

**ASSESSMENT OF PRESCRIPTION PATTERN IN URINARY TRACT INFECTION  
PATIENTS IN TERTIARY CARE HOSPITAL**Joel Varghese<sup>1</sup>, Kesiamol Varghese<sup>1</sup>, Abubaker Siddiq<sup>2\*</sup> and Bharathi D.R.<sup>2</sup><sup>1</sup>Department of Pharmacy Practice, S J M College of Pharmacy, Chitradurga-577502, Karnataka, India.<sup>2</sup>Department of Pharmacology, S J M College of Pharmacy, Chitradurga-577502, Karnataka, India.**\*Corresponding Author: Abubaker Siddiq**

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**ABSTRACT**

**Background:** Urinary tract infection is one the most common microbial disease encountered in medical practice affecting people of all ages. The rationality of prescriptions will help the physician in selecting the most appropriate cost effective treatment. **Objectives:** To analyze the prescription pattern of drug in urinary tract infection patients. To assess the prevalence of urinary tract infection patients and to analyze the rationality among the prescription. **Materials and Methods:** A prospective observational study was conducted in medicine ward of Basaveshwara Medical College Hospital and Research Centre for a period of six months. The data was collected from medical records of the patients and documented in form. **Results:** A total of 110 UTI patients were found during the study period. Among them 39 were male patients and 71 were female patients. Out of 110 patients, 16.03% have been prescribed with nitrofurantoin, 13.96% with cephalosporin, and 5.47% with other flouroquinolones. **Conclusion:** The present study may be propitious for the physician for optimizing rational use of drugs and to improve health care in UTI patients.

**KEYWORDS:** Urinary Tract Infection, Prescription pattern, WHO drug prescribing indicator, Antibiotics.**1. INTRODUCTION**

Urinary tract infection (UTI) is defined as the presence of micro organisms in the urine that cannot be accounted by contamination. These organisms have the potentially to invade into the tissue of the urinary tract and adjacent structures.<sup>[1]</sup> The prevalence and incidence of UTI is higher in women than in men, due to several clinical factors including anatomic differences, hormonal effects and behavioural patterns. Life time risk of developing an UTI is as high as 1 in 5 women.<sup>[2]</sup> UTI may lead to life threatening complications like sepsis and renal scaring. Renal scaring is the most common cause of hypertension in later childhood and renal failures in adults.<sup>[3]</sup> Treatment approaches for UTI depend on various factors. Some of the patient factors which impact the choice of antibiotic used includes age, gender, allergy status and presence of secondary complications or risk factors.<sup>[4]</sup> Rational drug prescribing is defined as "the use of the least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost".<sup>[5]</sup> Clinical pharmacists are able to provide a very valuable role in screening of interactions and advising in its management either at the patient's bedside or in the dispensing process or sale of a medicine.<sup>[6]</sup> The medical audit improves the standards of medical treatment at all levels of health care delivery system so the medical audit is necessary for rationality.<sup>[7]</sup> The study of prescribing pattern is a component of medical audit which seeks

monitoring, evaluation and necessary modifications in the prescribing practices of the prescribers to achieve rational and cost effective medical care.<sup>[8]</sup> Drug utilization research help in identification of clinical use of drugs in populations and its impact on healthcare system.<sup>[9]</sup> In many hospitals the choice of antibiotic usage depends upon the hospital formulary or antibiotic guidelines.<sup>[10]</sup>

Therefore, the present study was conducted to observe the UTI disease, which are most frequently being treated and to identify the irrational prescribing pattern among the inpatients.

**2. MATERIALS AND METHODS**

The prospective observational was approved by the Institutional Ethics Committee, of SJM College of Pharmacy, Vide number: SJMCP/IEC-04/ 2019-20 Chitradurga, Karnataka. The study was carried out in patients admitted in medicine ward of Basaveshwara Medical College and Hospital.

- Patients of age between 18-60 years
- Patients of both genders.
- Both inpatient and outpatients

**Study Procedure:** A six month hospital based prospective observational study was conducted on UTI patients who were admitted in Basaveshwara medical

college hospital and research centre, Chitradurga. The study was started after the approval from the ethical committee. The details about the study was explained to the patients and those patients who are willing to sign the inform consent form were only included in the study. The medical records of such patients were reviewed .The patient's demographic details, clinical details, drug therapy, and data like drug name, dosage, route of administration were collected in data collection form. The collected data were assessed and analyzed by using statistical methods.

