



UTI among patients attending IPD and its relation with preterm labor in Bangabandhu Sheikh Mujib Medical College Hospital, Faridpur

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Abstract

Background: Urinary tract infections (UTIs) now have become a severe public health problem because of the morbidity and treatment cost. UTI can be occur in all age groups, but women are more prone to develop UTI in comparison to men, due to several factors like short urethra, absence of prostatic secretions, pregnancy and easy infection in the urinary tract with fecal flora. **Material & Methods:** This study was a retrospective cross-sectional study which was conducted at the department of Obstetrics and Gynaecology, Bangabandhu Sheikh Muzib medical college hospital, Faridpur, Bangladesh. The study was conducted during the period of January 2021- January 2022. The total sample size for this study was 197. **Results:** Most of the respondents 87(44.2%) were aged between 25-29 years and followed by 16(8.1%) were aged 20-24 years, 81(41.1%) were 30-34 years and 13(6.6%) were aged >34 years. According to gravida, 4th gravida were 65(33.0%), 3rd gravida 37(18.8%), 2nd gravida 62(31.5%) and 1st gravida were 33(16.8%). The most common isolated organism was E. coli which was found in 135(68.5%) cases and followed by S. Aureus in 21(10.7%), Coagulase negative staph in 20(10.2%), Klebsiella in 9(4.6%) and GBS in 12(6.1%) cases. Majority of the patients 192(97%) had no complications onwards and only 5(3%) case was found with pyelonephritis. **Conclusion:** UTI in pregnancy has a major influence on pregnancy outcome. The unsolicited miseries of the pregnant mothers and their progenies might easily be legitimate by early diagnosis and treatment of UTI during pregnancy.

Keywords:- UTI, IPD, Preterm labor.

INTRODUCTION

Urinary tract infections (UTIs) now have become a severe public health problem because of the morbidity and treatment cost also

affecting the urethra, bladder, and kidney.^[1] UTI can be occur in all age groups, but women are more prone to develop UTI in comparison to men, due to several factors like short urethra,

absence of prostatic secretions, pregnancy and easy infection in the urinary tract with fecal flora.^[2] UTI is more prominent among the pregnant women. The contamination and its treatment procedure can have severe impact on the pregnancy outcome. Maternal UTI is unconventionally linked with some factors such as preterm labor, preeclampsia, intrauterine growth hindrance, and cesarean delivery.^[3] Pregnant women having asymptomatic bacteriurias are correspondingly more probable to have preterm labor. Symptomatic and asymptomatic bacteriurias had been identified among 17.9 % and 13.0% pregnant women, correspondingly.^[4] However, several risk factors of UTI in pregnancy have been stated in studies which may differ in relation to the geographical, social and biological structure.^[5] Other studies have reported that around 4.3% to 28.8% pregnant women have UTI.^[1,3] Several studies in Egypt identified that incidence of UTI during pregnancy ranged between 22-35%.^[6,7] Also, UTI is more prominent to pregnant women are at beginning in week 6 and peaking during weeks 22 to 24.^[8] However, there are several physiological, anatomical and personal factors contribute to this problem during pregnancy.^[9] Some causative factors comprising urethral dilatation, enlarged bladder volume, reduced bladder tone with increased urinary stasis. These boost bacterial growth pathologically causes the development of glycosuria among pregnant women up to 70%.^[10,11] UTI has been concerned as a risk factor due to adversative perinatal outcomes, premature birth (birth prior to 37 weeks) and low birth weight (weight below 2500grams) and perinatal death.^[12,13] Premature neonates with low birth weight have more risks of morbidity and mortality during the early year of life. They

may also suffer from a plethora of lifetime health disorders like neurological, respiratory, gastrointestinal, cardiovascular, and immunological.^[14] UTIs usually have a minor clinical course with limited sequelae in general patients, but in case of asymptomatic bacteriuria in the gestating female may have risk for many complications.^[15] The aim of the study was to find the effects of UTI among patients attending IPD and its relation with preterm labor.

Objective of the Study

The objective of this study was to find the effects of UTI among patients attending IPD and its relation with preterm labor.

MATERIAL AND METHODS

This study was a retrospective cross-sectional study which was conducted at the department of Obstetrics and Gynaecology, Bangabandhu Sheikh Muzib medical college hospital in Faridpur, Bangladesh. The study was conducted during the period of January 2021- January 2022. The total sample size for this study was 197.

