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Original Research Article

Evaluation of the Format, Prescribing Pattern and Rationality of Prescriptions of the Patients Attending Outpatient Department of a Tertiary Care Hospital of Western Uttar Pradesh, India

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Abstract:

Objective: The World Health Organization (WHO) recommends that reasonable drug use be followed on a worldwide scale. However, there is a paucity of information from developing nations like India considering the prescriptions' correctness and their appropriate use. In order to analyze the format, prescribing patterns, and rationale of prescriptions of patients attending Outpatient Department of a tertiary care hospital in western Uttar Pradesh (India), it was decided to conduct the current study.

Methods: Photographs of the patient's prescriptions, meeting eligibility requirements, and visiting outpatient departments of various specialties facilities of Chatrapati Shivaji Subharti Hospital, Meerut were taken. These prescriptions were analysed using WHO Core Prescription Indicators.

Results: Generic names were prescribed for 276 (46%) patients. 171 (28.5%) patients received antibiotic prescriptions. The most often given antibiotic was amoxicillin while most common Fixed Dose Combination (FDC) was amoxicillin-clavulanic acid, which was typically prescribed under a brand name (Augmentin). 72 (12.0%) patients received prescriptions for injections.

Conclusion: The majority of the study's metrics fell beyond the WHO's recommended range for prescribing indicators. In order to enhance the nation's prescription medication prescribing patterns and the standard of written prescriptions, an efficient intervention programme, such as training, was advised.

Keywords: prescription pattern, antibiotics prescription rate, antimicrobial resistance

Introduction

Analysing prescription patterns is crucial for ensuring that drugs are used appropriately. The most frequent factor contributing to the worldwide inappropriate use of pharmaceuticals is irrational prescribing.[1] Without making a firm assessment of the medication prescribing patterns and the event rate, irrational prescribing cannot be controlled. In pharmacoepidemiology, prescription research plays a crucial role in revealing the scope and character of medication exposure.[2] The National List of Essential Medicines (NLEM), fixed-dose combinations (FDCs), and medications from the NLEM are among the medications that are commonly used in prescription research, according to the World Health Organization (WHO). This is done in accordance with accepted national standards.[3] Drug utilisation studies with a primary focus on the responsible use of medications by populations are known as prescription pattern monitoring studies. "According to the definition of rational use of medicines, patients receive pharmaceuticals that are appropriate for their clinical needs, given to them for an adequate period of time, at the lowest cost to them and their community, and in doses that fulfil those needs."[4] Studies on drug prescribing patterns can offer recommendations for establishing the reasonable use of pharmaceuticals. One of the most significant accomplishments in the coordinated effort to promote rational use of drugs is the introduction of the Core Drug Use Indicators (CDUIs) as a result of the collaborative work by the members of the International Network for Rational Use of Drugs (INRUD) and the Drug Action

Programme - WHO (DAP-WHO). These highly standardised indicators don't require national adaptation and offer a straightforward method for swiftly and accurately determining a few crucial aspects of drug use in a primary healthcare setting.[5]

The WHO and India's National Health Policy have both emphasised the use of critical medications that are prescribed by their generic names in the treatment of ailments. The importance of prescription monitoring studies has been emphasised in bridging the gaps between evidence-based medicine, pharmacovigilance, pharmacoeconomics, and rational drug use.[6] In order to improve the standard of patient care and encourage the sensible use of medications, it is currently crucial in India to carry out studies on the prescribing habits in each state.

