PRESCRIBING TRENDS IN A TEACHING HOSPITAL IN NEPAL

Ghosh R*, Neogi J N*, Srivastava B S*, Sen P*

ABSTRACT

Prescriptions of the patients at the time of admission to the college of Medical Sciences (CMS), Bharatpur, Nepal were collected for a period of 6 months to study the prescribing pattern in a teaching hospital. The prescriptions were subjected to critical evaluation using WHO basic drug use indicators. The average number of drugs per prescription was 4.34. Percentage of drugs prescribed by generic name and percentage of fixed drug combinations (FDCs) were 22.57 and 17.49 respectively. The percentage of prescriptions containing antimicrobials (72.05%) and injections (66.66%) were relatively more in our study. Percentage of drugs prescribed from the WHO essential drug list and the Nepal essential drug list were 41.76% and 38.20% respectively. The most commonly used group of drugs were antimicrobials (32.27%), followed by analgesics (11.85%) and drugs for acid-peptic disorders (10.72%). The present drug utilization study is to give feedbacks to the prescribers, so as to create awareness about the rational use of drugs.

INTRODUCTION

The irrational and inappropriate use of drugs is a well documented universal problem and is a major concern for both in developed and developing countries, as has been recognized by the World Health Organization (WHO)¹. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, and higher costs². "It is such a waste of resources, which a developing country like ours can ill-afford"³. The common irrational prescribing patterns include polypharmacy, the use of drugs of poor therapeutic value, the use of drugs that are not related to the diagnosis, the unnecessary use of potent drugs, the inappropriate use of antimicrobials and use of unnecessary expensive drugs. Prescriptions and drug utilization patterns need to be evaluated from time to time so as to increase the therapeutic efficacy, decrease the adverse effects and to provide feedback to the prescribers to create awareness towards rational use of drugs^{4,5,6}. Keeping all these facts in consideration, the present study has been planned to define the pattern of drug use in a tertiary care hospital in Nepal.

MATERIALS AND METHODS

Prescriptions were collected during the period of January 2003 to June 2003 from the admitted patients in different departments of College of Medical Sciences (CMS), Bharatpur, Nepal. The prescriptions at the time of admission to the hospital were included into the study. The drugs prescribed during follow-up or at the time of discharge were not taken into consideration. All prescriptions were entered into a specially designed proforma as given in Kathmandu-University undergraduate curriculum⁷ to record the required information of the prescriptions. Each prescription was subjected to critical evaluation using WHO guidelines as described in accordance with "how to investigate drug use in health facilities?"⁸. WHO model list of essential drugs (2002)⁹ and National list of essential drugs, Nepal (2002)¹⁰ were used to find out the percentage of drugs and fixed-dose drug combinations from essential drug lists. The following prescribing indicators were assessed to evaluate the drug-prescribing pattern in this tertiary health care center in Nepal.

* College of Medical Sciences, Bharatpur, Chitwan, Nepal.

Address for correspondence : Dr. Ranjib Ghosh
College of Medical Sciences, Bharatpur, Nepal
Email: ghoshranjib@rediffmail.com

1. Average number of drugs per prescription.
2. Percentage of drugs prescribed by generic name.
3. Percentage of prescriptions with antimicrobial(s) prescribed.
4. Percentage of prescriptions with injection(s) prescribed.
5. Percentage of drugs prescribed from essential drug list.

In addition to the above WHO prescribing indicators, percentage of fixed drug combinations from essential drug list and percentage of different groups of drugs prescribed were also analyzed to find out the rational use of fixed dose drug combinations and utilization pattern of different groups of drugs in this teaching hospital.

RESULTS

Two hundred and four (204) prescriptions were evaluated from the admitted patients of CMS, Bharatpur, Nepal. The average

number of drugs per prescription was 4.34. The different prescribing indicators and distribution of different categories of drugs prescribed are shown in table-I and table-II respectively.

The study revealed that:

1. Average number of drugs per prescription was 4.34.
2. Percentage of drugs prescribed by generic name was 22.57.
3. Drugs prescribed from essential drug lists of WHO and Nepal were 41.76% and 38.20% respectively.
4. Percentage of fixed dose-drug combinations was 17.49 and only 20% and 6.40% of them were approved by WHO and Nepal essential drug lists respectively.
5. Among the different categories of drugs, antimicrobials (32.27%) were the most commonly prescribed agents, followed by analgesics (11.85%) and drugs for acid-peptic disorders (10.72%).