Inclusion Criteria

- All primigravida and multigravida pregnant women who were aged between 20-35 years were included in this study
- Women with lower urinary tract symptoms after 24 weeks of pregnancy having one or more events of UTI were included.

Exclusion Criteria

- Patients with intrauterine fetal death.

- Patients having prolonged disorder including uncontrolled hypertension, diabetes and decompensated heart lesions.

All patients were selected by reviewing the hospital's UTI with preterm labour nominal register. The information regarding the hospital course and treatment given were recorded properly. Patients were included in study based on the positive report of urine C/S when any pathogen was identified. The patients were followed up onwards in order to identify the incidence of fetal complications such as reduced fetal weight or probabilities of going in preterm labor. During delivery, birth weight and gestational age was also recorded. Preterm labor was considered when delivery was done before 37 weeks of pregnancy and low birth weight was considered if weight is less than 2500 gram at the time of birth. Ethical approval was given by the ethical review committee. The statistical analysis was done using the statistical tool SPSS version 21.

RESULTS

[Figure 1] shows the age distribution of the respondents. Most of the respondents 87(44.2%) were aged between 25-29 years and followed by 16(8.1%) were aged 20-24 years, 81(41.1%) were 30-34 years and 13(6.6%) were aged >34 years.

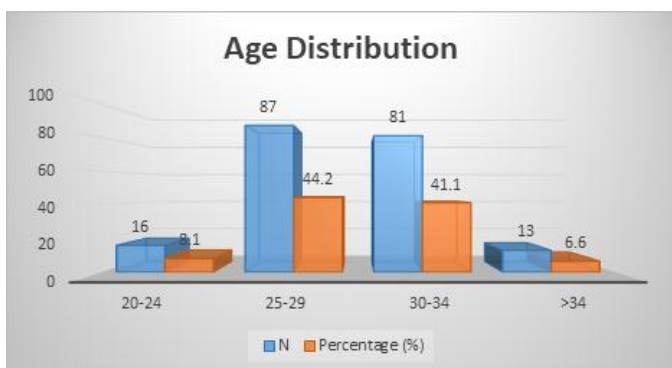


Figure 1: Age distribution of the respondents

[Figure 2] shows the residential status of the study patients where most of the patients 176(89%) were from rural areas and only 21(11%) were from urban areas.

[Figure 3] shows the booking status. Most of the cases 152(77%) were booked and 45(23%) were unbooked.

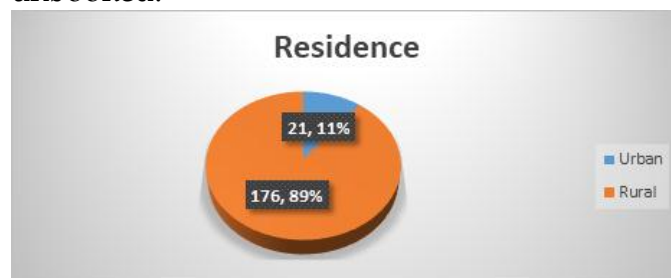


Figure 2: Residential status

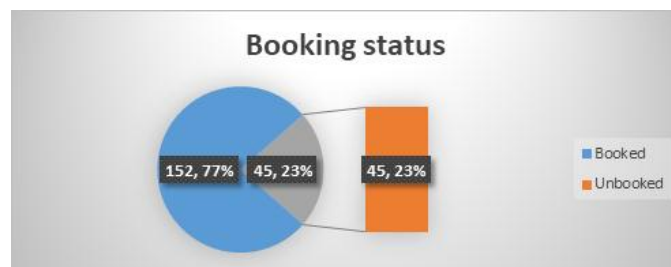


Figure 3: Booking status

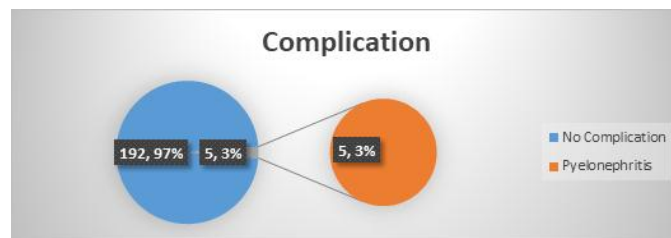


Figure 4: Complications among the study patients

[Figure 4] shows the complications among the study patients. Majority of the patients 192(97%) had no complications onwards and only 5(3%) case was found with pyelonephritis.

