

Original research article

Assessment of prescribing pattern in a Government teaching hospital and retail Medical stores in Gaya (Bihar)**Dr. Jitendra Kumar¹, Dr. Rohit Kumar Singh²****¹Associate Professor, Department of Pharmacology, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India.****²Associate Professor, Department of Pharmacology, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India.****Corresponding Author: Dr. Rohit Kumar Singh****Abstract**

This study was conducted to analyse the pattern of prescribing habits of doctors attached to a government teaching hospital and the private practitioners in Gaya (Bihar).

Prescriptions from government teaching hospital (n=208) and retail medical stores (n=196) from general practitioners were collected at random over a period of three months from June 2020 to August 2020 and the data were analysed on the following parameters - (a) total number of drugs prescribed, (b) generic vs brand, (c) total parenteral drugs prescribed, (d) fixed dose combinations and (e) most commonly prescribed drugs.

Among the types of drugs used, antimicrobial agents were prescribed maximum in the government teaching hospital (27.3%) as well as by the general practitioners (24.4%). Analgesics, antiulcer drugs, vitamin preparations were the commonly prescribed agents by the general practitioners while topical medications, analgesics, antihistamines, and bronchodilators were the commonly prescribed drugs by the government doctors. General practitioners prescribed glucocorticoids, anabolic steroids, zinc with vitamins or vitamin E which were expensive, ineffective or may be harmful. Injectable were also frequently prescribed, by them. Interestingly the prescriptions of government teaching hospital were more rational since the prescribers used less number of drugs in average and more frequently in their generic names.

This study may help to identify the problems involved in therapeutic decision making and improve the prescribing behaviour by planning for an interventional strategy.

Keywords: *Prescription analysis, teaching hospital, general practitioners.*

Introduction

Irrational prescription of drugs is of common occurrence in clinical practice (Ramsay 1993). Important reasons being lack of knowledge about drugs, unethical drug promotions and irrational prescribing habits by clinicians. Monitoring of prescriptions and drug utilisation studies could identify the associated problems and provide feedbacks to the prescribers so as to create an awareness about the irrational use of drugs (Pradhan et.al 1988) The present drug utilisation study was conducted in Gaya (Bihar) in the month of June 2020 to August 2020. Prescriptions were collected from A.N. Medical College, Gaya, a government teaching hospital (GTH) as well as from six retail medical stores (RMS).

Various factors influence the prescribing behaviour of the clinicians and it is difficult to change the behaviour without understanding the reason behind (Soumerai 1988). It is necessary to define the prescribing pattern and to target the irrational prescribing habits for sending a remedial message (Masford 1988). Keeping all these facts in consideration, the present study has been planned to define the pattern of drug use in both tertiary and primary health care levels in Bihar. The study also made efforts in bridging the gap between clinical

pharmacology and rational prescribing of drugs. It further attempts to analyse the prescriptions obtained from the retail medical store which were compared with the those obtained from the A.N Magadh Medical College, Hospital, Gaya.

Materials and Methods:

Prescriptions were collected during this three month long prospective study from the general practitioners at six retail drug stores situated at least four kilometers away from government teaching hospital. All prescriptions were entered into a proforma which gave the details about the identity of the patient, the diagnosis of the illness (if available) and the drugs prescribed. Similarly, data from government teaching hospital were collected for the outpatient departments during the first one hour while the patients were making their first visit. Sampling of prescription from the retail shops were performed within first three hours of opening the shops and the purpose of the study was prior explained to each patient. The prescriptions GTH (n=208) and RMS (n=196) were analysed on the basis of following parameters : (1) To estimate the total number of drugs prescribed, (2) Generic vs brand products, (3) total parenteral formulations, (4) fixed dose combinations and (5) the commonly prescribed drugs.

