



ORIGINAL RESEARCH PAPER

Clinical Research

DRUG USE EVALUATION AND ASSESSMENT OF ANTIBIOTICS PRESCRIBED IN MEDICAL WARDS OF A TERTIARY CARE HOSPITAL
KEY WORDS: Drug use evaluation, antibiotics, tertiary care hospital, fluoroquinolones, prophylaxis,

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ABSTRACT

Drug use evaluation sometimes referred to as drug utilization review, is a system of continuous, systematic, criteria based drug evaluation that ensures the appropriate use of drugs. Antibiotics are powerful medicines that fight bacterial infections. Used properly antibiotics can save lives. Over usage of antibiotics leads to antibiotic resistance. Our study mainly based on the usage of antibiotics in medical wards of a tertiary care hospital.

METHODOLOGY

Study design: This was a prospective observational study among 450 inpatients of a tertiary healthcare hospital.

Study setting: The study was done in a tertiary healthcare hospital (Karimnagar).

Study duration: The study was conducted from six months (December-2016- June 2017).

Exclusion criteria: Pregnancy, breast feeding, of insane minded people, patients unable to communicate viz. unable to speak and retro viral patients.

Inclusion criteria: Of sane mind, patients can communicate; can give response, chronic illness, and whole patients under antibiotic treatment.

Results: A total of 450 patients who are in medical wards using antibiotics were taken in the study. Out of patients 450 patients 360 are willing to fill the questionnaire among these were 153 were female and 207 are male. The age wise distribution of patients is 18-60. The major complaints of patients were related to respiratory, orthopedics, neurology, trauma, surgery, viral patients using antibiotics are depicted in our study. The antibiotics used in the study were cephalosporin's, followed by fluoroquinolones, B-lactams, amino glycosides, tetracycline, and other antibiotics.

Discussion: Among 360 patients who are under antibiotic treatment, males 207(57.50%), female 153(42.50%), of age group 18 to 65 and all the patients using antibiotics in our study. The most common class of antibiotics prescribed in our study is cephalosporin's 198(55%) and from this the most commonly used drug is ceftriaxone 36% and cefotaxime 19%. The cephalosporin's are given mostly in intravenous and in some cases intramuscularly it is given.

Conclusions: This study concluded that the utilization, standard antibiotic prophylaxis was still not ensured. Standard antibiotic prophylaxis was still not ensured. The use of antibiotic and administration should be informed to the physician by clinical pharmacist. The adoption of an international standard and locally conformable guide lines of antibiotic use can help to resolve such problems.

Introduction:

Drug use evaluation sometimes referred to as drug utilization review, is a system of continuous, systematic, criteria based drug evaluation that ensures the appropriate use of drugs.^[4]

Antibiotics also called antibacterials, are a type of antimicrobial drug used in the treatment and prevention of bacterial infections. They may either kill or inhibit the growth of bacteria. Antibiotics are powerful medicines that fight bacterial infections.^[5] If used properly antibiotics can save lives. Over usage of antibiotics can lead to antibiotic resistance.^[6]

There are two classes which are mainly used they are Penicillin's and Cephalosporin's. Cephalosporin's and the closely related cephamycins and carbapenems, like the penicillin's, contain a beta-lactams chemical structure.^[4] The penicillin's are the oldest class of antibiotics and have a common chemical structure which they share with cephalosporin's. The beta-lactams antibiotics are generally bactericidal that is they kill bacteria rather than inhibiting growth. Antibiotics are the key drugs for treatment of infections and are among the most commonly prescribed drugs in general medical wards.^[7] About 28% of adults and elderly patients who are most susceptible to diseases due to under development of immune system). Several studies reported that 50% to 85% of children receive antibiotics in developed and developing countries prescribed by physicians.^[8]

Aims and Objectives: Main aim of this study is to evaluate and

assess the antibiotic prescribing pattern in medical wards of a tertiary care hospital.

To screen the antibiotics in general wards of hospitalized patients. To identify the prescribing pattern of antibiotics in general wards of in patients. To identify the drug use evaluation. To evaluate the use of antibiotics in a rational or irrational use. To indicate the prescription pattern of antibiotics to doctors of tertiary care hospital.

Materials and methods:

Study site: The study was done in a tertiary healthcare hospital (Karimnagar).

Study design (Method): This was a prospective observational study among 450 inpatients of a tertiary care hospital Karimnagar, Karimnagar dist, Telangana, India.

Study duration: The study was conducted from six months (January-September-2017).

Study procedure:

Nearly data of 360 patients were collected which include case history, past medical history, laboratory values, and drugs prescribed with their doses and frequency of administration were collected and evaluated the prescribing pattern and reason for the use of antibiotics were analysed in diseased patients.

Study materials:

The study is a questionnaire based study among 360 patients in a tertiary care hospital.

The classes of antibiotics prescribed in the hospital are recorded in the questionnaire.

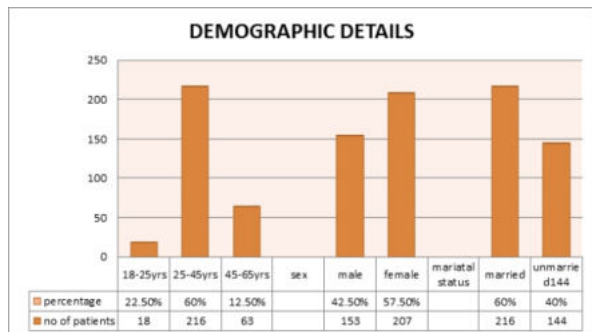
The reasons and conditions for antibiotics use were recorded.

