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Study on Urinary Tract Infection among Females of Reproductive Age Group

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Abstract

Background: Urinary tract infection (UTI) is defined as the presence of microbial pathogens in the urinary tract and women of the reproductive age group (15-44 years) are the most vulnerable population. UTIs are one of the most common bacterial infections seen in primary care.

Methods: This is a cross sectional descriptive study. The study group was 100 women of reproductive age group (15-44 years). The data was collected using a structured interview schedule followed by collection of urine for microscopic examination and culture. Data was analysed using SPSS 20 software.

Results: The most frequent organsim found was Escherichia coli, followed by Klebsiella pneumoniae, Pseudomonas and Enterococci 37 of the samples were found to be sterile and 9 were reported as budding yest cells. Out of 53 patients who had urinary tract infections the infection was carried out by a single type of organism in 52 patients and in 1 patient the UTI was caused by 2 types of organism.

Conclusion: The urinary tract infection is one of the most common bacterial infections seen in primary care. Although UTI affects both genders, women of the reproductive age group (15-45 years) are the most vulnerable may be due to their anatomy and reproductive physiology.

Keywords: UTI, Reproductive age group, Infection

Introduction

Urinary Tract Infection is defined as the presence of significant number of Pathogenic organism in urinary tract, along with symptoms while recurrent UTI can be defined as two or more episodes within 6 months or three or more episodes in 1 year.[1]

Urinary tract infections are characterized as being either upper or lower UTI, based on the anatomic location of the infection. Lower urinary tract infections include bladder and urethra while the uppe rurinary tract infections include ureters and kidneys. Urinary tract infections are the most common bacterial infections that lead patients to seek medical care. Community acquired urinary tract infections are more frequently encountered from rural and semi urban regions.[2]

The local antimicrobial resistance patterns are of vital significance due to rapid emergence and spread of the resistant microbial population which is being reported now a day from community settings also, affecting management strategies.

It is the role of microbiologist to study and provide the relevant data guiding treating physicians and establishing antimicrobial policies in the hospital settings for the optimal patient care.

With this perspective, the present study was undertaken to get insight into this important subject.

Materials and Methods

This study was carried out in the Microbiology Department of J.L.N. Medical College, Ajmer.

Duration of study - 6 months.

Selection of cases

Inclusion criteria

The inclusion criteria for the study are females of reproductive age group (15-44 years) and coming to microbiology lab for urine culture and sensitivity.

Exclusion criteria

The exclusion criteria for the study - females on any antibiotic therapy, females on mensturation phase of the menstrual cycle and those who are pregnant and patients who were not willing to take part in the study.

Collection

A mid stream urine sample was collected for by the patient in a wide mouthed screw capped, leak proof, sterile universal container. Patients were advised to clean the area and to void the first part of the urine into the toilet and then to collect the "midstream urine in the container and finally to void the last part into the toilet.

Observations

Table 1: Age Distribution

Age Distribution	No. of Patients	Percentage
15-25	31	31
25-35	44	44
35-45	25	25
Total	**100**	**100**

Table 1: shows the age wise distribution of the Urinary Tract Infection patients. The age distribution of the cases is shown in Table 2. Majority of the cases 44% belonged to 25-35 years age group followed by 31% in 15-25 years group and 25% in 35-45 years age group.

Table 2: Age And Marital Status Distribution Of The Urinary Tract Infection

Age Distribution	Married (n = 70)		Unmarried (n = 30)	
	No. of Patients	Percentage	No. of Patients	Percentage
15-25	15	21.43	17	56.67
25-35	32	45.71	13	43.33
35-45	23	32.86	Nil	-
Total	70		30	

Table 2: shows the age and marital distribution of the cases. Majority of married persons belonged to 25-35 years group followed by 32.86% in the 35-45 years, while majority of the unmarried cases were in the 15-25 years age group and 43.33% in 25-35 years group.

Table 3: Number Of Organism Isolated

Name of the Organism	Frequency of Isolation
Escherichia coli	34
Klebsiella Pneumonia	13
Pseudomonas	5
Enterococci	2

Table 3: shows the type of organism isolated in the cases. The most frequent organsim found was Escherichia coli, followed by Klebsiella pneumoniae, Pseudomonas and Enterococci. 37 of the samples were found to be sterile and 9 were reported as budding yest cells. Out of 53 patients who had urinary tract infections the infection was carried out by a single type of organism in 52 patients and in 1 patient the UTI was caused by 2 types of organism.

Discussion

Urinary Tract Infections (UTIs) is one of the most common bacterial infections encountered, second only to respiratory tract infections and the occurrence is found in all age group and both sexes. It remains the most common clinical problem in community and healthcare associated settings.[3-7]

Prevalence of UTI in the present study was found to be 53%. In a study by Subhashini et al the prevalence of UTI was found to be 84%.[8] In a study by Kolawole et al the prevalence of UTI was estimated to be 60% and in a study by Shaifali et al the prevalence was 44.53%.[9-10] The vast difference in the prevalence of UTI between this study and other studies may be due to the study setting. This study was carried out in the community, whereas the other studies were hospital based studies. Either people reporting to the hospital come with symptoms of UTI or

Women are particularly at r sk of developing urinary tract infections due to short and straight urethra in close proximity to anal and perineal region; reproductive physiologyand certain behavioural factors which include delay in micturition, sexual activity, use of diaphragms and use of spermicides. 40% - 50% percent of adult women have a history of at least one episode of UTI in their life time.[5]

Escherichia coli are the most common cause of UTI, accounting for 80-90% of cases. It originates from faecal flora that colonizes the periurethral area (ascending infections). *Klebsiella, Enterobacter, Pseudomonas, Staphylococcus* and *Proteus species* cause most of the remaining cases. Gram positive organisms particularly *Enterococcus faecalis and group B Streptococcus* are also clinically important pathogens. *Staphylococcus saprophyticus* an aggressive community acquired organism, can present with upper urinary tract disease and the infection is more likely to be persistent or recurrent.

Conclusion

The urinary tract infection are one of the most common bacterial infections seen in primary care. Although UTI affects both genders, women of the reproductive age group (15-45 years) are the most vulnerable may be due to their anatomy and reproductive physiology.

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