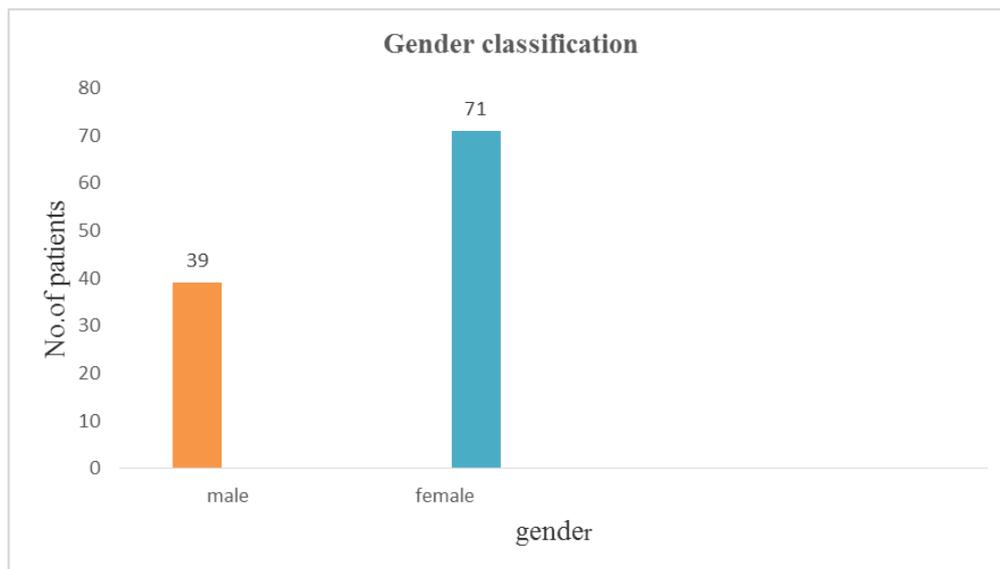
**Statistical Analysis:** The data were analysed by using Microsoft excel-2013. Descriptive statistical

method(mean: for measuring central tendency)was applied and categorical data were analyzed using frequency distribution, chi-square test as a test of goodness of fit, fisher exact test for calculation of P value and result were generated through SPSS software(version 25).

### 3. RESULTS

#### 3.1 Distribution of Subjects According To Gender

A total of 110 UTI patients were enrolled during the study period. Among them 39(35.45%) were males 71(65%) were females. The results are shown graphically represented in figure 1.

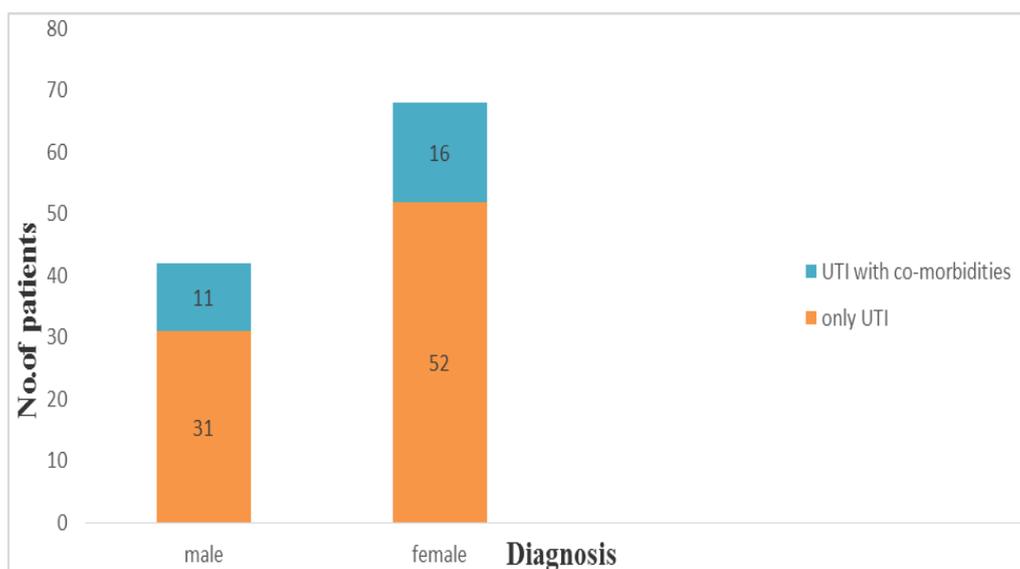


**Figure 1: Distribution according to gender.**

#### 3.2 Distribution of Subjects According to Diagnosis

In this study out of 110 subjects UTI is seen in 31 subjects from male and 52 subjects from female followed

by UTI with co-morbid condition is seen in 11 subjects from male and 16 subject from female. The results are graphically represented in Figure 2.



**Figure 2: Distribution of subjects according to diagnosis.**

### 3.3 Distribution of Subjects According To Age

A total of 110 subjects were found during the study period. The age group among them were classified as; 18

– 28 (12.8%), 29-40 (23.6%) 41-60(63.6%). The result are graphically represented in figure No:3.

