



INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH AND BIO-SCIENCE

EVALUATION OF DRUG PRESCRIBING PRACTICES BY GENERAL PRACTITIONERS IN SONAI VILLAGE OF AHMEDNAGAR DISTRICT

NARWATE B. M

Department of pharmaceutical chemistry, MES's College of pharmacy Sonai, Tal- Newasa,
Dist –Ahmednagar, Maharashtra India-414105

Accepted Date: 21/01/2014; Published Date: 27/02/2014

Abstract: Objective :Irrational use of medicines is distressing global problems, there is a concern regarding the irrational production, prescription and use of drugs in India. Evaluation of the drug utilization has become one of the important tool to assess appropriateness of drug therapy. General Practitioners are more easily approachable doctors by the society. So this study planned to assess quantitative type of prescription pattern by general practitioners in identifying commonly utilized drugs by the rural area of Ahmednagar district. **Methodology**: Twenty general physicians were selected and 30 prescription of each physician were collected from 25 days time period. A total of 500 Sample of prescriptions from different medical store were collected and analyzed. Patient presenting with symptom such as, running nose, cough, sore throat, diarrhea and fever for less than 7 day were included. Pregnant women, infant, seriously idled patient were excluded. **Result**: The most Common diagnoses were nasal symptom (41%), followed by Cough (19%) and Typhoid (18%). Maximum number of drugs prescribed to a patient in the study was 6 while minimum number of drugs per prescription was 3. At least one antimicrobial agent was prescribed in 94% of prescriptions studied. At least one Non-steroidal anti-inflammatory drug was prescribed in 65% of prescriptions. Only 5 % of drugs were prescribed in generic names. At least one drug was prescribed in Parenteral route of administration in 50 % of the prescription and Non-steroidal anti-inflammatory drugs were the most commonly prescribed drugs by parenteral route. **Conclusion**: The results indicate a considerable scope for improving the prescribing pattern of drugs in the medical outpatient.

Keywords: General practitioners, Quantitative, Upper respiratory tract Infection, Non-steroidal anti-inflammatory drugs, Generic drugs, prescribing pattern etc.



PAPER-QR CODE

Corresponding Author: Prof. NARWATE B. M.

Access Online On:

www.ijprbs.com

How to Cite This Article:

Narwate BM, IJPRBS, 2014; Volume 3(1): 401-409

INTRODUCTION

The evaluation of drug prescription practices was carried out in Sonai village of Ahmednagar district. The sonai is small village situated closed to holy place Shani- shinganapur, in south of Ahmednagar Dist. Sonai is fulfilled with natural vegetation & the main occupation of the people of sonai is Agriculture. As people work in the farm there is not adequate time for them to really take proper care of their hygiene. There are approximately 20 to 30 medical practitioners engaged in the job to treat the people by their professions.

Irrational use of drugs is a major health problem of present day medical practice and its consequences include ineffective treatment, unnecessary prescription of drugs particularly antimicrobials and injections, development of resistance to antibiotics, adverse effects and economic burden on both patients and society. The continuously increasing number of drugs available in the market for the treatment of different ailments has increased the possibility of irrational use of medicines.¹ It has been estimated that 50% or more medicine expenditure is being wasted through irrational prescribing, dispensing and patient use of medicine. Irrational poly-pharmacy invites medicine-induced diseases like adverse drug reactions (ADR), which is reported to be as high as 28%. Although it cannot be denied that the medical profession, pharmaceutical industry and general public have each contributed to improper, irrational and ill-advised use of medicines, resultant medicine induced harm, and at times therapeutic failure; the major responsibility however is that of the medical profession.²

