



A Study To Assess The Prevalence And Risk Factors Of Urinary Tract Infection Among Antenatal Women Attending Selected Hospitals Of Safedabad, Barabanki, Uttar Pradesh

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Abstract

Background:

Urinary Tract Infection (UTI) is one of the most common medical complications during pregnancy and is associated with adverse maternal and fetal outcomes if left untreated. Physiological and anatomical changes during pregnancy increase the susceptibility of antenatal women to UTIs.

Objectives:

1. To assess the **prevalence of urinary tract infection** among antenatal women attending selected hospitals of Safedabad, Barabanki, Uttar Pradesh.
2. To identify the **risk factors associated with urinary tract infection** among antenatal women.
3. To determine the **association between urinary tract infection and selected socio-demographic variables** of antenatal women.
4. To determine the **association between urinary tract infection and selected obstetric variables** of antenatal women.

Methods:

A descriptive cross-sectional study was conducted among **100 antenatal women** attending selected hospitals of Safedabad, Barabanki, Uttar Pradesh. A non-probability convenience sampling technique was used. Data were collected using a structured questionnaire to assess socio-demographic variables and risk factors, along with urine routine examination and culture reports. Data were analyzed using descriptive and inferential statistics.

Results:

The prevalence of UTI among antenatal women was found to be **28%**. Common risk factors identified were poor perineal hygiene (64%), inadequate fluid intake (58%), previous history of UTI (42%), multiparity (36%), anemia (48%), and sexual activity during pregnancy without adequate hygiene (31%). A significant association was found between UTI and gestational age, parity, personal hygiene practices, and anemia status ($p < 0.05$).

Conclusion:

UTI is prevalent among antenatal women and is strongly associated with modifiable risk factors. Early screening, health education, and promotion of hygienic practices can significantly reduce the burden of UTI during pregnancy.

Keywords: Urinary tract infection, Antenatal women, Prevalence, Risk factors, Pregnancy

Introduction

Pregnancy is a unique physiological state that increases a woman's susceptibility to urinary tract infections (UTIs) due to various hormonal, anatomical, and functional alterations in the urinary system. The influence of progesterone leads to relaxation of smooth muscles, resulting in dilatation of the ureters and decreased bladder tone. These changes cause urinary stasis, which provides a favorable environment for bacterial growth and ascending infections. As a result, pregnant women are at a higher risk of developing both symptomatic and asymptomatic bacteriuria.

Urinary tract infections during pregnancy are associated with significant maternal and fetal complications if not detected and treated early. Maternal complications include acute pyelonephritis, anemia, sepsis, and increased hospital admissions, while fetal complications may involve preterm labor, low birth weight, intrauterine growth restriction, and increased perinatal morbidity. Due to these adverse outcomes, UTIs are considered an important clinical concern in antenatal care.

In India, UTIs continue to be a major public health problem among antenatal women, particularly in rural and semi-urban areas. Factors such as poor personal and perineal hygiene, inadequate fluid intake, low socioeconomic status, anemia, multiparity, and limited access to quality healthcare services contribute to the increased prevalence of UTIs. Additionally, lack of awareness regarding preventive measures and delayed health-seeking behavior further aggravate the problem.

Early detection, appropriate management, and preventive strategies play a crucial role in reducing the burden of urinary tract infections during pregnancy. Routine screening through urine examination, health education on hygienic practices, and timely treatment are essential components of comprehensive antenatal care. Hence,

assessing the prevalence and associated risk factors of UTIs among antenatal women is vital for planning effective preventive and interventional strategies.

Objectives of the Study

5. To assess the **prevalence of urinary tract infection** among antenatal women attending selected hospitals of Safedabad, Barabanki, Uttar Pradesh.
6. To identify the **risk factors associated with urinary tract infection** among antenatal women.
7. To determine the **association between urinary tract infection and selected socio-demographic variables** of antenatal women.
8. To determine the **association between urinary tract infection and selected obstetric variables** of antenatal women.