The craft of writing a prescription is crucial to the nation's health care system. To identify any gaps in prescription writing, prescription research is required. It is important to identify typical errors made while writing prescriptions for medications. These mistakes could result from the prescription's missing some important details. This can involve leaving out information such as dosage, frequency, and delivery method, duration of the medication, specific instructions, and cautions, as well as not informing the patient with any necessary follow-up tests or other investigations conducted prior to follow-up. Additionally, mistakes in commission may include prescribing too many medications, using antibiotics needlessly, prescribing injectable forms inappropriately, or choosing expensive medications when less expensive options are available. The other mistakes made in commission such as choosing medications when they are not necessary, prescription pharmaceuticals that can lead to more negative drug responses (ADRs), prescribing drugs that cause hazardous drug interactions, and using FDCs irrationally, among others may be there. Since information about precise diagnoses and signs and symptoms is frequently not documented, the focus of the majority of prescription audits focus more on omission than commission errors. As a result, it is challenging to assess the logic of recommended medications.[6,7]

Accurate diagnosis, sensible drug prescription, and patient compliance are crucial components of proper drug use. The negative effects of irrational drug use include reduced efficacy of drug therapy, resource waste, increased costs of care, increased risk of adverse drug reactions, development of drug resistance, and, in the end, psychosocial effects on patients, such as when they start to think there is "a pill for every ill."[8]

In order to assess the prescribing behavior, and rationale of prescriptions for patients attending the outpatient department of a tertiary care hospital in western Uttar Pradesh (India), the present study was designed.

Material and Methods

Study Design

This study was carried out at the Chatrapati Shivaji Subharti Hospital (CSSH), in Meerut, India. It was cross-sectional, observational, and prospective study.

Study Period: 1 month

Sample Size: 600 prescriptions

Study Population

All patients who meet the inclusion criteria for the study and are seen by one of CSSH's many outpatient patient departments, such as General Medicine, General Surgery, Dermatology, Obstetrics & Gynaecology, Opthalmology, ENT, Orthopaedics, etc.

Inclusion Criteria

1. Patients of both sexes as well as transgender people.
2. 18 years of age and older.
3. Patients from the outpatient department.

Exclusion Criteria

1. Breastfeeding and pregnancy.
2. Patients admitted to the CSSH in Meerut.
3. Patients visiting the ER, ICU, or CCU.

Before collecting the prescriptions, permission from Ethics Committee of Subharti Medical College and the relevant departments was obtained. The prescriptions of patients who visit the previously chosen department's OPDs were photographed. Patient's prescriptions were be examined based on our inclusion and exclusion criteria. The accepted prescriptions were subjected to the WHO core drug use indicators. For the sake of determining the necessary parameters, each prescription was treated as a single patient contact. Regardless of comorbidities, prescriptions for patients who visited the medical OPD and received outpatient treatment for their illnesses were included. Age, gender, diagnosis, and the recommended treatment, all of which were listed in the prescription were collected as demographic data.

The WHO core drug use indicators

1. Prescribing indicators

- Average number of drugs per prescription
- Percentage of drugs prescribed by generic name

- Percentage of prescriptions containing antimicrobial agents (antibiotics)
- Percentage of injections per prescription.
- Percentage of drugs prescribed from the Essential Drug List.

2. To evaluate the rationality of the prescriptions of the patients attending OPD of the CSSH, Meerut.

Statistical Method

Using Microsoft Excel, the collected data was compiled and displayed as descriptive statistics. Version 16.0 of SPSS for Windows is SPSS version 16. Chicago: SPSS, Inc. was used to analyze the data.

Results

Table 1: Distribution Of Patients

	Mean ± SD
Age	41.29±16.46
Number of drugs prescribed	4.02±3.14
Gender (M/F), n(%)	270/330(45.0/55.0)

Data from 600 prescriptions from various departments was gathered. 270 (45%) prescriptions for men and 330 (55%) for women were written. The average number of medications prescribed was 4.02 ± 3.14, and the prescriber's signature was written on each prescription.

Generic names were prescribed for 276 (46%) patients. 171(28.5%) patients received antibiotic prescriptions. The most often given antibiotic was amoxicillin while most common FDC used was amoxicillin-clavulanic acid, which was typically prescribed under a brand name (Augmentin). 72 (12.0%) patients received prescriptions for injections. Apart from antibiotics, the most commonly given medications were antacids and multivitamins. The most popular analgesic that doctors recommended was paracetamol.