Private Medical Practitioners or General practitioners (GPs) are the doctors who are frequently sought by the general public for the treatment of their common illnesses. They are the primary health care providers in the field of public health³. This is particularly true in rural and sub urban areas, especially in a developing country like India where the doctor to patient ratio is 1:1953⁴⁻⁵. GPs are more easily approachable by the society. GPs treat a wide variety of illnesses at a primary health care level and this makes them to use a wide array of drugs of different classes. At present, no guidelines are being followed by GPs for prescribing drugs in India. Critically ill and patients who need advanced and costly investigations are referred to higher centers by the GPs. Medical audit improves the standards of medical treatment at all levels of health care delivery system. The study of prescribing pattern is a component of medical audit which seeks monitoring, evaluation and necessary modifications in the prescribing practices of the prescribers to achieve rational and cost effective medical care⁶⁻⁷. The nature of such audits can be quantitative or qualitative or a combination of both. Quantitative audits are concerned with quantifying various facts of drug therapy use within a health care system area group whereas qualitative audits compare drug use or practice with predetermined standards or criteria⁸. The present study aimed to assess the quantitative type of prescription pattern by general practitioners in identifying commonly utilized drugs by the rural population of Sonai ,

Ahmednagar district. This study also helps to detect any irrationality of usage of drugs by general practitioners and to provide necessary suggestions for future use.

Material and Method:

A prospective observational study was done by collecting prescriptions of general practitioners

From medical store in rural areas located in the periphery of Ahmednagar district over a period of 20 days during 5 July to 25 July 2013. The general practitioners whose prescriptions were analyzed in the study are having private clinics in rural areas. Higher centre located in the near proximity is about thirty kilometres from the study location. The Physician selected are B.A.M.S., B.H.M.S. and M.B.B.S and not super specialist physician. Copies of prescriptions made by the GPs reaching the medical store were made and they were taken for analysis. 20 randomly selected private practitioners out of total 25 identified practitioners (approximately 80%) in Ahmednagar district of Maharashtra were selected for study purpose. Each day 5 patients' prescriptions for consecutive 5 days and thus 25 patients (25 prescriptions) from each practitioner and total 500 prescriptions from 20 private practitioners were considered for study purpose. Patient presenting with any symptom such as, running nose, cough, fever, diarrhea, malaria and typhoid for less than 7 day were included. Pregnant women, infant, seriously idled patient were excluded. The data collected from prescriptions were entered into a proforma sheet made for the study. The proforma contained details such as demographics (age, sex, except name of the patient), diagnosis, number and types of drugs prescribed (generic or brand name), their route of administration, frequency and investigations requested.

RESULTS

Twenty five prescription of each practitioner (20 general practitioner), total 500 prescription were studied and following observation was obtained. 276 were male patients and remaining 224 were females. Most Common diagnoses encountered in the study were Cough (19%), fever (12.8%), Diarrhea (9%), Nasal symptom (41%), malaria (3%), Typhoid (18%). The % diagnosis of various disease are listed in table **No.1**

Table No.1 List of diagnoses made by the practitioners as mentioned in the prescriptions

Sr,No	Types of illness	No. of prescription	% prescription
1.	Cough	95	19
2.	Fever	64	12.8
3.	Diarrhea	45	9
4.	Nasal symptom	205	41
5.	Malaria	15	3
6.	typhoid	18	18

Maximum number of drugs prescribed to a patient in the study was 6. Minimum number of drugs was 3. Number of patients who received 4 or more drugs per prescription was 52. The Five most commonly prescribed medicine were antibiotic (94%), Analgesic ((79%), Antacid (86%) Multivitamin (29%), steroidal anti-inflammatory drugs (65%) The % prescription per type of medicine is listed in table No2.

Table No 2. % of prescription per type of medicine.

Sr. No	Types of Drug	No. of prescription	% Drug
1	Antibiotic	470	94
2	Analgesic	395	79
3	Steroids	315	63
3	Antacid	430	86
4	Multivitamin	145	29
5	Antifungal	46	9.2
6	Steroidal drug	325	65

The most commonly prescribed fixed dose combination of drugs was Paracetamol + Aceclofenac + Serratiopeptidase followed by Ofloxacin + Ornidazole and Paracetamol + Aceclofenac. (**Table 3**) At least one antimicrobial agent was prescribed in 94% of prescriptions studied. At least one NSAID was prescribed in 65% of prescriptions.

Table No 3. List of drug prescribed as fixed dose combination.

