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Pharmacology

PRESCRIBING PATTERN OF DRUGS IN OUTPATIENT DEPARTMENT IN TERTIARY CARE HOSPITAL

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ABSTRACT **Aim:** The study was conducted to assess the prescribing behaviour for antimicrobials and various groups of drugs in tertiary care hospital in Puducherry. **Method:** Prescription audit was done. Total 500 prescriptions were analysed for sex wise distribution, no of patients for specific age group, antimicrobials prescribed in generic name, percentage of antibiotics, antacids, NSAIDs and multivitamins, among the prescribed drugs, groups of antibiotics, drugs prescribed from National List of Essential Medicines (2022), use of fixed drug combinations, injectable preparations if any. **Results:** Demographic analysis showed that out of 500 patients in OPD, most were female (53%) and in the age group between 41 to 60 years. In 500 number of prescriptions,9.96% of antibiotics were prescribed; fluoroquinolones (5.42%) were prescribed more from antibiotics followed by extended spectrum penicillin (1.64%).14.78%of antacids were prescribed; PPIs (11.28%) were prescribed more from antacids.21.63% of NSAIDs were prescribed.11.66% were prescribed in generic names,65.44% drugs were prescribed from National List of Essential Medicines (2022),15.88% of FDCs were prescribed,6.13% of injectable preparations were prescribed.**Conclusion:** The rational use of antimicrobial agents is one of the main contributors to control worldwide emergence of bacterial resistance, side effects and reduced cost of the treatment.

KEYWORDS : Antibiotics, resistance, prescription, rational, fixed dose combinations

INTRODUCTION

Antimicrobials are the most common drugs, used for various life threatening and trivial infections. But inappropriate and indiscriminate use of antimicrobials lead to the emergence of antibiotic resistant strains, treatment failure and increase in mortality and morbidity[1,2].

Antibiotic resistance stops an antibiotic from working effectively against bacterial meaning some infections may become very difficult to treat3.This narrowed the usage of drugs in a large scale which reduces the choices of prescribing the drugs by the physician to patient convenience and specific action of drugs.

At least 80 million antibiotic prescriptions each year are unnecessary, which makes improving antibiotic prescribing and use a national priority, according to the centres for disease control, explained the importance of the initiative in an era where antibiotic-resistant bacteria haunt an increasing number of hospitals[3].

To avoid this resistance, we should assess the prescribing behaviour and drug use patterns. The gold standard technique proposed by WHO is the drug use indicators to stimulate further questioning and to guide subsequent action in prescribing the drugs[4].

So, the present study was conducted to evaluate use of antimicrobial agents in tertiary care hospital, just as one of the measures to analyse and promote rational use of drugs so that adequate measures can be taken to prevent problem of antimicrobial resistance in the region.

MATERIALS AND METHODS

An observational study was conducted in outpatient department of Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry over a period of 2 months. Prescriptions of all the age groups were considered for analysis. The study was approved by the institutional ethics committee. A total 500 prescriptions were collected and analysed for demographic and gender distribution, number of antimicrobials among the prescribed drugs, groups of antimicrobials used, antimicrobials prescribed in generic name or brand name, use of fixed drug combinations (FDC) and their rationality. Result was expressed as percentage.

RESULTS

Total of 500 prescriptions are collected of outpatient department in tertiary care teaching hospital. Out of 500 prescriptions,53% were females and 47% were males.

Out of 500 prescriptions, age between 41-60 patients is more. The least is the age above 80 years.

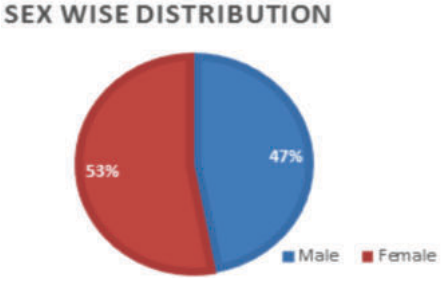

Fig 1 shows the percentage of sex wise distribution in 500 prescriptions collected

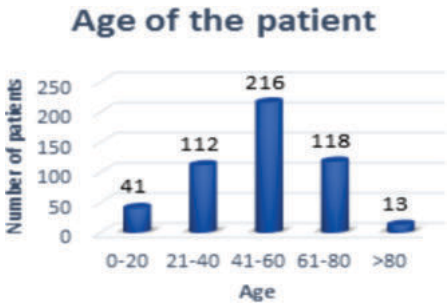

Fig 2 shows the age wise distribution of patients in 500 prescriptions collected

Percentage of antibiotics in total number of drugs prescribed is 9.96%.

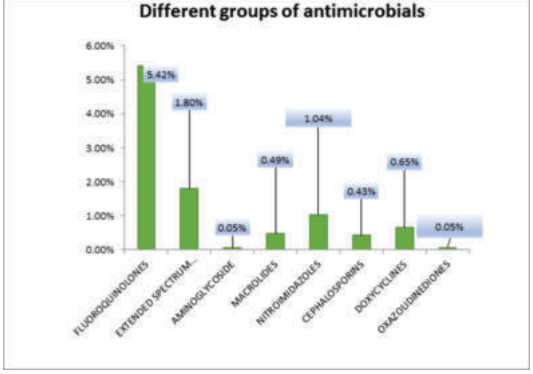

Fig 3 Shows The Percentage Of Different Types Of Antibiotics

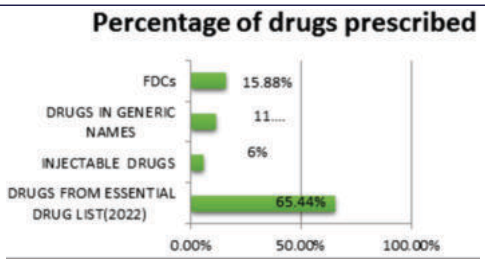

Fig 4 shows the percentage of drugs from essential drug list (2022), fixed dose combinations (FDCs), injectable drugs and drugs prescribed in generic names