The most often recommended medicine classes included antimicrobials, anti-inflammatory, multivitamins, and antihistamines. Amoxyclav, paracetamol, multivitamin preparations, and chlorphenaramine maleate in that order were the pharmaceuticals from the aforementioned classes that were most frequently administered as single medications.

In 198 prescriptions, at least one antimicrobial medication was recommended. Antibacterials were the most frequently prescribed class of antimicrobials, and Penicillins were the most popular, followed by Cephalosporines and Macrolides. Amoxicillin was the sole antibiotic that was most frequently prescribed, followed by a fixed-dose combination of amoxicillin and clavulanic acid. Cefixime and azithromycin, in that sequence, were two more antibiotics that were frequently administered.

Table 2: Distribution of Drugs

	Yes		**No**	
Groups	**Number**	**%**	**Number**	**%**
Generic Drugs	276	46	324	54
FDC	291	48.5	309	51.5
Essential Drugs	465	77.5	135	22.5
Antibiotics	171	28.5	429	71.5
Others	513	85.5	87	14.5
No. of Injections	72	12.0	528	88.0

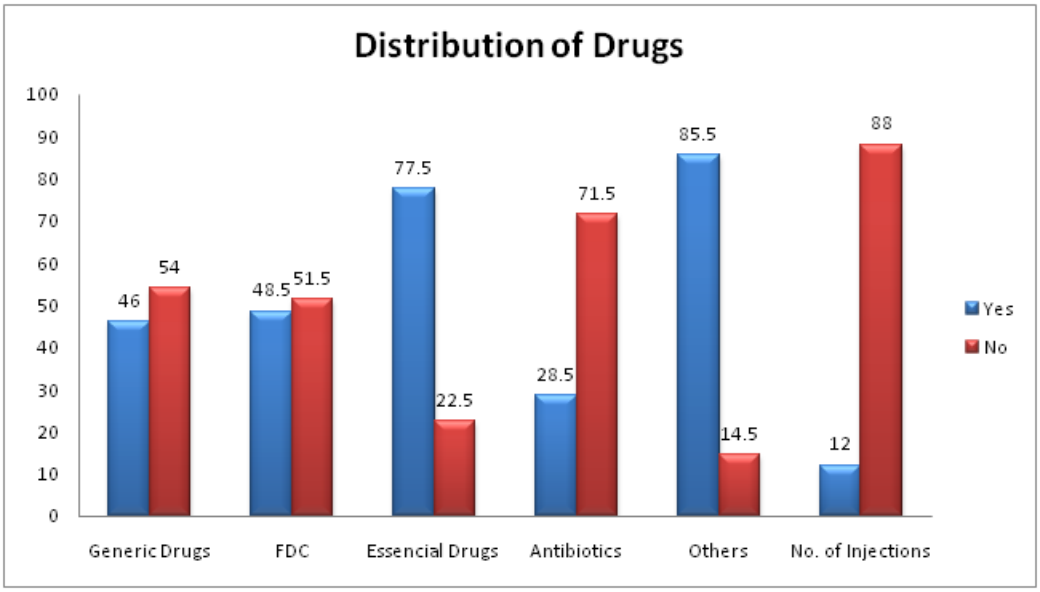

Figure 1: Distribution of Drugs (%)

Table 3: Distribution of Drugs Apart from Antibiotics

No of Other Classes of Drugs Used	Yes		No	
	Number	%	Number	%
Antacid	240	40	360	60
NSAIDs	222	37	378	63
Multivitamins	294	49	306	51
Antihistaminic	165	27.5	435	72.5
Others	396	66	204	34