[Table 1] shows the number of gravida. According to gravida, 4th gravida were 65(33.0%), 3rd gravida 37(18.8%), 2nd gravida 62(31.5%) and 1st gravida were 33(16.8%).

[Table 2] shows the urine culture and sensitivity among the study patients. The most common isolated organism was E. coli which was found in 135(68.5%) cases and followed by S. Aureus

in 21(10.7%), Coagulase negative staph in 20(10.2%), Klebsiella in 9(4.6%) and GBS in 12(6.1%) cases.

[Table 3] shows the period of gestation in weeks. Only 9(4.6%) cases had gestation period of 28-30 weeks, 29(14.7%) had 30-34 weeks and the most 160(81.2%) cases had gestation period of 34 to 37 weeks.

Table 1: Number of Gravida

Parity	N	Percentage (%)
G4	65	33.0
G3	37	18.8
G2	62	31.5
Primi	33	16.8

Table 2: Urine culture and sensitivity among the study patients

Organism isolated	N	Percentage (%)
E -Coli	135	68.5
S.Aureus	21	10.7
Coagulase negative staph	20	10.2
Klebsiella	9	4.6
GBS	12	6.1

Table 3: Period of gestation

Period of gestation	N	Percentage (%)
28 to 30	9	4.6
30 to 34	29	14.7
34 to 37	160	81.2
Mean ± SD	34.64 ± 1.99	

DISCUSSION

UTI has now become very common among all bacterial infections, which can affect human beings during their life span especially the women.^[16] About 20% women aged between 20-65 years may suffer from at least one episode of UTI in a year, whereas 50% may develop UTI during their lifetime.^[17] Also, UTI is the most recurrent bacterial infections which may occur

during pregnancy. Factors like urethral dilatation, decreased tone, decreased urine concentration and increased stasis and hormonal changes may contribute to the increased risk of UTI along with the increased pregnancy duration.^[18] A study reported that patient having UTI resulted of 15.3% premature births and 11.3% births were with low birth weight.^[19] These findings are in correspondence

with the findings of this present study. Most of the respondents 44.2% were aged between 25-29 years and followed by 8.1% were aged 20-24 years, 41.1% were 30-34 years and 6.6% were aged >34 years [Figure 1]. Most of the patients 89% were from rural areas and only 11% were from urban areas [Figure 2]. In a systematic review and meta-analysis by Temesgen Getaneh et al. claimed that majority of study patients were rural having no formal education which resulted low level of awareness regarding infection prevention and health-seeking behavior.^[20,21] According to gravida, 4th gravida were 33.0%, 3rd gravida 18.8%, 2nd gravida 31.5% and 1st gravida were 16.8% [Table 1]. In this study, the most common isolated organism was E. coli which was found in 68.5% cases and followed by S. Aureus in 10.7%, Coagulase negative staph in 10.2%, Klebsiella in 4.6% and GBS in 6.1% cases [Table 2]. Dheepthambiga G in their study stated the most common isolated organism E. coli in 69% cases and followed by S. Aureus in 10.8%, Coagulase negative staph in 10.8%, Klebsiella in 4.2% and GBS in 3.8% cases.^[22] Only 4.6% cases had gestation period of 28-30 weeks, 14.7% had 30-34 weeks and the most 81.2% cases had gestation period of 34 to 37 weeks [Table 3]. The association between multiparity and UTI is due to profound physiologic changes affecting the entire urinary tract during pregnancy has a

significant impact on the natural history of UTI during gestation.^[23] Most of the cases 77% were booked and 23% were unbooked [Figure 3]. The study of Dheepthambiga G et al. also showed consistent result.^[22] Majority of the patients 97% had no complications onwards and only 3% case was found with pyelonephritis [Figure 4]. This result was also supported by the study of Dheepthambiga G et al.^[22]

CONCLUSIONS

UTI in pregnancy has a major influence on pregnancy outcome. The unsolicited miseries of the pregnant mothers and their progenies might easily be legitimate by early diagnosis and treatment of UTI during pregnancy. Hence this present study suggest that, health education regarding personal hygiene should be stressed by the antenatal care clinicians to all pregnant women and the result from this study also specified the requirement for family interventions in this regard. Urine culture must be examined at the first antenatal visit and follow-up cultures of urine should also be done regularly. Based on the reports of culture test, the pregnant women should be treated with suitable antibiotic therapy so as to lessen this high frequency of UTI during pregnancy and also reduce complications to avoid maternal-fetal adverse outcome.

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