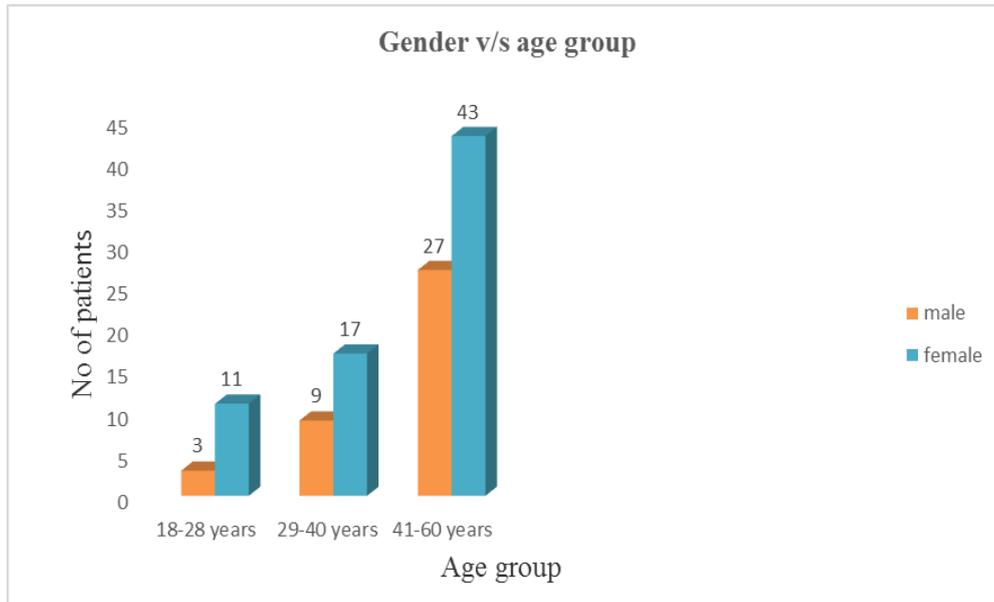


Figure 3: Distribution of subject according to age.

### 3.4 Distribution of Subjects According To Class Of Drugs

In this study, the most class of drugs were cephalosporin 13.963%, proton pump inhibitors 18.113%, nitrofurantoin 16.037%, antipyretics 16.415%, disodium

hydrogen citrate 7.924%, antiemetics 8.491%, antibacterial 5.471%, flouroquinolones 5.094%, other antibiotic 2.831%, antispasmodic 5.661%. The results are graphically represented in figure 4.

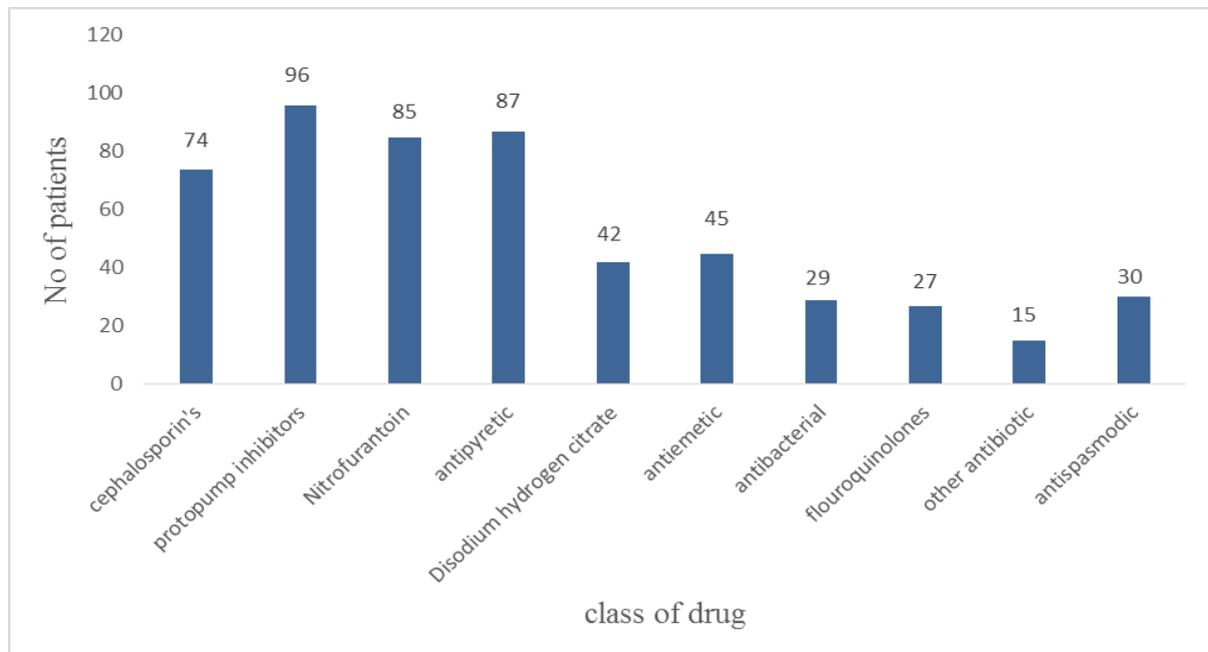


Figure 4: Distribution of subjects according to class of drug.