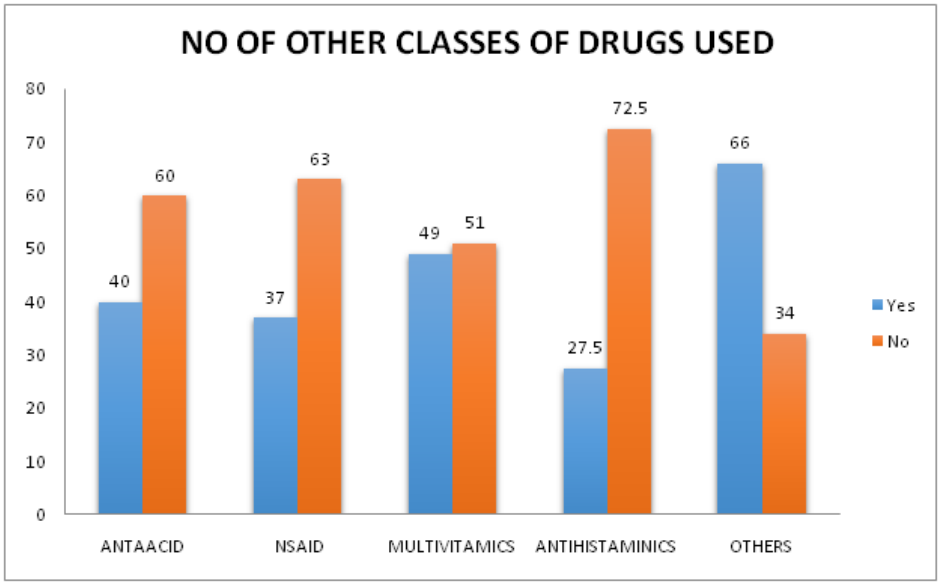

Figure 2: Other classes of drugs used (%)

Discussion

In our analysis on an average 4 drugs were prescribed per prescriptions. According to the WHO core drug use indicator criteria, 1.6 to 1.8 drugs on average should be prescribed for each patient.9 Earlier research by Sharif SI,[10] records polypharmacy—the use of more than two medications. This contrasts extremely favourably to the hospital's findings from

Sion, Mumbai (Karande) (2.9).,[11] (2.6) from Lucknow.[12] In our analysis, only 42.5% of medications were administered using their generic names (Table 1). According to Sarkar et al., 24.4% of medications were prescribed under generic name.[13] Previous research found that between 38% and 51% of prescriptions were for the generic name in those other places.[14-15] Our study's relatively low proportion of prescriptions for medications with generic names raises questions about why NMC guidelines for using generic names are not followed strictly. Low generic prescription rates for medications may be a reflection of the pharma industry's sway over healthcare. Our results are consistent with those of other research conducted in India and the surrounding nations.[16-18] Another crucial marker of the rationality of drug prescribing is the proportion of fixed dose combinations in the prescriptions. Of the 600 prescription, medicines, 291 (48.5%) were FDCs (Table 1). These numbers are lower than those from India's Uttaranchal (59%)[15] and Nepal (47%).[19] The FDCs were typically prescribed by brand name, which may be another reason for the low number of prescriptions for medications with generic names. Another sign of the rationality of drug prescribing is the proportion of drugs prescribed that are on the essential drug list. Out of a total of 600 medications, only 294 (44.1%) were given from the Essential Medicine List (EML) in our study. In a Karande study,[11] in Mumbai, it was discovered that 90.3% of the given medications complied with the WHO's tenth revised model list of essential medications. Other reports cited here show a significantly lower percentage, Maini,[20] (23%), Rehan,[21] (18.5%). The positive findings of Karande et al.,[11] may be a sign of a facility if a formulary or list of essential medications is present, and if important medications are offered at the dispensing pharmacy.

Conclusion

The sensible use of medications in clinical practice needs to be addressed, say the WHO's prescribing indicators. This prescription evaluation found that adherence to the standard prescribing criteria was missing. Our study emphasizes the necessity of training our prescribing physicians to write logical prescriptions and follow the WHO guidelines for prescriptions in order to improve hospital quality. The findings of this study will be utilized to construct a course on prescribing skills by giving real-world examples of complete and insufficient prescriptions made in accordance with WHO parameters.

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Conflicts Of Interest

There are no conflicts of interest.

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