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DRUG PRESCRIPTION PATTERN IN A TERTIARY HEALTH CENTRE IN IMPHAL- A CROSS SECTIONAL STUDY.

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ABSTRACT

A cross sectional study was carried out on drug prescription pattern in a tertiary health centre in Imphal. Altogether 220 prescriptions were analysed based on the prescribing indicator formulated by the World Health Organisation (WHO) for improvement in rational drug use. Prescribing indicators like average number of drugs per encounter, percentage of drugs prescribed by generic name, percentage of encounter with an antibiotic prescribed, percentage of encounters with an injection prescribed, percentage of drugs prescribed from essential drugs list (EDL) were studied. The present study showed a trend towards irrational prescribing.

KEYWORDS: Rational drug use, Prescribing indicators, Essential drugs list,Polypharmacy

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INTRODUCTION

Rational use of drugs is defined by the World Health Organisation (WHO) as "patients receive medicines appropriate to their clinical need, in doses that meet their own individual requirements for an adequate period of time, at the cost lowest to them and their community"[1]. The rationality of prescribing pattern is of utmost importance. Unfortunately, in the real world, prescribing pattern do not always conform to these criteria and can be classified as "Pathological Prescribing". WHO estimates that more than half of all medicines are prescribed inappropriately. This has led to unsafe treatment, exacerbation of the disease, health hazards, economic burden on the patients, wastage of resources and ultimately the psycho social impact on patients such as when they come to believe that there is a "pill for every ill". Examples of irrational use of medicines include: polypharmacy, inadequate dosage, use of antimicrobials even for non-bacterial infections, excessive use of injections when oral forms are available etc.Polypharmacy is the most common irrational practise[2]. The World Health Organisation (WHO) has formulated a set of "core prescribing indicators" for improvement in rational drug use. It includes prescribing indicators, patient care indicators and facility indicators[3]. The present study was taken up based on the prescribing indicator. Prescriptions and drug utilisation 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]. Moreover no studies was carried out in this tertiary health care centre in Imphal, hence the present study was taken up to obtain data on the drug prescription pattern for promoting rational drug use.

MATERIALS AND METHODS

A cross sectional study was conducted in inpatient department of medicine, surgery, orthopaedics, obstetrics and gynaecology of a tertiary care teaching hospital during the month of April. A total of 220 prescriptions were studied. Simple random sampling was applied for collection of prescriptions from patients. Information was collected from case file on day 1 of every newly admitted case. The following prescribing parameters were studied[3].

1. Average number of drugs per encounter: 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: Percentage, calculated by dividing the number of products prescribed which are listed on the essential drugs list by the total number of products multiplied by 100.

RESULTS

A total of 220 prescriptions were randomly collected and analyzed. A total of 1126 drugs were prescribed [Table 1]. Average number of drugs per encounter was 5.12. Drugs prescribed by generic name constitute 3.64%. Drugs prescribed from essential drugs list (India) was 45.5%. Drugs

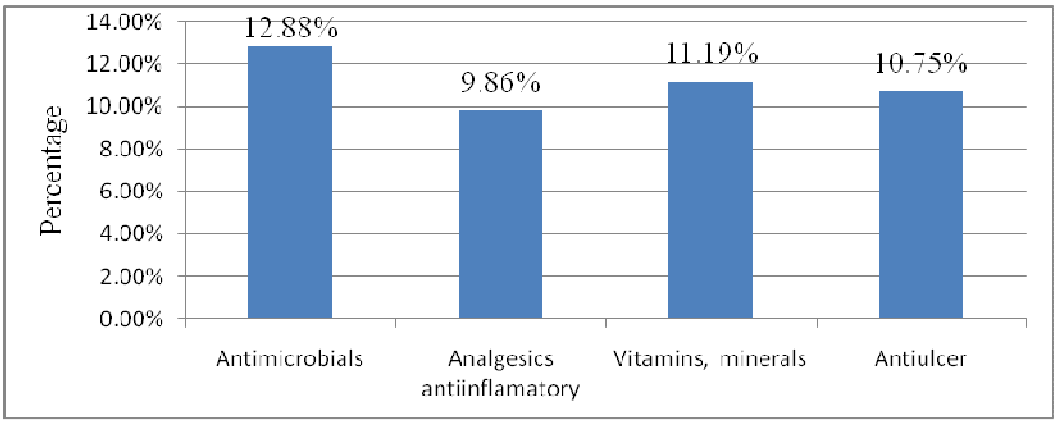
prescribed from essential drugs list (WHO) was 38.9%. Total number of prescriptions with an antibiotic was 57.73%. Total number of prescriptions with an injection was 60.4% prescriptions contained 5 or more drugs.

Table 1

PRESCRIBING INDICATORS	NUMBERS (%)
Total no of prescription analyzed	220
Total no of drugs prescribed	1126
Average no of drugs per encounter	5.12
Drugs prescribed by generic name	41 (3.64%)
Total no of prescription with an antibiotic	127 (57.73%)
Total no of prescription with an injection	130 (59.1%)
Drugs prescribed from essential drugs list (WHO)	438 (38.9%)
Drugs prescribed from essential drugs list (India)	512 (45.5%)

The most common group of drug prescribed was antimicrobials (12. 88%), followed by vitamins and minerals (11%) , antiulcer drugs (10.75%) and analgesics, anti-inflammatory drugs (9.86%).

Graph1



The most common antimicrobial prescribed was Ceftriaxone(68%).The most common analgesic prescribed was diclofenac(42%).The most common antiulcer drug prescribed was pantoprazole (72%).

