Drug prescription and dispensing practices at a tertiary care hospital in Goa, India

SB Pirankar, AM Ferreira, F S Vaz*, SG Perni, MS Kulkarni, D Dsouza

Department of Preventive and Social Medicine, Goa Medical College, Bambolim, Goa, 403202.

ABSTRACT

An attempt was made to study the drug prescription and dispensing practices at a tertiary care hospital. The prescription and dispensing practices at the hospital were studied using the WHO drug use core prescribing and patient care indicators. Predesigned formats were used to collect the data. Average number of drugs per prescription, percentage of antibiotics, percentage of injections, percentage under generic names, and percentage from essential drug list were the prescribing indicators while average consultation and dispensing times, percentage of drugs dispensed, patient's knowledge of correct dosage and percentage of drugs adequately labelled were the patient care indicators studied. A database was created in Microsoft Excel spreadsheet and each of these indicators was calculated using standard formulae. Average number of drugs per prescription was 2.88. Around 3.80 percent of drugs prescribed were antibiotics, 2.50 percent of drugs were injections. About 81 percent of drugs were prescribed with generic names and 83.88 percent of drugs were from essential list drugs. Average consultation time by the doctor was 16.10 min. Average dispensing time was 7.20 min. Only 88.46% of the prescribed drugs were dispensed, while 84% of the drugs were adequately labelled. Around 76% of the patients knew the correct dosages of the drugs prescribed to them. Periodic appraisal of prescribing practices not only helps in promotion of rational drug prescribing practices but also in rational drug use policy at the health facility.

INTRODUCTION

World Health Organisation defines rational drug prescribing as wherein patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time and at the lowest cost to them and their community [1]. Irrational drug usage in India includes poly pharmacy, inappropriate prescription, over prescription, non-compliance to clinical guidelines, short dispensing time and poor communication [2]. More than 50% of all medicines worldwide are prescribed, dispensed or sold inappropriately and 50% of patients fail to take them correctly [3].

WHO 'drug use core indicators' provide a simple tool for quick and reliable assessment of pharmaceutical use in health care [4]. These indicators have already been extensively tested in twelve countries [5] moreover these indicators do not need any adaptation and they are recommended for inclusion in any drug use study [4].

Rational use of medicines is fundamental to the provision of universal access to adequate health care and satisfaction of health related human rights. It is therefore crucial that measures should be taken to promote the rational use of medicines. The purpose of this study was to encourage rational and efficient use of drugs.

MATERIAL AND METHODS

A total of 775 drug prescriptions were randomly selected from the out-patient pharmacy of a tertiary care hospital in Goa, India. The WHO drug use core indicators for out-patient facilities [1] were used to study the prescribing and dispensing practices.

Two categories of drug use indicators were studied, prescribing indicators and patient care indicators. Prescribing indicators included: average number of drugs per prescription, percentage of drugs prescribed under generic names, percentage of drugs prescribed containing an antibiotic, percentage of drugs prescribed in injection form and percentage of drugs from essential drugs formulary.

Patient care indicators consisted of: average consultation time, average dispensing time, percentage of drugs actually dispensed, percentage of drugs adequately labelled and patient's knowledge of correct dosage. Data collected with the help of a predesigned format was entered in a MS Excel spreadsheet to prepare the database. Each of these indicators was calculated using standard formulae [1].

RESULTS

A sample of 775 randomly selected prescriptions was studied wherein a cumulative total of 2238 drugs were prescribed in these

Table 1: Drug use core Drug Indicators at the Tertiary Care Hospital

Drug use core Drug Indicator	Value
Prescribing indicators	
Percentage of drugs under generic names (%)	81%
Percentage of drugs containing an antibiotic (%)	3.80%
Percentage of drugs in form of injections (%)	2.50%
Percentage of drugs from essential drug formulary (%)	83.88%
Average number of drugs per prescription	2.88
Patient care indicators	
Average time of consultation (min)	16.10
Average dispensing time (min)	7.20
Percentage of drugs dispensed (%)	88.46%
Percentage of drugs adequately labelled (%)	84%
Percentage knowledge of drug dosage (%)	76%

prescriptions. The average number of drugs prescribed by the doctor per prescription was found to be 2.88 (Table 1).

The percentage of drugs prescribed under generic name was 81% while 83.88% of drugs prescribed were from Essential Drug List (EDL). Around 3.8% of drug prescribed were containing an antibiotic while the percentage of drugs prescribed in form of injections was found to be only 2.5%. As far as the patient care indicators were concerned, the average consultation time was found to be 16.1 minutes while average time taken to dispense the prescribed drugs was around 7.2 min (Table 1).

It was also found that only around 88.46% of the prescribed drugs were actually dispensed. Only 76% of the patients knew the correct dosage of the drugs prescribed to them. Around 84% of the drugs dispensed were adequately labelled while 16% of the drugs were inappropriately labelled.

DISCUSSION

The average number of drugs prescribed by the doctor per prescription was found to be 2.88. The optimum number of drugs to be prescribed per prescription is considered to be two or less [1] Sarkar AP et al [6] in their study in West Bengal, India reported 2.94 as the average number of drugs prescribed per prescription, while it was 2.5 drugs per prescription in Nagpur [7]. Use of generic names and prescribing from essential drug list was high which points to fairly good and rational prescription practice. In the West Bengal study [6] only 38.2% of the drugs were prescribed under generic names while this proportion was only 7.4% in Nagpur [7]. Rational use of drugs demands that less than 30% of the drugs prescribed should be antibiotics [1]. In the present study only 3.8% of drug prescribed were containing an antibiotic while the percentage of drugs prescribed in form of injections was found to be only 2.5%. Around 18.68% of the drugs prescribed were antibiotics in West Bengal[6] while in Nagpur [7] almost 79% of the prescribed drugs were antibiotics and 1.6% of the drugs were in injectable form. In the present study the average consultation time was found to be 16.1 minutes while average time taken to dispense the prescribed drugs was around 7.2 min.

Consultation time of 2.3 min was reported by Gelders SFAM in Malawi [8] while Bimo [9] reported consultation time of 6.3 min in Nigeria. Ghimire S et al [10] reported dispensing time of 52 seconds in Nepal. Compared to other studies both consultation and dispensing times were high in the present study which is a positive finding as far as patient care indicators are concerned.

In our study we found that around 88.46% of the prescribed drugs were dispensed, around 76% of the patients knew the correct dosage of the drugs prescribed to them and around 84% of

the drugs dispensed were adequately labelled.

Kafle KK et al. [11] in their study in Nepal found that around 83% of the prescribed drugs were dispensed while 92.2% of the prescribed drugs were found to be dispensed in Nepal [10]. Gelders SFAM [8] found that only 27% of patients had correct knowledge of drug dosages prescribed to them. Ghimire S et al [10] reported that 81% of the patients had correct knowledge of drug dosages while only 1.4% of the drugs dispensed were adequately labelled.

CONCLUSION

Positive findings were observed as far as use of generic names, prescription of drugs from essential drug list, use of antibiotics and injectables, consultation and dispensing time and correct labelling were concerned although there is still scope from improvement. Such periodic appraisals of prescribing and dispensing practices at a health facility not only help in promotion of rational drug prescribing practices but also in development of rational drug use policies at the health facility.

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