

# Drug prescribing pattern in the outpatient department of pediatrics in Ghaziabad, Uttar Pradesh

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## ABSTRACT

This is to study the drug prescribing patterns by consultants in pediatrics outpatient department of Santosh Medical College & Hospital in Ghaziabad, Uttar Pradesh. 258 prescriptions were collected from the hospital's pharmacy over 2 months. Total 668 drugs were prescribed at an average of 2.59 drugs per encounter. 63.6% of prescriptions have antibiotics while 43.4 % have fixed dose combinations. Generic drugs were 42.5% of total drugs prescribed while FDCs and antibiotics are 18.1% and 25.7% respectively. 294 drugs (44.1%) were essential out of all drugs prescribed. This study reveals the prescription trends, and indicates possible areas of improvement in prescription practice.

## KEY WORDS

Fixed Dose Combinations, Generic, Prescription, Rational

## INTRODUCTION

Drugs prescribing pattern study is the study of drugs prescribed by the physicians. Such studies are helpful in exploring the commonly used groups of drugs, commonly used drugs in each group, drugs prescribed by generic or brand names. It can be said that drug prescribing pattern studies can provide guidelines for establishing rational use of drugs. The introduction of the Core drug use indicators (CDUIs) following the collaborative work by the members of the International Network for Rational Use of Drugs (INRUD) and the Drug Action Programme -WHO (DAP-WHO) regarded as one of the most notable achievements in the orchestrated effort at promoting rational use of drugs. These indicators are highly standardized, do not need national adaptation and provide a simple tool for quickly and reliably assessing a few critical aspect of drug use in primary health care setup.<sup>[1]</sup>

The National Health Policy 2002 of India,<sup>[2]</sup> also gives thrust on rational use of drugs within the allopathic system along with increased access to systems of traditional medicine. For proper drug use, accurate diagnosis, rational drug prescribing and patient compliance are important criteria. The impact of irrational use of drugs can be seen in many ways like reduction in the quality of drug therapy, wastage of resources, increased costs of treatment, increased risk of adverse drug reactions, emergence of drug resistance, and ultimately the psychosocial impacts on patients such as when they come to believe that there is "a pill for every ill".<sup>[3]</sup>

Our focus was mainly on the content of the prescription. In particular, we wished to study the quality of the prescription in terms of the types and number of medicines prescribed by doctors.

## MATERIALS AND METHODS

The study was carried out at the Santosh Medical hospital, a tertiary care hospital attached to the Santosh Medical College and University. This prospective hospital based study was carried out in April & May 2010.

New patients of either sex attending the Pediatrics outpatient department (OPD) of SMCH during the study period were approached at the pharmacy shop. The outpatient department of the hospital is open from 8AM to 4 PM on all days except Sundays. The data was collected on two days every week which were selected randomly. The permission to conduct the study was taken from the Superintendent of the hospital. The prescriptions were photographed by a digital camera at the pharmacy shop. These prescriptions were assessed for drug prescribing patterns. The prescriber doctor was kept unaware of the procedure. A total of 258 prescriptions were analyzed.

An assessment of total number of drugs prescribed in the prescriptions collected during the study was made. Proportion of drugs prescribed by generic and proprietary names, number of fixed dose combinations and the drugs belonging to various groups was described.

The information was recorded in the proforma. Data collection form was designed and used to record data and information on the prescribed drugs in the health facility. The data analysis was carried out manually. The data was expressed as percentage, mean and total numbers.

## RESULT

The total number of drugs prescribed was 668 in 258 prescriptions (Table 1). The average number of drugs per encounter was 2.59. There were 4 prescriptions without any drugs prescribed. Only 42.5% drugs were prescribed by generic names which constitute 284 of the total drugs (Table 1). Fixed Dose Combinations (FDCs) accounted for 121 of 668 drugs (18.1%) (Table 1). Percentage of prescriptions with FDCs was 43.4 (Table 1). Among the different categories of FDCs antimicrobials, cold and cough remedies followed by multi-vitamins preparation were the most commonly prescribed FDCs. Only 294 drugs were prescribed from Essential Medicine List (EML) out of a total of 668 drugs (Table 1).

