Research Paper Medical Science

Prospective Assessment of Drug Prescribing Among Patients Admitted in General Medicine Department of a Tertiary Care Hospital in Ujjain.

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ABSTRACT

A prospective observational study was conducted in Department of Pharmacology in collaboration with Department of Medicine, R. D. Gardi Medical College, Ujjain. The main aim of this study was to determine patterns of prescribing practices by using the WHO core prescribing indicators in management of indoor patient of medicine department. The study conducted in 809 patients, admitted in Medicine wards. Relevant data was collected in a Data Collection Form (DCF) from day one till patient was discharged. The entire 809 prescriptions encounter during the study period. A total of 5188 drugs were prescribed. There were more male 51.29% (n=415) compared to the female patients encounter noted 48.70% (n=394). More patients were from the age group 41-50 years 27.07% (i.e.94 males and 125 females). Average number of drugs per prescription was 6.41. Average duration of prescription was 6.29 days. Percentage of drugs prescribed by generic name was 42.94%. Percentage of encounter with an Antibiotic prescribed was 38.44%. Percentage of encounter with an Injectable prescribed was 52% which means out of 809 prescriptions, injectable were prescribed in 428. Percentage of drugs prescribed from Essential Medicine List was 71.10%. Percentage of drugs prescribed from WHO model List was 56.57%.

In our study some of the prescribing indicators showed deviation from the standard values recommended by WHO. This indicated some degree of irrational/inappropriate prescribing in the hospital, particularly polypharmacy, underuse of international non-proprietary names (generic names) and over prescription of antibiotics usage. So, there is an urgent need to develop standards of drug prescription and special attention needs to be given to the irrational prescribing in terms of polypharmacy and long duration.

KEYWORDS Prescribing, Polypharmacy, WHO core prescribing indicators.

INTRODUCTION -

Medicines play an important role in health care delivery and disease prevention. The availability and affordability of good quality drugs along with their rational use is needed for effective health care system. However, irrational drug use is very much prevalent, especially in the developing countries due to irrational prescribing, dispensing, and administration of medications[1]. This is evident from the World Health Organization (WHO) reports that more than half of all medicines are prescribed, dispensed or sold inappropriately and that half of all patients fail to take them correctly[2,3].

Prescribing is a crucial step in the drug use cycle. Prescribing should be rational in order to benefit the patient. Many survey methods have been used for this purpose. For instance, prescription surveys using WHO core prescribing indicators have been employed to describe prescribing patterns in healthcare facilities[4]. A number of factors influence the prescribing practices. These include prescriber-related factors, patient-related factors, industry-related factors and disease-related factors. Prescribing practices should be evaluated periodically so as to provide feedback to prescribers which in turn increases the quality of drug therapy, reduces wastage of resources and lowers risk for adverse drug reactions[5].

Hence, to give continuation to the effort of promoting Rational Use of Drugs (RUD) we have planned the present study. This study is aimed at assessing the drug prescribing trends in inpatients of medicine department and recommend changes to improve prescribing pattern, if any required.

AIMS & OBJECTIVES -

- To determine patterns of prescribing practices by using the WHO core prescribing indicators in management of indoor patient of medicine department of R. D. Gardi Medical College & Hospital.

MATERIALS AND METHODS -

A prospective observational study was conducted from May 2014 to June 2015 in Department of Pharmacology in collaboration with Department of Medicine R. D. Gardi Medical College & Hospital, a tertiary care rural based, teaching hospital at Ujjain, Madhya Pradesh. Confidentiality was ensured when handling patient's records. Data collection instruments did not bear participants names; instead study numbers were used. The prescription survey used stored patient's records; hence there were no direct benefits or risks to the patients whose records were sampled.

Study Population & Sample Size -

The study population included all prescriptions/ patient encounters from inpatient departments written between May 2014 and June 2015 which were received, processed and stored at the hospital's inpatient case records file of medicine department satisfying the inclusion & exclusion criteria. Total 809 prescription encounters were included in this study. Patients who were admitted to medicine ward, R. D. Gardi Medical college hospitalwere included in this study.

Inclusion and Exclusion Criterias -

Prescriptions/ patient encounters were included of ages (>18Yrs) and both sex in the study if they are not transfer in or out from ICU (intensive care unit) from medicine department of R. D. Gardi Medical College & Hospital.

Prescriptions/ patient encounters were excluded from the study if they were illegible/ faded.