### 3.5 Distribution of Subjects According To Prevalence

In this study period a total number of 250 subjects were admitted in male medical ward among them 39 were

diagnosed with UTI, 410 Subjects were admitted in female medical ward among them 71 diagnosed with UTI. The result are graphically represented in figure 5.

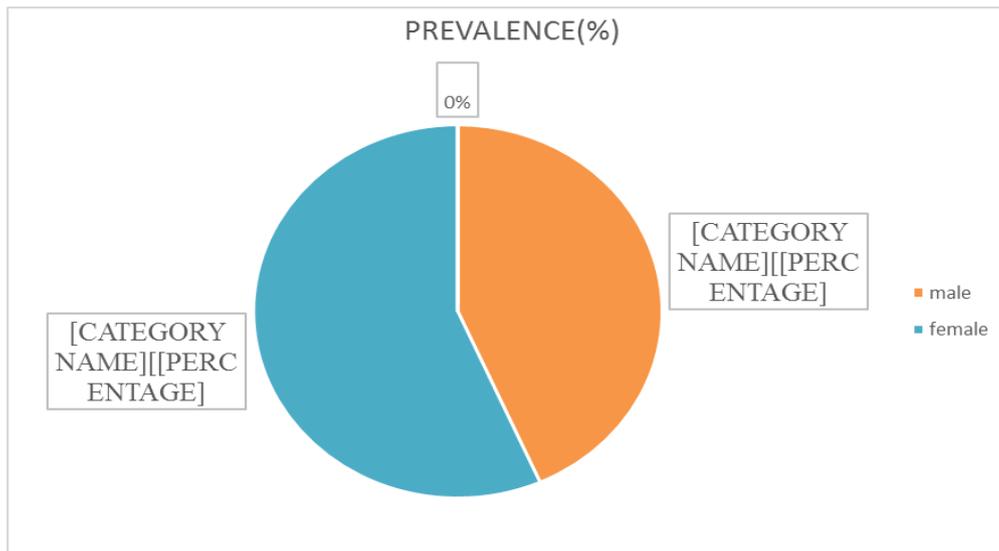


Figure 5: Distribution of subject according to prevalence.

#### 4. DISCUSSION

The principle target of the drug utilization studies/research is to promote the rational prescribing of the drugs. The objective of the study was to describe the drug utilization pattern in treatment of urinary tract infection patients admitted to a tertiary care hospital and to determine any variation in drug prescription pattern. In our study we found that out of 110 subjects, 39(35.45%) subjects from male medical ward and 71(64.54%) subjects from female medical ward. A similar study conducted by Chowta MN *et al* a total of 88 patients were included in the study, out of which 47(53.4%) were males and 41(46.6%) were female.<sup>[11]</sup>

Treatment strategy for complicated UTI depends on the severity of illness. Treatment encompasses three goals: management of the urological abnormality, antimicrobial therapy, and supportive care when needed. Hospitalization is often required. In our study the most commonly prescribed antibiotic were Nitrofurantoin 16.03%. The other class of drug were Cephalosporin's 13.963%, Proton pump inhibitor 18.113%, Antipyretic 16.415%, Disodium hydrogen citrate 7.924%, Antiemetic 8.491%, Antibacterial 5.471%, Flouroquinolones 5.094%, other antibiotic 2.831%, Antispasmodic 5.661%. Similarly, a study conducted by feyissa B *et al*, out of 282 patients, 189(67.09%) were prescribed by flouroquinolones which is the most prescribed drug, 54(19.1%) were prescribed by penicillin, 16(5.7%) by tetracycline and 14 (5.0%) by sulpha drugs.<sup>[12]</sup>

In our study, a total of 230 antibiotics were prescribed for 110 patients in addition to antibiotic, 300 other drug were prescribed for patients making the total amount of drugs used in these patient 530. The most commonly prescribed antibiotic was nitrofurantoin accounting for 85(16.037%). All of drugs were prescribed from national treatment guideline in which all these medications are recommended to be used in UTI patients.

#### 5. CONCLUSION

This study concludes that, the given prescription was rational and it was observed that the hospital physicians prescribed antibiotics more rationally with no banned drugs and less newer drugs. As the drugs were prescribed from national treatment guidelines and in their generic name, moreover the majority of drugs were prescribed as monotherapy. The prescribing pattern could be improved by reducing the number of drugs per prescription, prescription indicators by the WHO can help to health care centre to obtain better organization and improve healthcare attention to the public. Thus the present study may be propitious for the physician for optimizing rational use of drugs and to improve health care in UTI patients.

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