The groups of drugs commonly prescribed were antimicrobial agents, anti-inflammatory, multivitamins and antihistaminic. The most frequently prescribed individual drugs from the aforementioned groups were amoxycillin, paracetamol, multivitamin preparation, chlorpheniramine in that order.

At least one antimicrobial agent was prescribed in 164 of the 258 prescriptions (63.6%) (Table 2). Antimicrobial agents were the most commonly prescribed group of drugs and accounted for 172 of the 668 drugs prescribed (19.26%). The most commonly prescribed group of antimicrobials were antibiotics and of these Penicillins were the most common, followed by Cephalosporines, Macrolides. The most commonly prescribed individual antibiotics was amoxicillin followed by Fixed dose combination of Amoxycillin and clavulanic acid. Other commonly prescribed antibiotics were cefixime, azithromycin in that order. All the antimicrobial prescribed were oral only and none was in parenteral form.

## DISCUSSION

Total number of drugs prescribed in studied 258 outpatient prescriptions was 668 indicating mean number of drugs per encounter as 2.59. The trend of polypharmacy (58.55%) in our study is also comparable.<sup>[4-6]</sup>

The mean number of drugs per prescription should be as low as possible since higher figures increase the risk of drug interaction, risk of bacterial resistance, non-compliance and cost. As per WHO, the average number of drug per prescription should be 1.6 to 1.8.<sup>[7]</sup> An older study by Sharif SI,<sup>[8]</sup> records more than 2 drugs as polypharmacy. This compares very well with the reports from a hospital in Sion Mumbai (Karande) (2.9),<sup>[9]</sup> from Lucknow (2.6).<sup>[10]</sup>

Only 42.5% of drugs in our study were prescribed by generic name (Table 1). Sarkar *et al.* had observed that 24.4% of drugs were prescribed by generic name.<sup>[11]</sup> In previous studies, in other locations the percentage prescribed by generic name ranged from 38% to 51%.<sup>[12-13]</sup> The comparatively low percentage of drugs prescribed by generic names in our study is a matter of concern and the reasons for these needs to be looked into. Low generic prescription of the drugs could reflect the dominating influence of pharmaceutical companies. Our findings are similar to that of various studies carried out in India and the neighboring countries.<sup>[4-6]</sup>

The percentage of fixed dose combinations in prescriptions is another important indicator of rationality of drug prescription. FDCs accounted for 121 (18.1%) of total of 668 drugs prescribed (Table 1). These figures are less than those from Uttaranchal india (59%)<sup>[13]</sup> and Nepal (47%).<sup>[14]</sup> The FDCs were usually prescribed by brand name and this may be another factor responsible for the low percentage of drugs prescribed by generic names.

The percentage of drugs prescribed from the essential drug list is also an indicator of rationality of drug prescribing. In our study only 294 (44.1%) drugs were prescribed from Essential Medicine List (EML) out of a total of 668 drugs (Table 1). In a study by Karande,<sup>[9]</sup> in Mumbai it was found that most of the drugs prescribed i.e. 90.3% (1293/1432) conformed to the WHO tenth revised model list of essential drugs. In other reports quoted here the percentage is much less, Maini,<sup>[15]</sup> (23%), Rehan,<sup>[16]</sup> (18.5%). The good reports of Karande *et al.*,<sup>[9]</sup> may be indication of the presence of facility indicators like presence of essential drug list or formulary and availability of key drugs in the dispensing pharmacy.

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**Table 1: Distribution of Drugs**

<b>Groups</b>	<b>Number of drugs</b>	<b>Percentage</b>
Generic drugs	284	42.5
Fixed Dose Combinations	121	18.1
Essential drugs	294	44.1
Antibiotics	172	25.7
Vitamins/tonics	68	10.2
<b>Total</b>	<b>668</b>	-

**Table 2: Details of prescriptions**

<b>Details</b>	<b>Number of Prescriptions</b>	<b>Percentage</b>
Fixed Dose Combinations	112	43.4
Antibiotics	164	63.6
Vitamins/ tonic	68	26.4
<b>Total</b>	<b>258</b>	-