Drug Prescription Practices among Paediatric Patients in Yavatmal, Central India

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Short Communication

Introduction

The rational use of drugs requires the patient to receive medicines appropriate to their needs in doses that meet their individual requirement for adequate period of time and at lowest cost. Rational use of drugs forms the corner stone of successful implementation of rational use of medicines(1). Medically inappropriate, ineffective, non-economical use of pharmaceutical product is commonly observed in health care system throughout the world and especially so in developing countries (2). Inappropriate prescription not only increases the cost of medical treatment but also increases the morbidity and mortality. Third world population spends 30-40% of their total health budget on drugs many of which are prescribed irrationally. These countries double their expenditure on drugs every 4 years while GNP double every of 16 years. (3). Thus there is an urgent need to ensure that the patients are always given evidence based cost effective & rational treatment. Children constitute 40% of Indian population. Infant and children are the most vulnerable group of population suffers from frequent but usually non serious illness. Most of these are self limiting (4) and treated not only inappropriately but also reporting to polypharmacy (5). Compared to adult medicines drug use in paediatrics is not extensively researched and range of licensed drug in appropriate dose form is limited (6). One significant study has shown that potentially harmful medication error can be three times more common in paediatric population than in adults (7). Prescriber and consumer are flooded with vast array of pharmaceutical preparation with innumerable trade names, available often at unaffordable prices. Considering these facts, the present study was planned to understand the prescription pattern of paediatric patient in Yavatmal, Central India.

Aim and Objectives-

- To study the drug prescribing pattern in paediatric patients.

Material and Methods

A cross-sectional study was conducted at Yavatmal including paediatric age group prescriptions below 12 yrs for the duration of 2 months. Ethical clearance was accorded by Institutional ethical committee before start of study. List of all the pharmacy was obtained from chemist and drug association of Yavatmal city and one pharmacy in each of the four division of Yavatmal City was then selected by random number table. At the start of study, pharmacists of each of the four selected pharmacies were informed regarding the nature of study. Referral prescriptions and prescriptions of seriously ill patient were excluded from study. The names of patient and prescribing doctors were kept confidential throughout the study. Predesigned, pretested semi-structure proforma was used for data collection. All the drugs prescribed were recorded including each drug dosage, route, dosage form, frequency of administration, indication for which the drug was prescribed and duration of therapy. Necessary data were obtained from a total of 238 prescriptions and analyzed for (1) Number of medicines per prescription. (2) Medicines prescribed by official names. (3) Essentiality status of medicines. (4) Percentage of prescription with antibiotic drugs.(5) Common pediatric problems. Data entered in Microsoft Excel sheet and analysed with the help of statistical software SPSS Version 16. Mean and percentage were used for statistical analysis.

Results

A total of 814 drugs were prescribed in 238 prescriptions during the study period. The average number of drugs per prescription was 3.42 and range being 1 to 8. The prescribing indicators like average number of drugs, drugs prescribed by generic name, essentiality of drug are shown in the Table 1. Of the total 814 medicine formulations prescribed, 770 (94.59%) were prescribed by brand names and remaining 44 (5.41%) by generic

name. A total of 665(81.69%) drugs were included in the model list of essential medicine whereas the remaining 149(18.31%) drugs could be constructed as non-essential. 186 (78.15%) children were prescribed one or more antibiotics during the study period. Table 2 shows the most commonly prescribed classes of drugs. Antibiotics were most commonly prescribed 203 (24.93%), followed by antipyretic and anti-inflammatory drugs 158 (19.41%). Multivitamins constitute 122(14.98%) of drugs. The most commonly used individual drugs are shown in Table 3. Cefpodoxime (29.06%) and Paracetamol (86.70%) were most commonly used drugs from each of the class. It was also noted that out of 238 prescriptions studied, 124 (51.26%) had at least one multivitamin, iron or tonic prescribed. The rationale behind adding of such multivitamin or other tonic was not justified. In paediatric practice, dose of the drug is calculated taking into consideration the age & weight of the patient, but in our study we found that weight of the patient was not mentioned in 68.90%. The top two clinical conditions for which drugs were prescribed included fever, cough and cold 162 (60.07%) followed by gastrointestinal tract infection 51(21.42%). In total of 162 prescriptions presenting with fever, cough & cold, we found that 74 (45.67%) children were prescribed with antibiotics. Out of total 238 prescriptions, prescriptions prescribed by MBBS doctors, MD(pediatric), DCH were 34(14.28%), 194(81.51%), 10(4.20%) respectively.