Table I : Analysis of Prescriptions from College of Medical Sciences, Bharatpur, Nepal

Prescribing Indicators	
Total number of prescriptions analyzed	204
Total number of medicines prescribed	886
Average number of drugs/prescription	4.34
Percentage prescribed as generic name	22.57
Percentage of prescriptions with antimicrobial(s)	72.05
Percentage of prescriptions with injection(s)	66.66
Percentage of drugs from WHO essential drug list	41.76
Percentage of drugs from Nepal essential drug list	38.20
Percentage of fixed-dose drug combinations (FDCs)	17.49
Percentage of FDCs approved by WHO essential drug list	20
Percentage of FDCs approved by Nepal essential drug list	6.40

Table II : Distribution of Different Categories of Drugs in the Prescriptions Collected from CMS, Bharatpur, Nepal

Categories of Drugs	Total	Percentage
Antimicrobials	286	32.27
Analgesics	105	11.85
Drugs for acid-peptic disorders	95	10.72
Drugs for cardiovascular disorders	74	8.35
Multivitamin preparations	57	6.43
Drugs for psychiatric & neurological disorders	42	4.74
Topical formulations	32	3.61
Hormones	31	3.49
Cough and cold remedies	16	1.80
Antihistaminics	16	1.80
Antioxidants	15	1.69
Prokinetic and antiemetics	12	1.35
Laxatives	12	1.35
Bronchodilators	11	1.24
Antispasmodics	10	1.12
Others	72	8.12

DISCUSSION

The different prescribing indicators and the distribution of different categories of drugs in the prescriptions analyzed in this study provided an insight into the prescribing behavior of the physicians in a tertiary care hospital in Nepal.

Average numbers of drugs per prescription in this study were 4.34. When the patient is critically ill and diagnosis is not confirmed at the time of admission to the tertiary care hospital, empirical polypharmacy may be required. But it is always preferable to keep the mean number of drugs per prescription as low as possible to reduce the cost of treatment and to minimize the adverse effects & drug interactions.

Use of generic names in prescription eliminate the chance of duplication of drug products and also reduce the cost of the patient.¹¹ Only 2% of the drugs were prescribed by the generic names in a study from Allahabad, India¹² and from JIPMER, Pondicherry, India it was 43.9%¹³. Das BP *et al* described in their study that none of the non-steroidal anti-inflammatory drugs was prescribed by generic name in orthopedic department of B.P. Koirala Institute of Health Sciences, Nepal¹⁴. A discussion with the clinicians revealed that they preferred to write brand names of drugs of repute rather than by generic names, since it may result in purchase of drugs of uncertain bioavailability.

The percentage of prescriptions containing antimicrobial (s) were high (72.05%) in our study in comparison with studies conducted in other countries as reported by WHO.⁸ The common causes of morbidity in Nepal are gastrointestinal and respiratory tract infections like enteric fever and tuberculosis and also malnutrition.¹⁵ Probably this could be the reason for high incidence of use of antimicrobials in hospitalized patients in our study. Still, considering the cost effectiveness and serious problems of development of resistance, their indiscriminate use should be restricted.

In our present study, the percentage of prescriptions containing injections were 66.6% which was almost similar to data from Manipal Teaching Hospital, Pokhara (54.52%)¹⁶, considering the fact that most of the hospitalized patients in a tertiary care hospital are critically ill and most of the time require parenteral therapy. But the data was much higher than that in Sri Lanka, where only 1% of the prescribed drugs in outpatient department were injectable.¹⁷ Apart from the high cost of parenteral therapy, the other different disadvantages of such therapy should also be considered. Of special importance, with the increasing rate of HIV positive cases of Nepal, the potential therapy should be further restricted.¹⁸

In our study, the percentage of drugs from essential drug lists of WHO and Nepal were 41.76% & 38.20% respectively. The use of fixed-dose drug combinations was 17.49% which is lower than the study conducted by Victor CG *et al* (30%) in Brazil in 1982.¹⁹ There were only 20% and 6.40% of fixed drug combinations that were prescribed from the essential drug lists of WHO & Nepal respectively. Use of drugs from the essential drug list should be promoted for optimal use of limited financial resources, to have acceptable safety and to satisfy the health needs of the majority of the population.²⁰

The most commonly used group drugs in this study were antimicrobials (32.27%) followed by analgesics (11.85%) and drugs for acid-peptic disorders (10.72%) and these findings are almost similar to the findings of the study of JIPMER, Pondicherry, India.¹³

CONCLUSION

Irrational use of drugs is a common occurrence throughout the world.²¹ There were fewer number of drugs per prescription, fewer fixed drug combinations, more drugs from essential drug list and frequent generic prescriptions in our study as compared to other studies.^{12,14,16} Still, it is preferable to keep the mean number of drugs per prescription as low as possible, since higher figures always lead to an increased risk of drug interactions, affect patients' compliance, and increase hospital-patient costs. Further, prescribing drugs more in generic names may help in cheaper treatment. Irrational prescribing can be avoided by sticking to the ideal prescription writing^{22,23} following the p-drug and p-treatment concept,²⁴ and by consulting the WHO and National essential drugs lists. This initial audit report is to give feedback to the prescribers and such periodical audit of drug prescribing is required to rationalize the prescribing practices.

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Prof. Pushpa Raj Sharma
President

Email: nepas@healthnet.org.np

Dr. Rita Singh
Organizing Secretary