Sr.No.	Drug prescription in fixed dose combination	No. of time prescribed	Percentage
1	Paracetamol + Aceclofenac + Serratiopeptidase	75	15
2	Paracetamol + Aceclofenac	70	14
3	Ofloxacin + Ornidazole	50	10
4	Amoxicilline + Cloxaciline	50	10
5	Monteleukast + Cetrizine	205	41
6	Cefixime + Ofloxacin	20	4
7.	Nimusulide + paracetamol	60	12
8.	Antitussive + Antibiotic	95	19

In the 500 prescriptions only 25 times (5%) drugs were prescribed in generic names while rest 475 times (95%) drugs were prescribed by their brand names by the General Practitioners (Table No 4.).

Table No . Number of time and % of prescription written in generic name and brand name.

Generic/Brand name	Number of time	%
generic name	25	5
Brand name	475	95

Among the parentally prescribed drugs Paracetamol (100 patients) and Diclofenac (85 patients) which are Non-steroidal anti-inflammatory drugs were given more frequently followed by Gentamicin (57 Patients). (Table 5). All injectable drugs were given intramuscularly.

Table No 5. List of drugs prescribed in injection form and administered by parenteral route.

Sr. No	Drugs prescribed as injections	Number of prescriptions
1	Paracetamol	100
2	Diclofenac	85
3	Gentamicin	57
4	Pantoprazole	43
5	Solbactam	20
6	Omeprazole	15
7	Cefotaxime	12
8	Chlorquine	9

Table No 6. Major brand name prescribe by practioner.

Category of medicine	Name of medicine	Mostly used brand name	No of time prescribed
Antibiotic	Cephixime	Zifi, Hifen	205
	Azithromycin	Zipod, Avindo	45
	Ciprfloxacin	Ciplox, Norflox	183
	Oflaxacin	Zo,Oflin ,Oflox	167
	Amoxyciline+ Cloxaciline	Flemiclox, Novoclox, ampiclox	325
	Co- trimaxazole	Mycoderm, Fungotech	47
	Erythromycin	Altrocin, Erythrocin.	35
Major analgesic and antiinflammatory	Cefadroxil	Zadro, cefadur	143
	Nimsulide	Nise, Nicip	244
	Ibuprofen	Combiflam, Ibuflam	206
	Paracetamol	febrex plus, wicoryl	309
Major Anti-allergic drugs	Aceclofenac	Arflur, Acenac	256
	Cetirizine	Okaset, levocetrine, citrine	285
Major steroidal drugs	Prednisolone	Wysolone, wyoth	235
	Betamethasone	betnesol	240
Major antifungal drug	Fluconazole	Flucos, Fluc	63

DISCUSSION

Prescription pattern evaluation has become a potential tool to assess appropriateness of drug therapy. This is important for evaluation and necessary modifications in the prescribing practices of the prescribers to achieve rational and cost effective medical care. General Practitioners are more easily approachable doctors by the society. So in this study we analyzed prescription of General Practitioners who are practicing in rural area to find out prescription pattern and the rationality of prescription from them. On an average 3 drugs were prescribed per prescription which was similar to the studies conducted in 1996 by Baqui and Choudhary, 3.31 in another

Study conducted in 1998 by Rahman et al⁹⁻¹⁰. This survey highlight the major disease observed amongst the people living in sonai village is nasal symptom, diarrhea, fever and cough. This might be the reason that at least one antimicrobial agent is prescribed in 94% of prescriptions studied. Cefixime is the most commonly prescribed antimicrobial agent and β -lactum antibiotic are the most commonly prescribed group of antimicrobial agents. This is similar to the findings of drug utilization studies done in India¹¹⁻¹².

General Practitioners tendency to prescribe broad or extended spectrum antimicrobials may be to cover all possible etiologies including unusual pathogens because of his failure to demonstrate the etiology of the infection^{13,14}. Second most common diagnosis was typhoid disease. Non-steroidal anti-inflammatory drugs (NSAIDs) which are commonly prescribed drugs mostly for all disease condition. Parenteral route of drug administration was used in 50% of the prescription and NSAIDs were most commonly prescribed drugs by parenteral route. As the pain is one of the most common causes of the patient to visit hospital these drugs are commonly prescribed. Patients want quick relief from the pain so they are commonly prescribed in injection form. In the present study, 5.0% drugs have been prescribed by their generic name and 95% of prescriptions made in brand names are considerable issue as this increases the economic burden of the patients as the generic drugs are less costly than the branded drugs.