Discussion

In the present study, on an average 3.42 medicines were prescribed per patient as compared to 2.3 and 2.22 from Spain (8) and Karnataka(9) respectively. Prakash *et al*,(11), Ansari *et al*,(3) and Nazima *et al*(12) found this number to be 5.86, 5.05 and 3.72 medicines per prescription respectively in their studies. We also found that more than half of patients were given three or more medicines. Thus it is evident that the polypharmacy and over prescribing are common in India. Various reasons can account for this situations like ambiguity in diagnosis in a patient presenting with multiple symptoms, demand for quick relief from patient; availability of non-essential and irrational drug combination and aggressive medicine promotion (3). Correct diagnosis of a disease and its management with medicines, constitute an important aspect of patient care which is even more important in case of paediatric patients. For this, it is very prudent to study the prescribing practice in paediatric patient in order to find out lacunae, if any and suggest remedial measures to overcome the same. The findings of our study highlight the continuing crisis of irrational drug prescribing in the country. Given that the vast majority of drug purchase costs are borne out of pocket, the ultimate burden of this irrational drug use falls entirely on the patient. More medicines increase the risk of drug interactions, adversely affect the patient compliance and hike the cost of treatment. In this study, 5.41% of the medicines were prescribed by their generic names .Mohanty BK in Rajamundry found that 30.70% medicines were prescribed by generic names. While Janaki R in Karnataka reported that 96% medicines were prescribed by generic name. Prescribing medicines by generic name avoid the confusion and makes therapy rational and cheaper. Moreover in the teaching institutions world over, in textbooks, in scientific journals and in the research publications, medicines are always mentioned by generic names. Despite this, most doctors prescribe the medicines by their brand names. The reason for this could be (1) tradition (2) aggressive medicine promotion (3) availability of multi-ingredient fixed dose drug combination. In this study, 81.69% of the medicines could be rated as essential. Naziya Y. Mirza *et al* found 77.61% medicines prescribed were essential. Whereas 57.70% of essential medicines were prescribed in a study conducted by Mohanty BK *et al*. The most commonly used drug group was antibiotic. 78.10% children were prescribed an antimicrobial and antimicorbials constituted 24.93% of the total drugs. The excessive use of antimicrobials is similar to the reports from the study carried in Karnataka. Antimicrobial drug use rates are highest for children (14). Thus, there is an ample scope of improving the prescribing pattern by keeping the number of medicines as low as possible, prescribing medicines by generic names, using medicines appropriately after selecting and consciously keeping the cost of therapy low.

Table 1: Prescribing pattern

Indicator	Result
Average no of drugs per encounter	3.42%
Drugs prescribed by generic name	5.41%
Essential drugs	81.69%
Anti microbials prescribed	78.15%

Table 2: Commonly prescribed classes of drugs

Drug Class	No.	%
Antibiotic	203	78.10%
Antipyretic & Anti-inflammatory	158	19.41%
Antihistaminic	112	13.75%
Multivitamin	122	14.98%
Bronchodialator	30	12.60%

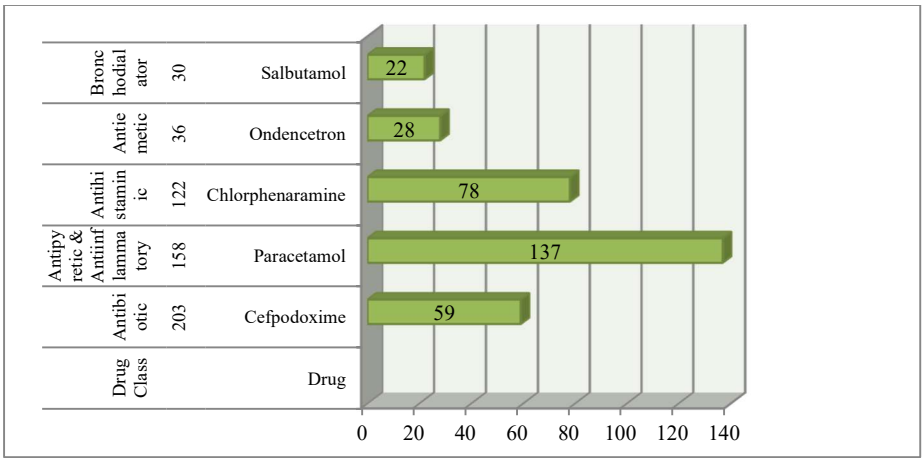

Fig 1: *Commonly prescribed individual drugs*

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