

Evaluation of Prescribing Patterns Using WHO Indicators at Out Patient Department of A Private Hospital in Warangal

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Abstract: A cross sectional study was conducted in Out Patient Department of Primary Care Hospital in Warangal. 502 prescriptions were randomly collected over a period of one month and recorded over a 'prescribing indicator form'. The data was analyzed using WHO indicators. Average number of drugs per encounter was 3.45. Encounter with an antibiotic prescribed was 46.21%, with a FDC was 84.66%, with an injection prescribed was 7.76%. The most common group of drug prescribed was vitamins (19.1%) followed by Antiulcer (12.34%) Antimicrobials (11.78%), Analgesics (10.22%). The findings of this study revealed that drug utilization pattern was not optimal in accordance with the standard values of WHO prescribing patterns.

Keywords: Prescription pattern, Out patients, WHO indicators, Rational use of drugs, Essential Drug List

I. Introduction

The quality of prescribing medications is major determinant and plays crucial role in providing good health care and in the treatment of serious health conditions. The availability and affordability of good quality drugs and their rational use is needed for effective health care [1]. In 1985, World Health Organisation (WHO) defined that 'Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirement for an adequate period of time and at the lowest cost to them and their community'. Common irrational uses of drugs include over or under use of medication, high cost of drugs, more usage of injections and antibiotics, poly pharmacy, violation of standard treatment guidelines or not from Essential Drug List, usage of brands instead of generic names are the major problems of present-day medical practice. The consequences of these lead to ineffective treatment, development of resistance to antibiotics, adverse effects and economic burden on patients [2].

Out of the total health budget, one third of countries spent 30-40% on drugs, many of which prescribed irrationally. The GNP (gross national product) of these countries get almost doubled in every 16 years, however, their expenditure on drugs gets doubled in every 4 years [3]

Essential drugs offer a cost effective solution to many health problems in developing countries. The first model list of essential drug was published by WHO in 1977 and in 2002. WHO coined the term essential medicine as those medicine that satisfy the priority health care needs of the population. Essential medicines are not in access of 30% of population of World. In developing countries 60-80% of people do not have access to essential medicines this is due to low income and rest of the people have access to essential medicines receive wrong medication, inappropriate dosage [4]. Rational use of drugs is achieved if prescribers follow essential drug list and essential drugs are available on regular basis.

A study of prescription patterns is an important tool to determine rational drug therapy and maximize utilization of resources. To improve the overall drug use, especially in developing countries, international agencies like the World Health Organization (WHO) and the International Network for the rational use of drugs (INRUD) have applied themselves to evolve standard drug use indicators [5]. The components of core indicators are: prescribing indicator, patient indicator, and facility indicator. For the present study, we took the prescribing indicators which are as follows:

1. Average number of drugs per prescription
2. Percentage of drugs prescribed by generic names
3. Percentage of prescription with an injection prescribed
4. Percentage of prescription with an antibiotic prescribed
- 5 Percentage of drugs prescribed from essential drug list (EDL)

Studies in different countries evaluated the prescribing indicators in different health care settings. However the present study provides data which will be useful for comparison when in future any drug utilization study is carried out. The present study aimed at evaluation of prescribing indicators in the prescription of a private medical practitioner of primary health care centre in Warangal.

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II. Methods

Institutional ethics committee approval was obtained. A cross-sectional study was carried out for a period of one month in a private clinic providing the outpatient services with laboratory facilities and pharmacy. 502 prescriptions were randomly collected and were recorded over a WHO Prescribing Indicator Form. The data was analyzed to find out the prescribing pattern in the hospital using the WHO prescribing indicators.

WHO Prescribing Indicators [1]

1. Average number of drugs per encounter: Average, calculated by dividing the total number of different drug products prescribed, by the number of encounters surveyed. It is not relevant whether the patient actually received the drugs.
2. Percentage of drugs prescribed by generic name: Percentage, calculated by dividing the number of drugs prescribed by generic name, by the total number of drugs prescribed, multiplied by 100.
3. Percentage of encounters with an antibiotic prescribed: Percentage, calculated by dividing the number of patient encounters during which an antibiotic is prescribed, by the total number of encounters surveyed, multiplied by 100.
4. Percentage of encounters with an injection prescribed: Percentage, calculated by dividing the number of patient encounters during which an injection is prescribed, by the total number of encounters surveyed, multiplied by 100.
5. Percentage of drugs prescribed from essential drugs list or formulary: Percentage, calculated by dividing the number of products prescribed which are listed on the essential drugs list or local formulary (or which are equivalent to drugs on the list), by the total number of products prescribed, multiplied by 100

III. Results

A total of 502 prescriptions were randomly collected and analyzed. A total of 1735 drugs were prescribed [Table 1] Average number of drugs per encounter was 3.45. Drugs prescribed from essential drugs list (India) were 496 (28.58%). Drugs prescribed from essential drugs list (WHO) were 423 (24.3 %). Total number of prescriptions with an antibiotic was 232 (46.21%). Total number of prescriptions with an injection was 39 (7.76%) Total number of prescriptions with a FDC was 425 (84.66%).