Result

This study revealed that the general practitioners (GP) in average prescribed more drugs as compared to the prescribers of the government teaching hospital. Only 6.5% of the drugs were prescribed in generics, while 44.1% of drugs were prescribed by teaching hospital doctors were in generic names.

Injectable drugs were also more frequently prescribed by GP. Fixed dose combinations were more commonly (32.5%) prescribed by GP while only 7.8% of them were the approved fixed dose combinations of WHO'. On the other hand, prescriber of the government teaching hospital prescribed fewer drugs, lesser injectables and used more commonly generic drugs with single ingredient. They also used approved drug combinations of WHO⁸ more frequently (59% vs 7.8% table 1).

Table 1: Analysis of prescriptions from the retail medical stores (RMS) and the government teaching hospital (GTH)

Details of Prescription	RMS	GTH
Number of prescriptions	196	208
Total number of drugs prescribed	548	374
Average number of drugs prescribed per prescription	2.8	1.8
Number of drugs prescribed by generic names (Percentage)	36 (6.5)	165 (44.1)
Number of fixed dose combination (Percentage)	178 (32.5)	83 (22.2)
Number of fixed dose combinations approved by WHO (1988) - Model	14	49
Essential Drugs List* (Percentage)	(7.8)	(59)

Among the category of drugs used, antimicrobial drugs were the most commonly prescribed agents for both RMS (24.4%) and GTH (27.3) Analgesics (16.9%), vitamins and minerals (15.1%), articular drugs (14.2%), comprised of the major group of drugs of RMS; while

topical formulations (19.3%) analgesics (13.1%) and antihistaminic drugs (13.1%) were the common groups of drugs prescribed by the prescribers of GTH (table 2). The general practitioners showed a tendency to prescribe glucocorticoids, anabolic steroids, zinc containing vitamins or vitamin E and ginseng, which were either expensive or ineffective or may be harmful.

Discussion

Tomson and Angunawela had studied upon patients, doctors and their drugs from a study in Sri Lanka where four levels of government health care system were incorporated. In their study, the incidence of multi-ingredient prescriptions was observed to be the least (4.0% of patients) in the university hospital. Bapna et al 1992 had observed the drug utilisation pattern in the primary health care level in south India whereas Pradhan et al 1990 had documented the use of antibiotics in JIPMER Hospital, Pondicherry. It is evident that the irrational use of drugs is a common occurrence throughout the world³. The present study elucidates that the prescriptions from government teaching hospital were comparatively more rational as evidenced by fewer number of drugs prescribed and frequent generic prescriptions. To conclude, this preliminary study may help to identify the problems involved in therapeutic decision making based on which future intervention studies could be contemplated, to promote rational prescribing⁷.

Table 2: Distribution of different categories of drugs in foe prescriptions collected from retail medical, stores (RMS) arid government teaching hospital (GTH)

Category of Drugs	RMS	(%)	GTH	(%)
Antimicrobial durgs	134	(24.4)	102	(27.3)
Analgesic / Antipyretic / Anti-inflammatory	93	(16.9)	49	(13.1)
Vitamins / Minerals with Iron without Iron	24 59	(4.3) (10.8)	16 22	(4.3) (5.9)
Topical preparations	34	(6.2)	72	(19.3)
Antihistaminies	30	(5.5)	49	(13.1)
Antacids/H ₂ blockers/Antispasmodics	72	(14.2)	10	(2.7)
Expectorants/Bronchodilators	27	(4.9)	31	(8.3)
Drugs for Psychiatric/Neurologic disorders	25	(4.6)		
Cardiovascular/Antihypertensive drugs	7	(1.2)	13	(3.5)
Hormones	4	(0.7)	2	(0.5)
Vaccines/Antisera	0	(0.3)	5	(1.3)
Digesitive Enzymes	23	(4.2)		
Miscellaneous	8	(1.5)	3	(0.5)
Total	548		374	

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Received: 07-10-2020 || Revised: 25-10-2020 || Accepted: 20-11-2020