Hypotheses

Research Hypotheses (H₁)

- **H₁₁**: There is a significant association between urinary tract infection and selected socio-demographic variables of antenatal women.
- **H₁₂**: There is a significant association between urinary tract infection and selected obstetric variables of antenatal women.
- **H₁₃**: There is a significant association between urinary tract infection and selected risk factors among antenatal women.

Methodology

Research Design

A **descriptive cross-sectional research design** was adopted to assess the prevalence of urinary tract infection and associated risk factors among antenatal women.

Study Setting

The study was conducted in the **antenatal outpatient departments of selected hospitals of Safedabad, Barabanki, Uttar Pradesh.**

Population

The study population comprised **antenatal women attending the antenatal outpatient departments** of the selected hospitals during the data collection period.

Sample Size

A total of **100 antenatal women** were included in the study.

Sampling Technique

A **non-probability convenience sampling technique** was used to select the participants based on availability and willingness to participate.

Inclusion Criteria

- Antenatal women who were willing to participate in the study
- Antenatal women from **all three trimesters of pregnancy**
- Women who were available at the time of data collection

Exclusion Criteria

- Antenatal women who were on **antibiotic therapy** at the time of data collection
- Antenatal women with **known renal or urinary tract disorders**

Tools for Data Collection

Data were collected using the following tools:

1. **Structured socio-demographic and obstetric questionnaire**, which included variables such as age, education, occupation, parity, gestational age, and previous history of UTI.
2. **Risk factor assessment checklist** to identify factors such as personal and perineal hygiene practices, fluid intake, anemia status, sexual hygiene, and past history of urinary tract infection.
3. **Urine routine examination and urine culture report** to confirm the presence or absence of urinary tract infection.

Data Collection Procedure

After obtaining ethical clearance and informed consent from the participants, data were collected through face-to-face interviews using the structured questionnaire. Urine examination and culture reports were reviewed to identify UTI status.

Data Analysis

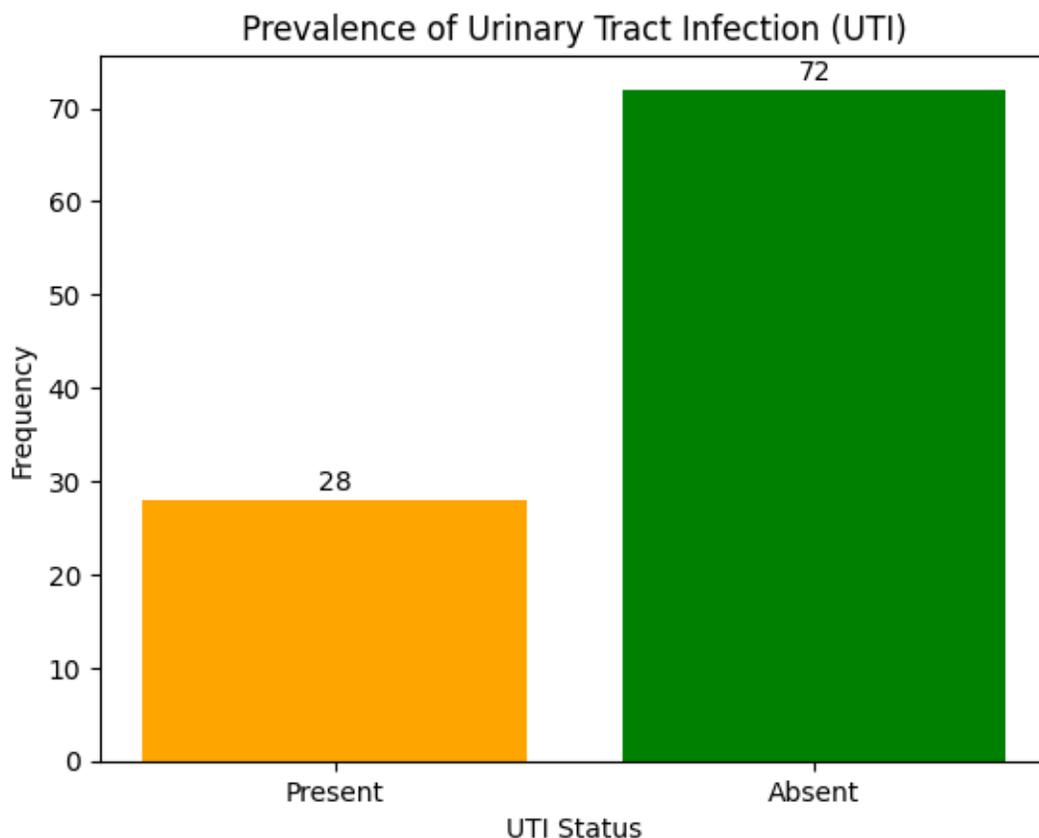
Data were coded and entered into a master sheet for analysis.