Table 1: prescribing Indicators

Prescribing Indicators	No. (%)
Total number of prescriptions analyzed	502
Total number of drugs prescribed	1735
Average number of drugs per encounter*	3.45
Drugs prescribed by generic name*	1696(97.7%)
Drugs prescribed from essential drugs list (India)*	496(28.58)
Drugs prescribed from essential drugs list (WHO)*	423(24.3)
Total number of prescriptions with an antibiotic*	232(46.21)
Total number of prescriptions with an injection*	39(7.76)
Total number of prescriptions with a FDC	425(84.66)

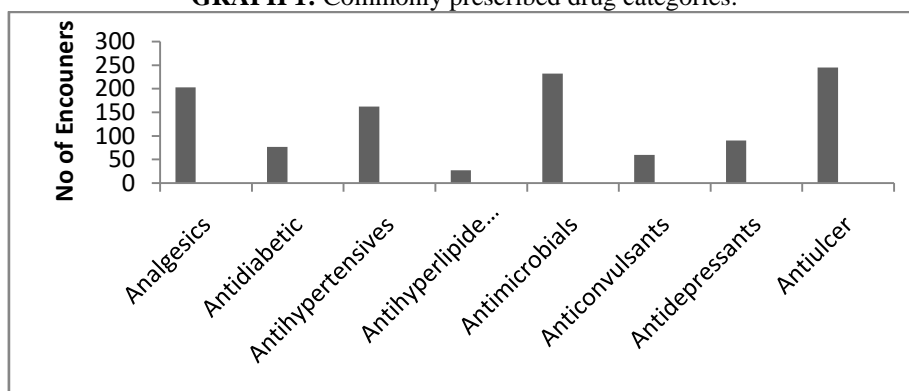
**WHO prescribing indicators*

The most common group of drugs prescribed was Multivitamins(19.1%), Antiulcer(14.1%) followed by Antimicrobials(13.3%) Analgesics(11.7%), Antidiabetic(4.4%), Antihypertensives(9.3%), Antihyperlipidemic(1.5%), Anticonvulsants(5.4%), Antidepressants(5.1%).

TABLE 2: Distribution of drugs according to the disease condition

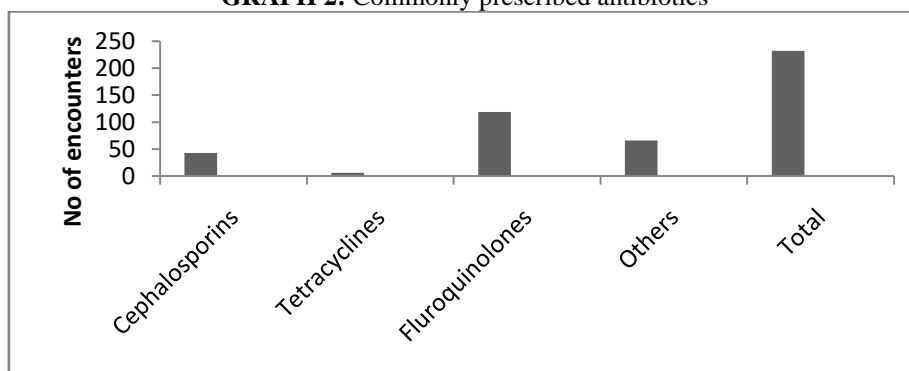
S.No	Disease	Number of drugs
1	Antiulcer	245
2	Antimicrobials	232
3	Analgesics	203
4	Antidiabetic	77
5	Antihypertensives	162
6	Antihyperlipidemic	27
7	Anticonvulsants	60
8	Antidepressants	90
9	MVT	332
10	Others	307
Total		1735

GRAPH 1: Commonly prescribed drug categories:



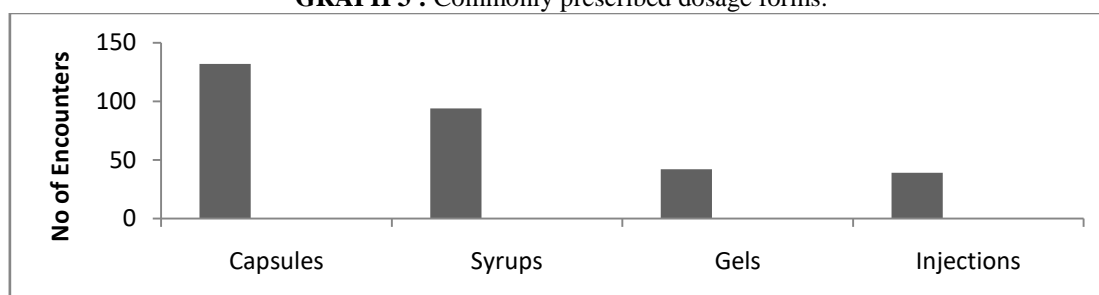
Among prescribed antimicrobials, Fluroquinolones (51.2%) are more followed by cephalosporins(18.5%), Tetracyclines(2.58%) and Others(28.4%)..

GRAPH 2: Commonly prescribed antibiotics



The most common group of dosage forms prescribed other than tablets were capsules(42.9%), Syrups(30.6%), Gels(13.68%) and injections(12.7%).

GRAPH 3 : Commonly prescribed dosage forms:



IV. Discussion

The average number of drugs prescribed per encounter was 3.45. It was less than that reported in most of the government setups across Indian cities. The more closet being Allahabad (3.52)[6] . It was more than that reported compared with Nagpur (3.40) [7] and Delhi (3.03)[8]. International studies report values ranging from 1.3 in Zimbabwe [9] to 4.51 in Pakistan.[10] As per WHO ,the average number of drugs per prescription should be 1.6-1.8. Our study reveals poly pharmacy which reflects the usual practice of private set up clinics.

The most common drug prescribed was vitamins (19.1%) followed by Antiulcer (12.34%) Antimicrobials (11.78%), Analgesics(10.22%). This shows that prescribers are more intended to prescribe vitamins , ulcer healing drugs, antimicrobials and analgesics commonly.

In this study, the percentage of prescriptions with antibiotics was 46.21%. According to WHO 15-25% of prescriptions with antibiotics is expected in most of the developing countries where infectious diseases are more prevalent [11]. Studies from other states (Tamil Nadu(55%), Madhya Pradesh(60.9%) which are highly reported

and New Delhi(29.9%), Uttar Pradesh(39.9%) of India are reported which are less compared to this study of prescriptions where antibiotics were prescribed[12] This phenomenon is very high in some of the developing countries like Pakistan (78%) [10], eastern Nepal (79.9%)[13]. Various studies from India also report a high rate ranging from 40- 80%[14].

The most common antibiotic category prescribed was Fluroquinolones(51.2%), followed by cephalosporins(18.5%), Tetracyclines (2.58%) and others(28.4%). The prescribers need to be extra cautious before prescribing any antibiotic to avoid unnecessary burden on patient and development of resistance.

The use of injection for treatment is accompanied with a variety of disadvantages including sepsis at administration, increased risk of tissue toxicity from local irritation, costly, difficulties in correcting the error, thus, WHO recommended that less than 10% prescription should include one or more injections.[15], but the percentage observed in the present study was 7.76% in the total sample.

Essential drug offers a cost-effective solution to many health problems in a developing country. They should be selected with due regard to disease prevalence, be affordable, with assured quality and be available in the appropriate dosage forms. In our study, the percentage of drugs prescribed from the essential drugs list of India was 28.5% which was low as compared to that reported by study conducted in pune [1] and essential drug list of WHO was only 24.3%. This may be due to lack of awareness of Essential Drug List..

V. Conclusion

The prescribing practice in this study was not satisfactory, as findings of this study revealed that drug utilization pattern was not optimal in accordance with the standard values of WHO prescribing patterns. The drug prescribing practices should be improved regardless of the level of health care delivery. The complete outcome of the prescribing desire will be successful only when the patient receives rational treatment for particular disease. The formularies in hospital especially of primary health care hospital, the prescribing should be based on the essential drugs and the prescribers should be encouraged to prescribe as per necessary and eliminate the unnecessary drugs which significantly lead to rational drug therapy. This study will act as feed back to the prescribers so as to create awareness about the rational use.

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