Collection of Data -

The study was conducted for indoor patients. Relevant data

of all 809 patients was collected from wards. Each patient included in the study was followed up every day till patient was discharged from the ward and their case files were reviewed for gathering necessary information as per the Data Collection form. This data was then stored as Microsoft excel file and analysed.

Format of Analysis -
Data of all 809 patients were analysed for following parameters:-

(i) Patient details:
- Age and sex distribution- Patients of either sex were divided into six groups i.e. <20 years, 21-30 years, 31-40 years, 41-50 years, 51-60 years, >60 years.
- Distribution of diagnosis for which patients were admitted.

(ii) WHO prescribing indicators:
- Average number of drugs per encounter.
- Percentage of drugs prescribed by generic name.
- Percentage of encounters with an antibiotic prescribed.
- Percentage of encounters with an injection prescribed.
- Percentage of drugs prescribed from essential drugs list or formulary.

OBSERVATION AND RESULT -
The presentation of the results and their analysis is based on the collected data. The data were collected from Department of Medicine of R.D. Gardi Medical College & Hospital Ujjain during a period of 12 months (May 2014 to June 2015). A total of 809 prescriptions were observed during the study period. A total of 5188 drugs were prescribed. All the data was analysed for the following major parameters:-

Demographic Data -
Table 1 shows the frequency distribution of the demographic data with respect to gender and age group of total patients observed during study period.

Table 1: Age and sex wise distribution of total patient observed

Age Group	Male	Female	Total	Percentage
<20 years	20	18	38	4.6%
21-30 years	81	92	173	21.4%
31-40 years	94	79	173	21.4%
41-50 years	94	125	219	27.07%
51-60 years	91	65	156	19.28%
>60 years	61	51	112	13.84%
Total (Percentage)	**415 (51.29%)**	**394 (48.70%)**	**809**	**100%**

Table 2: Gender wise distribution of total patients

GENDER	PERCENTAGE	NUMBER (n=809)
MALE	51.29%	415
FEMALE	48.70%	394

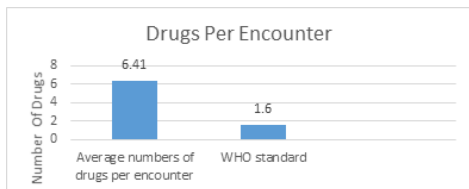
Table- 2, shows, there were more male 51.29% (n=415) compared to the female group 48.70% (n=394). More patients were from the age group 41-50 years 27% (i.e.94 males and 125 females). There were 23.08% patients from age group 21-30 years and the least from the age group <20 years 4.6% (i.e. 20 male and 18 female patients).

WHO Prescribing Indicators
Data of all the 809 patients was collected and analysed for the Prescribing Indicator. Total **5188** drugs were prescribed in **809** prescriptions. Average number of drugs per prescription was **6.41**. Average duration of prescription was **6.29** days. Percentage of drugs prescribed by generic name was 42.94%. Percentage of encounter with an Antibiotic prescribed was 38.44%. Percentage of encounter with an Injection prescribed was 52.90% which means out of 809 prescriptions, injectable were prescribed in 428. Percentage of drugs prescribed from National Essential Medicine List was 71.10%. Percentage of drugs prescribed from WHO model List was 56.57% (Table -3).

Table 3: Prescribing Indicators

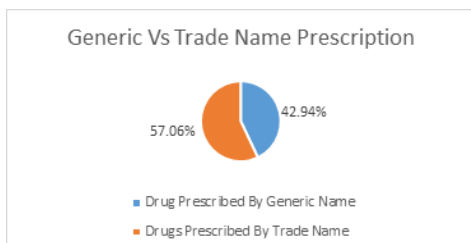
Prescribing Indicators	
Average numbers of drugs per encounter	6.41
Percentage of drugs prescribed by generic name	42.94%
Percentage of encounter with an Antibiotic prescribed	38.44%
Percentage of encounter with an Injection prescribed	52.90%
Percentage of drugs prescribed from Essential Medicine List	71.10%
Percentage of drugs prescribed from WHO model List	56.57%

Figure 3: Average number of drugs prescribed per encounter.