CONCLUSION

This study provides a clue for the prescribing patterns of drugs by GPs in rural area. Our study confirms the tendency of GPs to overprescribe. Prescribing drugs by generic names need to be encouraged among the GPs. All the consultations were finished with a drug prescription, this needs an alert as the WHO guidelines suggest that all consultations need not be ended in drug prescribing. A Prescription should contain proper instructions about side effects of the prescribed drugs, other relevant advice and follow up of the patients. Also, General Practitioners should be

aware that antibiotic resistance is an emerging problem created largely by overuse and inappropriate use of antibiotics. Anti-microbial agents which are less prone for resistance such as quinolones may be used more frequently in place of beta –lactum or any other higher antibiotic as they are also broad spectrum antibiotics. The reason of this irrational prescribing by the General Practitioners may be due to lack of knowledge on how to prescribe and to earn more money in short period of time. Patient want quick relief from symptom and physician want to attract patient toward his clinic. So That physician exercise unethical practice. Therefore it is necessary to resensitize physician about the importance of rational prescribing and safeguard the patient by prescribing appropriate medicine at right time in right dose to right patient.

REFERENCES:

1. Haldar D, Naskar TK, Sarkar TK, Ray SK, Taraphdar P, Biswas A Prescribing and dispensing pattern: Implication in the right of access to essential medicine. *The Health*. 2011; 2(4): 143-147.
2. Sunil Karende, Punam Sankhe and Madhuri Kulakarni, Patterns of prescription and drug dispensing, *Indian j pediatric* 2005; 72(2):117-12.
3. Hayden J. The importance of general practice in a primary-care-led National Health Service. *Br J Gen Pract*. 1996; 46:267–8.
4. PMO pushing to ramp up poor doctorpatient ratio [Internet]. *The Times Of India*. [cited 2012 Oct 12]. Available from: [http://articles.timesofindia.indiatimes.com/](http://articles.timesofindia.indiatimes.com/2012-03-06/india/31127057_1_healthministry-nchrh-bill-human-resources) 2012-03-06/india/31127057_1_healthministry-nchrh-bill-human-resources.
5. Rao PH. Profile and practice of private medical practitioners in Rural India. *Health and population* 2005; 28 (1): 40-9,
6. Gupta N, Sharma D, Garg SK, Bhargava VK. Auditing of prescriptions to study utilization of antimicrobials in tertiary hospital. *Indian J Pharmacol* 1997;29:411-5.
7. George Kutty KV, Sambasivam N, Nagarajan M. A study on Drug prescribing pattern in Madurai city. *Indian J Pharmacology* 2002; 34:361-2.
8. George J, Senthilkumar AB, Rajendran SD, Suresh B, Drug prescribing audit of ranitidine: A government hospital. *IJPS* 2001; 63: 491-9.
9. Baqui QBOF, Choudhary SAR. Prescribing pattern of graduate medical prescribers in rural Bangladesh. *International Conference on improving use of Medicines* 2006.

10. Rahman MS, Begum M, Khan IA, Kamal ASMA, Choudhary S, Islam AMZ, Sultana R, Haque MZ, Akhter N. A baseline survey on use of drugs at private practitioner level in Bangladesh. Bangladesh J Physiol Pharmacol 1998;14:47-50.
11. Badar VA, Navale SB. Study of prescribing pattern of antimicrobial agents in medicine intensive care unit of a teaching hospital in central India. JAPI 2012; 60:20-3
12. Lisha JJ, Padmini D, Jenny J, Guido S. Drug Utilization Study of Antimicrobial agents in Medical intensive care unit of a tertiary care hospital.2011. Asian Journal of Pharmaceutical and Clinical Research 2011;4(2):81-4