Parameters for evaluation: The parameters included age, gender distribution, age of the patient, type of illness, type of anti-psychotic medication prescribed in generic form average no of drugs per prescription percentage of drugs , prescribed from National List of Essential Medications(NLEM) and injectables prescribed per day.

Exclusion criteria: Pregnant, lactating, unable to comply due to mental retardation, any systemic illness, unconsciousness and drug addiction were excluded from the study.

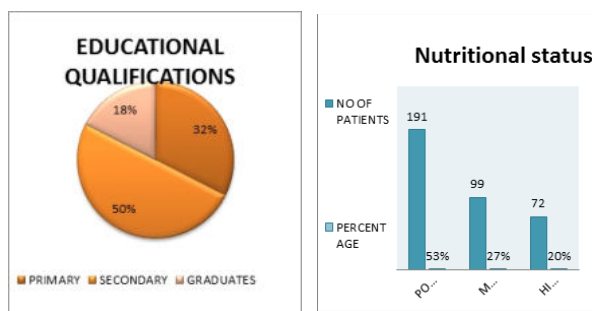
Results: A total of 450 patients who are in medical wards using antibiotics were taken in the study. Out of patients 450 patients 360 are willing to fill the questionnaire among these were 153 were female and 207 are male. The age wise distribution of patients is 18-60. The major complaints of patients were related to respiratory, orthopedics, neurology, trauma, surgery, viral patients using antibiotics are depicted in our study. The antibiotics used in the study were cephalosporin's, followed by floroquinolones, -lactams, amino glycosides, tetracycline, and other antibiotics.

Table: shows the demographic details of the patients with percentage.



The demographic details of a patients were of age 18-65 years, males were 42.50% and females of 57.50%, married were 60% and unmarried were 40%.

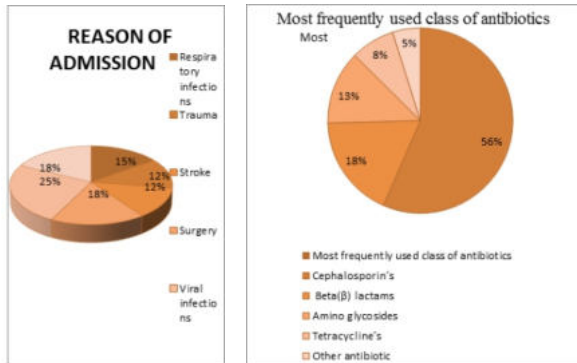
Table 2 & 3 shows the educational qualification and nutritional status of patients:



The educational status of the patients was mostly of tertiary 50%, and least was graduates of 18%.

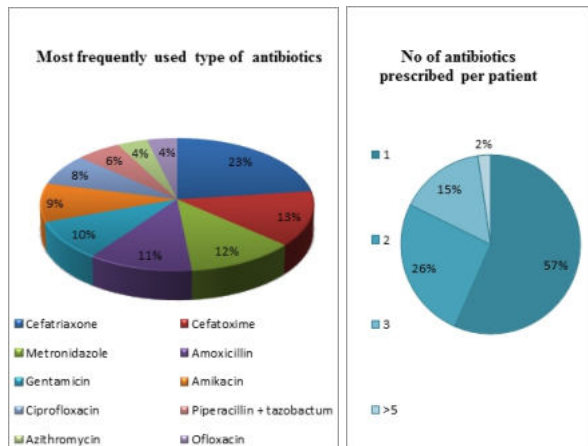
Nutritional status of the patients were mostly poor 53%, moderate were 27% and well nourished were 20% according to our study.

Table 4 & 5 shows reason for admission and frequently used antibiotics:



Reason of admission in the hospital is based on the following conditions. Most frequently used class of antibiotics is as given in the pie chart.

Table 6 & 7 Shows the most frequently used antibiotics and number of antibiotics prescribed per patient:



Most frequently used type of antibiotics and no of antibiotics prescribed patient is given in above pie chart.

DISCUSSION: Our study mainly discuss about the antibiotic evaluation in a tertiary care hospital in which the study mainly describes about the prescriptions pattern of antibiotics in medical wards. In which the average no patients using antibiotics based on the severity and conditions for infectious diseases and to increase the immunity of patient. Out of 360 patients 153(42.50%) males and 207 females (57.50%) and age is between 18 to 65 years and it is categorized into three groups 18 – 25 (18) 22.50%, 26-45 (216) 60% and 46 - 65 (63) 12.50%. and marital status 216 (60%) married and 144(40%) unmarried. The patients are of mainly tertiary 180 (50%) and nutritional were maximum poor of 191 (53%). The most of people admitted in the hospital due to viral infections 90(25%) mostly followed by surgeries, orthopedics, respiratory tract infections, stroke and trauma and most frequently used class of antibiotics were cephalosporin's (56%). Most frequently used antibiotic from cephalosporin class is ceftriaxone (23%) and cefotaxime (13%) Before using ceftriaxone, it is important to determine the susceptibility of the bacteria. In our study the maximum class of antibiotics used category is cephalosporin's in which it contain beta lactams which are bactericidal with minimal side effects, continued to be a mainstay of therapy of their broad spectrum of activity and clinical efficacy.

Conclusions: Our study concludes that in our hospital the usage of antibiotics are rational and the prescriptions are mainly condition based and selection of antibiotic is appropriate. Our study evaluated and assessed that it may be better to have hands of well-trained and highly specialized clinical pharmacist to prescribe antibiotics. Our great success will probably come from the efforts to enhance the awareness of the consequences of indiscriminate prescribing habits of antibiotics.

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