- **Descriptive statistics** such as frequency, percentage, mean, and standard deviation were used to describe demographic variables, prevalence of UTI, and risk factors.
- **Inferential statistics**, specifically the **Chi-square test**, were used to determine the association between urinary tract infection and selected variables.

A p-value of < 0.05 was considered statistically significant.

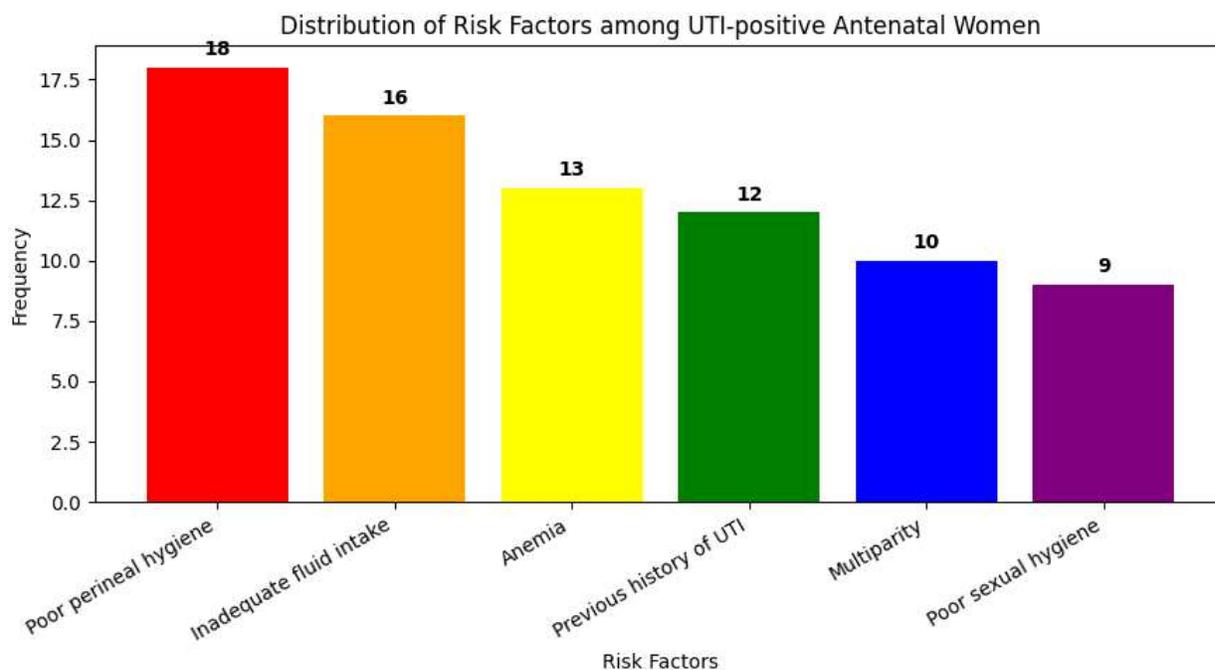
- **Results**
- **Prevalence of Urinary Tract Infection among Antenatal Women (n = 100)**
- The prevalence of urinary tract infection among antenatal women revealed that **28 (28%)** participants were diagnosed with UTI, while **72 (72%)** antenatal women did not have urinary tract infection.
- **Table 1: Distribution of Antenatal Women According to UTI Status**

