also found age of 20 years as a risk factor for UTI.¹¹

In contrast to our study, a study conducted by Kerure et al, UTI prevalence was higher in patients whose age was between 26-35 years.¹²

One study by Haider et al found no association between maternal age and UTI.¹³

During our study period most pregnant females 698(47%) were in their first trimester. In a study 41% of UTI are diagnosed in first trimester.¹⁴

Gestational age was significant risk factors with UTI among pregnant females. UTI was more frequent in second trimester of pregnancy (57%) and was four times more at risk of developing UTI than those in first trimester of pregnancy.¹⁵

Some studies from other studies in Pakistan, Ethiopia and Sudan did not show any association of UTI and gestational age.^{16,17}

In our study 526(35%) patients were primigravida's, 249(17%) were G2, 272(18%) were G3 and 431(29%) were G4 or above. However in one study parity was not having any association with UTI. One study in Sudan revealed no association with UTI.¹⁸

In our study 245(16%) patients were anemic. One study showed that anaemia and diabetes are significant risk factors for UTI during pregnancy with significant difference between infected and non-infected women.¹⁹

In one study anaemia was not a significant risk factor in a study.²⁰

In our study 456 patients (31%) had history of urinary tract infection in past.

It was found to be an important predisposing factor by Fatima et al.²¹ also found that UTI is more

common in those patients who have history of same infection in past. In contrast to above study another study 73% of patients had no known history of UTI.²²

CONCLUSION

The Prevalence of UTI in pregnant female of independent university hospital Faisalabad is quite high. Anemia and diabetes are major associated risk factors. Owing to its association with a number of complications, UTI needs to be diagnosed and treated promptly to lessen perinatal and maternal morbidity and mortality.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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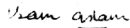
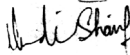
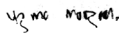



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3	Uzma Manzoor	Reference writing.	
4	Saima Qureshi	Discussion.	
5	Tasneem Azhar	Proof reading.	
6	Saadia Bano	Data collection.	
7	Uzma Shahzad	Discussion.	