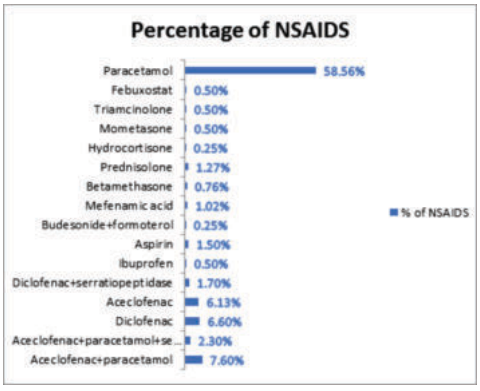

Fig 5 shows the percentage of different types of NSAIDs prescribed.

Out of 21.63% of NSAIDs, paracetamol is prescribed more. Fig 5 shows the percentage of different types of NSAIDs prescribed.

Percentage of antacids in total number of drugs prescribed is 14.78%. Out of 14.78%, different types of antacids were prescribed.

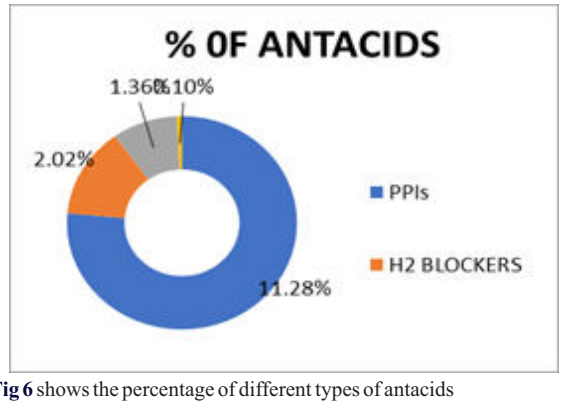

Fig 6 shows the percentage of different types of antacids

Table 1 shows the percentage of other groups of drugs.

OTHER DRUG GROUPS	PERCENTAGE
Antipsychotics	0.10
Antidiabetics	1.45
Antihypertensives	1.5
Multivitamins	9.3

These were the results obtained from the study.

DISCUSSION

Antimicrobial resistance is one of the major global preventable problems. The causes of antimicrobial resistance are unnecessary use, inappropriate doses, inadequate duration of therapy and irrational fixed dose drug combinations9,13. Hence this study was undertaken to improve the quality of medication and to promote the prescription of drugs.

Average number of drugs per person is an important index of prescription audit. Mean number of drugs per prescription should be kept as low as possible14. Higher figures (polypharmacy) always lead to increased risk of drug interaction, adverse effects, development of bacterial resistance, increased hospital cost[5,10]

A prescription should be prescribed rationally respective of the patient's needs and etiological factors of the diseases.

In this study, patient's whose age between 41-60 are high for getting the health facilities may be due to patient's lifestyle and general knowledge that aging will lead to acquiring of disease.

Out of 9.96% of antibiotics, quinolones (5.42%) were prescribed more antibiotics followed by extended spectrum penicillin (1.64%) which are less prescribed than the past due to its resistance in the community. In study conducted by Shirin Shamsi Jokandan et al3 cephalosporins was found to be prescribed more cephalosporins followed by quinolones. 14.78% of antacids were prescribed, proton pump inhibitors (11.28%) are prescribed enormously along with NSAIDs.In study conducted by Shirin Shamsi Jokandan et al3 antacids (17%) were prescribed which is more than the present study.

We found that 11.66% drugs were prescribed by generic name but it is less compared to the WHO prescribing indicators. But this is in contradiction to some previous studies where generic name drugs were commonly prescribed[6,7].

Generic drugs are cheaper than brand name drugs, it should be increased in future to reduce the burden of low economic status people and medicines at affordable price. In our study FDC were 15.88% but it is more in other study5.In NSAIDs, paracetamol was prescribed enormously because it is used as analgesics and antipyretics. 65.44% of drugs were prescribed from the National Essential Drugs List (2022), it shows the good prescribing behaviour followed by the physicians in tertiary care. It must be increased above 80% to prevent resistance and adverse effects of drugs in the community. Multivitamins (9%) were prescribed for their antioxidant's effects and placebo effect.6% of injectable preparations were prescribed.

Physicians must have a clear understanding ofrational therapeutic use of antibiotics. They must be aware of the prevalence of various pathogens and resistance patterns in their hospital and exercise good judgment in selection of the antibiotic regimens8,15 Irrationality can be addressed by use of guidelines, educational activities and surveillance at all level of health care11. So, measures should be taken to avoid the inappropriate use of antibiotics. Drug utilization review programme must be carried out to study the rational use of antimicrobials[12]

LIMITATIONS AND STRENGTH OF STUDY

As study conducted in single centre outcomes are not applicable to other health facility. Data was collected from medicine department on the basis of selection criteria which limits finding. Lack of local guidelines and evaluation of adherence to such guidelines was also a limitation to study. Different practitioner having different prescribing information and it was not comparable in each OPD units. As strength, outcomes help in understanding the trend as well as proper and rational use of antibiotics.

CONCLUSIONS

Timely prescription monitoring and auditing in health care facility helps in assessing the prescribing pattern as well as uses of drugs, and it also provide information regarding the prescribing practice trend and attitude of a practitioner. Multidisciplinary approach by practitioners, staffs, pharmacists and infection control committee promotes the rationality in drug use pattern. Diagnosis and culture sensitivity tests to antibiotics helps in selection of proper antibiotics according to patients need. Information about hospital guidelines, formulary and antibiotics policy should be provided and present at various departments for better outcomes.

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