UTI Status	Frequency (n)	Percentage (%)
Present	28	28
Absent	72	72
Total	100	100



- **Distribution of Risk Factors among UTI-Positive Antenatal Women (n = 28)**
- Among the 28 antenatal women diagnosed with urinary tract infection, **poor perineal hygiene** was the most common risk factor, observed in **18 (64%)** participants. This was followed by **inadequate fluid intake** in **16 (58%)**, **anemia** in **13 (48%)**, and **previous history of UTI** in **12 (42%)** women. **Multiparity** was present in **10 (36%)** cases, while **poor sexual hygiene practices** were reported by **9 (31%)** antenatal women.
- **Table 2: Distribution of Risk Factors among UTI-Positive Women**

Risk Factor	Frequency (n)	Percentage (%)
Poor perineal hygiene	18	64
Inadequate fluid intake	16	58
Anemia	13	48
Previous history of UTI	12	42
Multiparity	10	36
Poor sexual hygiene	9	31



Association between Urinary Tract Infection and Selected Variables

- The association between urinary tract infection and selected socio-demographic and obstetric variables was analyzed using the Chi-square test. The findings revealed a **statistically significant association (p < 0.05)** between urinary tract infection and **gestational age, parity, perineal hygiene practices, and hemoglobin level**. No significant association was observed with other selected variables.

Discussion

The present study assessed the prevalence and risk factors of urinary tract infection among antenatal women attending selected hospitals of Safedabad, Barabanki, Uttar Pradesh. The findings revealed a **28% prevalence of urinary tract infection**, indicating that more than one-fourth of the antenatal women were affected. This prevalence is comparable with findings of similar hospital-based studies conducted in various parts of India, which have reported UTI prevalence ranging from 20% to 35% among pregnant women.

Poor perineal hygiene emerged as the most significant risk factor, followed by inadequate fluid intake, anemia, previous history of UTI, and multiparity. Physiological changes during pregnancy combined with poor hygienic practices facilitate bacterial growth and ascending infections. The significant association observed between UTI and hemoglobin level suggests that anemia may compromise immunity, increasing susceptibility to infections.

A statistically significant association between UTI and gestational age and parity indicates that advancing pregnancy and increased number of pregnancies may elevate the risk of infection due to urinary stasis and anatomical changes. These findings emphasize the need for early identification of risk factors and targeted

preventive strategies during antenatal care. Routine screening and health education can play a crucial role in reducing the prevalence and complications of UTI among antenatal women.

Conclusion

The study concludes that **urinary tract infection is a common health problem among antenatal women**, with a prevalence of 28%. The occurrence of UTI was found to be significantly associated with **preventable and modifiable risk factors**, including poor perineal hygiene, anemia, inadequate fluid intake, and obstetric factors such as gestational age and parity. Early detection, appropriate management, and health education are essential to prevent maternal and fetal complications associated with urinary tract infections during pregnancy.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

- Routine **urine examination and screening** for all antenatal women during antenatal visits
- Regular **health education programs** focusing on perineal hygiene, adequate fluid intake, and preventive practices
- **Early diagnosis, prompt treatment, and regular follow-up** of antenatal women diagnosed with urinary tract infection
- Training of healthcare providers to emphasize UTI prevention as part of routine antenatal care

Ethical Considerations

Ethical approval for the study was obtained from the **Institutional Ethics Committee** prior to data collection. Written informed consent was obtained from all participants after explaining the purpose of the study. Confidentiality and anonymity of the participants were maintained throughout the study, and participants were assured of their right to withdraw from the study at any time without any consequences.

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[https://doi.org/10.1016/0002-9378\(67\)90511-3](https://doi.org/10.1016/0002-9378(67)90511-3)