

Prescription pattern of antibiotic usage for urinary tract infection in tertiary care hospital

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Abstract

Urinary tract infection is caused due to various bacteria in the urinary plot seen with symptoms. Generally, antimicrobials are used in the treatment of the urinary tract infection, but if it is used constantly it will raise the resistance of the bacteria towards the particular antimicrobial, not only this it can also increase the morbidity. Most women are affected by urinary infections and 25-64 years (42.7%) women are affected those women with associated illnesses like diabetes have a higher affection rate (11.3%) and those who used an antibiotic like cephalosporin (65.3%) and most prescribed antibiotic is cefotaxime. In this study, we evaluated the prescription pattern of the antibiotics used in the treatment of urinary tract infections.

Keywords: UTI; Antibiotic; Prescription; Cephalosporin; *E. coli*; Bacteria; Resistance

1. Introduction

Urinary tract infections (UTIs) are a highly common condition in clinical practice. (1). The presence of illness symptoms and bacteria in the urine define UTI. Given all other factors being equal, UTI is a relatively common illness that affects both males and females. The increased prevalence of UTIs in women compared to men may be caused by a variety of clinical variables, including anatomical variations, hormonal impacts, and behavioural patterns. (2). Age, diabetes, spinal rope damage, urinary catheterization, and other factors can have an impact on the aetiology. (3). The majority of gram-negative oxygen-consuming bacilli found in the GI plot are responsible for UTI. Among them include *E.coli*, *Klebsiella*, *Enterobacter*, *Citrobacter*, and *Proteus*. *Staphylococcus epidermidis*, *Staphylococcus saprophyticus*, and *enterococcus* species are some additional common bacteria. (4). The likelihood of urinary tract infections (UTIs) is influenced by bacterial virulence factors and the severity of host defence deficits. The patient's clinical situation, antibacterial sensitivity patterns in the practise region, awareness of the most common pathogens in their age group, and alternatives for follow-up are all elements that influence the first decision to administer antibacterial medication. Examining studies on the use of remedies and drugs can help identify associated problems and be helpful in criticising a doctor for careless pharmaceutical use. (5). Define the prescribing pattern and focus on the unreasonable prescribing practice in order to provide the correction message. (6). Studies on drug use provide insight into unjustified and needless prescriptions, which drive up therapy costs and cause workers to miss work due to illness or hospitalisation. India, a developing country, cannot possibly afford these. (7). Studies on drug usage have been more popular in recent years as a potential technique for assessing healthcare systems. The current study aims to focus on the trends in antibiotic use in urinary tract infections. These overall rates and trends, which are not particular to any one disease, indicate the usage of antibiotics in treating urinary tract infections.

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2. Material and methods

We conducted a prospective observational study female medicine ward at Virudhunagar Government Medical College & Hospital. Antibiotic prescriptions were evaluated for patients with UTI. Information on the patient's diagnosis, any accompanying illnesses, and the prescribed antibiotics were collected using a data extraction form. Additionally, information about the dosage, timeframe, and frequency of antibiotic treatment was collected for prescriptions. Whenever necessary, descriptive statistics were used to summarise the data.

3. Results

This study evolved around the patients with urinary tract infections, and we employed adult and geriatric patients between 15-65 years of age we also observed UTI with certain other co-morbid conditions. The results are tabulated and discussed further.

Table 1 Age-wise distribution

Age of the patient	No of cases	Percentage
15-24	42	36%
25-64	50	42.7%
65 above	25	21.2%

The research observed the medication usage design in the patient treated UTI patients between the age group 15-24 years is 42 (36%) and 25-64 years is 50 (42.7%) and finally the age group of 65 years above was found to be 25 (21.5%)

Table 2 UTI associated illness

Associated illness	No of cases	Percentage
Diabetes mellitus	13	11.3%
Hypertension	11	9.7%
Coronary artery disease	6	4.8%
Anemia	6	5%
Cystitis	2	2.1%
Renal calculi	9	7.3%
Others	70	60%

In this study, the observed Patients with the condition of UTI were also presented with other following associated illnesses such as diabetes mellitus which was prevented in 13 patients (11.3%), hypertension in 11 patients (9.7%), CAD among 6 patients (4.8%), anaemia in 6 patients (5%), cystitis in 2 (2.1%), and renal calculi among 9 patients (7.3%).

Table 3 Antibiotics used for UTI treatment

Drug	No of cases	Percentage
	Cephalosporins	
Cefotaxime	40	35.4%
Ceftriaxone	28	23.5%
Cefixime	4	3.8%
Cephalexin	3	2.6%
	Fluoroquinolones	

Ciprofloxacin	11	9.1%
Norfloxacin	8	6.7%
Ofloxacin	6	4.5%
Levofloxacin	2	2%
	Others	
Nitrofurantoin	7	5.76%
Amikacin	2	2%
Azithromycin	4	3%
	Penicillin	
Amoxicillin+clavunate	2	1.64%

The above-table data provides the data on patients usage of the particular antibiotics, cephalosporins (65.3%) in 75 patients, fluoroquinolones (22.3%) in 37 patients, and the other antibiotics (10.76%) in 13 patients, and penicillin (1.64%) in 2 patients.

4. Discussion

This research demonstrates the general patterns of the purpose of prescriptions for UTIs in the Drug utilization studies have the potential to provide health professionals with feedback that encourages them to reflect on their practice and seek ways to enhance their performance while also allowing for objective evaluation and analysis of their work. These investigations ought to turn into a technique for expanding position fulfillment and methods for instruction. (9) Anti-microbial obstruction is a rising issue and has turned into a significant danger to the clinical field. Extreme and proper utilization of anti-infection has been a significant supporter of this consistently developing issue. (10) Out of 47 cases concentrated on undeniably were females, as seen in many examinations female prevalence is noted here additionally and the age of the patient in the current study went from 15-65 years and above. In addition found that higher incidences were observed in the age group of 40 and above, despite the fact that the majority of patients were in the age group of 15–24 (36%) 42 and 25–64 (42.7%) 50, the antibiotics used are cephalosporin (65.3%) out of this cefotaxime (35.4%) is used and fluoroquinolones (22.4%) out of this ciprofloxacin (9.1%) is used and amoxicillin + clavunate is (1.64%) is used.

5. Conclusion

Physicians commonly prescribe broad spectrum antibiotics for the treatment of UTI. Cefotaxime potentiate the nephrotoxic effect of nephrotoxic drug including furosemide and aminoglycosides may need to adjust dose in renal impairment patient it should be avoided in pregnancy risk involves overweight potential benefits, it is essential to conduct further comparative studies in which the benefits and harm of these antibiotics are evaluated.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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