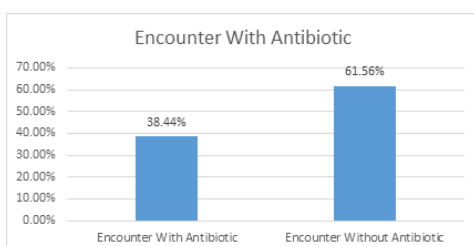
The WHO standard value for this indicator is 1.6 to 1.8[28].

Figure 4: Percentage of drugs prescribed by generic name



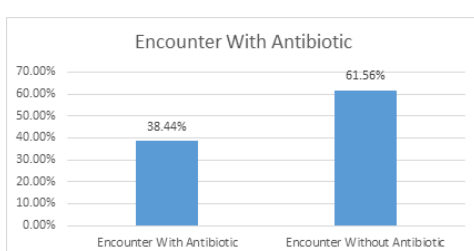
The WHO standard value for generic prescribing is 100%[28].

Figure 5: Percentage of encounter with Antibiotics prescribed



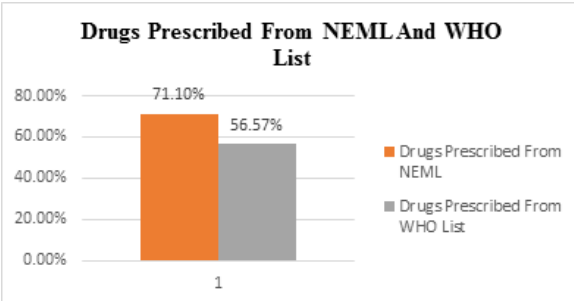
The WHO standard value for this indicator is 20 to 26.8%[28].

Figure 6: Percentage of encounter with Injectable prescribed



The WHO standard value for the indicator is 13.4 to 24.1%[28].

Figure 7: Drugs Prescribed from Essential Medicine List and WHO List



The WHO standard value for the indicator is 100%[28].

DISCUSSION & CONCLUSION -

Based on the results seen in this prospective observational study conducted from (May 2014 to June 2015), in Medicine Department R. D. Gardi Medical College, Ujjain, a total of 809 prescriptions were observed during the study period. A total of 5188 drugs were prescribed.

The average number of drugs per prescription is an important parameter while doing a prescription audit. Average number of drugs per prescription was 6.41. The mean number of drugs per prescription was more than as per WHO recommended values [6], this showing remarkable degree of polypharmacy.

Prescribing using proprietary brand names was widely practiced in the medicine department. Combination of drugs were almost exclusively prescribed using proprietary brand names.

There is very low (42.94%) generic prescription of the drugs; our findings regarding generic prescribing are similar to those of several studies carried out in India [7, 8-10,11-13]. These values at the tertiary level health facility could reflect the dominating influence of pharmaceutical companies. Thus, generic prescribing is to be encouraged as it works out to be cheaper for the patient and reduce possibility of drug interactions significantly.

The antibiotics were prescribed in 38.44% of encounters. Thus the antibiotics prescribed in this study was less than the other two studies compared [7,13] but values were still above the WHO standard value of 20% - 26% [6] .

The use of injections (52.90% of encounters) in our study was very high compared to that observed [7,11,13]. The higher number of encounters with an antibiotic or injection prescribed is a warning sign and has to be discouraged.

Out of total 5188 drugs, 71.10% of drugs were prescribed from the National Essential Medicine List. In a previous study at primary healthcare facilities, the percentage of drugs prescribed from the Essential drug list varied from 66.9% [7].

To conclude the study some of the prescribing indicators showed deviation from the standard values recommended by WHO. This indicated some degree of irrational/inappropriate prescribing in the hospital, particularly polypharmacy, underuse of international non-proprietary names (generic names), over prescription of antibiotics usage and incomplete prescription writing.

The percentage of prescribing by generic name was low and efforts to encourage prescribing by generic name should be initiated. The drugs were prescribed for a relatively longer duration of time. The percentage of encounters with an antibiotic and an injection prescribed was high; which has to be discouraged. There is an urgent need to develop standards of drug prescription and develop ways and means to ensure that they are adhered to. Special attention needs to be given to the irrational prescribing in terms of polypharmacy and long duration. This could be done by encouraging the prescribers to attend regular continuing medical education (CME), so as to update their knowledge. Continuing medical education regarding appropriate use of drugs , knowledge of its potential adverse effects and standard prescription guidelines will play pivotal role in rational prescription of drugs All these measures would go a long way in providing optimal, low cost, and effective medicines to the patients.

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