DISCUSSION

The average number of drugs prescribed was 5.12. This is very much higher than the recommended limit of 2.0[3].This is also higher than the studies conducted in Meerut (4.22)[6], Nagpur (3.4)[7], Delhi (3)[8]. The study reflects polypharmacy. This increase in the number of average drugs per prescription may increase the risk of drug interactions, which may lead to adverse drug reactions, decrease adherence to drug regimens and unnecessary drug expenses. A larger number of drugs are prescribed for chronic clinical conditions like hypertension and diabetes. In this case the patients can require more drugs than as stated by WHO. In such cases polypharmacy can be acceptable[9]. An astounding 60.4% of prescriptions had 5 or more drugs, the maximum being ten drugs in a prescription. This may also be due to treatment based on symptoms and not on diagnosis.The percentage of drugs prescribed by generic name was 3.64% in the study which is less

than that reported in studies conducted in other parts of India[10]. The use of generic names is recommended by WHO and regarded as an important factor for promoting RUD. The use of a generic name contributes to cost reduction and provides more alternatives for drug purchases[11]. The percentage of prescriptions with antibiotics was 57.73%. According to WHO 15- 25% of prescriptions with antibiotics is expected in most of the developing countries where infectious diseases are more prevalent[3]. This figure is very high in some of the developing countries like Pakistan (78%) [12], eastern Nepal (79.9%) [13]. High rate ranging from 40-80% has also been reported from other Indian studies[14]. 59.1% of prescriptions encountered contain one or more injection. This is quite high in comparison to other studies6. 30% of the total prescriptions had two or more injections. Minimum use of injections is preferred and this reduces the risk of infection through parenteral route and cost incurred in therapy. The percentage of drugs prescribed from national EDL was 45.5%, that of WHO model list of essential drugs was 38.9%. The possible reason for this lower value though comparable with other Indian studies[15] could be the prescriber's lack of awareness of essential drug concepts. However, it should not be ignored that essential drugs are specially meant for primary health care delivery system, whereas this study was conducted in a tertiary care hospital.

CONCLUSION

The present study showed a trend towards irrational prescribing. The average number of drugs per prescription was significantly high than that recommended by WHO, generic prescribing was low, antibiotics and injections prescribed were considerably high. Prescribing from EDL, WHO model list of essential drugs was also low. There is a need to improve the standard of prescription patterns. This can also be done by providing hospital doctors with a standard treatment guidelines, essential drug list (EDL) and rational antibiotic policy.

CONFLICT OF INTEREST: conflict of interest declared None.

REFERENCES

1. The rational use of drugs: report of the conference of experts. Geneva, World Health Organisation, (1985).
2. Hogerzeil HV. Promoting rational prescribing, an international perspective. Br J Clin Pharmacol, 39:1-6, (1995).
3. WHO. How to investigate drug use in health facilities: selected drug use indicators, Geneva: World Health Organisation; 1993, WHO /DAP, 1:1-87, (1993).
4. Devi DP, George J. Diabetic Nephropathy, prescription trends in tertiary care. Indian J Pharm Sci, 70:374-8, (2008).
5. Rishi RK, Sangeeta S, Surendra K, Tailang M.Prescription audit: experience in Garhwal (Uttaranchal). Ind Trop Doct, 33:26-9, (2003)
6. Abidi A, Gupta S, Kansal S, Ramgopal. Prescription auditing and drug utilization pattern in a tertiary care teaching hospital of western UP. Int J Basic Clin Pharmacol, 1(3); 184-90, (2012).
7. Thawani VR, Motghare VM, Parwar MD, Pagare A. Drug utilisation in indoor ANC patients of Govt. college Hospital, Nagpur. J Academy of Hospital administration, 9:49-51, (1997).
8. Biswas NR, Jindal S, Siddiqui MM. Patterns of prescription and drug use in ophthalmology in tertiary hospital in Delhi. Br J Clin Pharmacol, 51: 267-9, (2001).
9. Chobanian AV, Bakris GL, Black HR, Cushamn WC, Green LA, Izzo JL et al. The seventh report of the Joint National Committee on prevention, detection, evaluation and treatment of high blood

pressure: the JNC 7 report. J Am Med Assoc, 289:156-72, (2003).
10. Karande S, Sankhe P, Kulkarni M. Patterns of prescription and drug dispensing. Indian J pediatr, 72:117-21, (2005).
11. Acurcio FA, Perini E, Magalhaes SM, Terairo IG, Vieira Filho JM, Coutinho KE et al. Analysis of medical prescriptions dispensed at health centres in Belo Horizonte, Minas Gerais, Brazil. Cad Saude Publica, 20: 72-9, (2009).
12. Das N, Khan AN, Budini ZAA, Baloch H. Prescribing practices of consultants at Karachi, Pakistan, 51:74-7, (2001).
13. Rauniar GP, Shahanas MS, Das BP, Naga Rani MA. A prospective study of dental pattern and drug utilisation at the dental department of a tertiary care teaching hospital in eastern Nepal. J Nepal Medical Assoc, 40:6-11, (2001).
14. Kumari Indira KS, SJ Chandy, Jayaseelan L, Kumar R, Suresh S. Antimicrobial prescription patterns for common acute infections in some rural and urban health facilities of India. Indian J Med Res, 128: 165-71, (2008).
15. Hazra A, Tripathi SK, Alam MS. Prescribing and dispensing activities at the health facilities of a non-governmental organisation. Natl Med J India, 13: 177-82, (2000).