

Hospital Based Study of Urinary Tract Infections among Pregnant Women in Kashmir

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Abstract

This study was carried out to determine the incidence of urinary tract infection(UTI) among pregnant women attending antenatal clinics at some selected hospitals in kashmir. The sampling lasted for four months from May to August, 2018. Fifty urine samples were collected using sterile disposable universal containers. The samples were transported to Microbiology Laboratory of Jammu and kashir, using microscopy, gram staining and biochemical tests for the identification of the microorganisms. The results obtained showed that 26 (61.5%) pregnant women were infected and age bracket 26-30 years had the highest incidence of UTIs with infection rate of 89.8%. Pregnant women in their second trimesters were most infected with infection rate of 66.7%. However, the statistical analysis revealed significant difference between UTIs and gestational age/educational status of the pregnant women (p-value<0.05).

Keywords: Urinary tract infections, Pregnant women, microbiological study.

INTRODUCTION

Urinary tract infections are common among women. It affects one in five women during their lifetime. UTIs are not as common in men under the age of 50, but they are prone to complications like stone or enlarged prostate. About 20 % of women who have one infection will have a recurrence. Of this group, 30 % will have a third occurrence, and of this group, 80 % have additional recurrences. It is mostly due to antibiotic resistance[1].

UTIs are common during pregnancy period. About 8 % of pregnant women experience with UTI. Increased bacterial population in vagina is the main reason for UTI in both pregnant and non pregnant women[2]. UTI may spread to kidney during pregnancy due to the part of urethral dilation and hydronephrosis. Vaginal epithelium becomes thin in the case of postmenopausal women and the amount of glycogen and estrogen gets decreased. This helps to increase of pH level in vagina which paves way for colonization of uropathogens[3]. There are also some other factors responsible for UTI certain blood-group antigens which increases the

attachment of P-fimbriated E. coli to glycolipids on vaginal and uroepithelial cells.

MATERIALS AND METHODS

Collection and Transportation of Urine Samples

A total of 100 urine samples were collected in each 30ml sterile plastic bottle from the different age group of persons in Jammu & Kashmir, Government hospital. The samples were properly labeled indicating the source, date, time of collection, sex, age of patients. The urine samples were transported in cooler boxes to our Microbiology Laboratory, for bacteriological investigations within 4–6 h of collection.

Bacterial Isolation and Identification: Culture plates of Eosin Methylene Blue Agar, MacConkey Agar, nutrient agar, Blood agar and mannitol salt agar (Hi media, Bombay, India) were used. The collected urine samples were streaked directly on the labeled agar plates and incubated at 37°C for 24 h. After incubation, cultures were examined for significant growth. Subcultures were then made into plates of nutrient agar and incubated for another 24 h.

RESULTS AND DISCUSSION

Incidence of Urinary Tract Infection

From July 2010 to June 2018, 50 urine samples were collected and processed for isolation of pathogens. Patients were grouped into six different categories according to age. Totally 34 samples yielded the various pathogens and which samples yielded 49 isolates.

S. No.	Bacterial Isolates	No. of Isolates	% of Occurrence
1.	Escherichia coli	12	14.09
2.	Pseudomonas aeruginosa	7	8.73
3.	Enterococcus faecalis	6	7.61
4.	Staphylococcus aureus	7	6.36
5.	Streptococcus pyogenes	7	6.36
6.	Klebsiella pneumonia	6	4.99
7.	Protease vulcaricus	5	3.87

Detection of various pathogens on different media was done. All isolates were confirmed with colony morphology and cultural characteristics. Suspected colonies were sub-cultured into nutrient agar slant

Identification of UTI Causing Bacterial Isolates

Table. 1 showed the pattern and distribution of some pathogens caused UTI. E. coli with 28.09% isolate had the highest frequency followed with Pseudomonas aeruginosa (15.73%), Enterococcus faecalis (14.61%), Staphylococcus aureus (12.36%), Streptococcus pyogenes (12.36%), Klebsiella pneumonia (8.99%) and Protease vulcaricus (7.87%).

for further purpose. Then various biochemical tests were carrying out for species level confirmation. The cultural character and biochemical test result were tabulated (Table 2).

S. No.	Bacterial Isolates	Cultural media	Positive results
1.	Escherichia coli	EMB	green-metallic sheen colonies
2.	Pseudomonas aeruginosa	Nutrient Agar	Greenish colonies
3.	Enterococcus faecalis	Chromogenic agar	Blue colored colonies
4.	Staphylococcus aureus	Mannitol Salt Agar	Yellow coloured colonies
5.	Streptococcus pyogenes	Blood agar	haemolytic colonies
6.	Klebsiella pneumonia	MacConkey Agar	Pink Color colonies
7.	Protease vulcaricus	Chromogenic agar	Light brown colored colonies

Urinary tract infections (UTIs) are a leading cause of morbidity and health care expenditures in persons of all ages. Sexually active young women are disproportionately affected, but several other populations, including elderly persons and those undergoing genitourinary instrumentation or catheterization, are also at risk.

Urinary Tract Infections are a serious health problem affecting millions of people every year. The purpose of present study was to find out the existence of uropathogens and their susceptibility and resistance profile pattern. The prevalence of UTI varies by age, race, sex and temperature[4].

about 40% of women and 12% of men experience at least one symptomatic UTI during their lifetime, and approximately 25% of affected women show recurrent UTI (RUTI)[5].

Urinary tract infections (UTIs) are one of the most common bacterial infections affecting humans all the way through their life span. Urinary Tract Infections are more common in females than in men. Incidence in women in the age of 20—40 years ranges from 25 to 30% whereas in older women above 60 years of age it ranges from 4 to 43% [6].

In our study similar findings were obtained in people of Namakkal Dt. and also reported that the same incidence in women in the age groups of 21 to 30. In this study, totally 64% of individuals found to be positive for the significant urinary tract infection from patients attending Govt. hospital, Kashmir, India. Standard biochemical tests were performed to identify the bacterial isolates that cause UTI from the collected urine samples. Characterization and identification of the isolates was done using the methods[7].

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