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LETTER TO EDITOR

Prescribing Practices Of Doctors In Rural And Urban India

SHARMA R *, KHAJURIA B **

*(MD.), DMCH, Clinical Pharmacologist, Govt Hospital Vijay - Pur, J&K Health Services - Jammu- J&K- (India), **(M.D.), Dept. of Forensic Medicine and toxicology, Govt Medical College***, Jammu- J&K- (India)

Corresponding Author:

Dr Rashmi Sharma MD, DMCH
Clinical Pharmacologist Govt Hospital Vijay-
Pur, J&K Health Services- Jammu,
216-A, Last-Morh, Gandhi-Nagar, Jammu.
J&K- (India) E.mail: drrashmi@india.com

Drug utilization research was defined by WHO as the marketing, distribution, prescription and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences[1].The rational use of drugs requires that patients receive medications appropriate to their clinical needs in the right dose, for an adequate period of time and at the lowest cost to them and their community. A large number of commercial preparations, unethical drug promotions by pharmaceutical houses and irrational prescribing habits of clinicians due to lack of knowledge about drugs, inability to deal with demanding patient etc. are the important reasons for the irrational prescription of drugs in clinical practice. Bad prescribing habits lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patient and higher costs. Although a number of studies are available, regarding the drug prescribing trends from different parts of our country, there are only few studies which compare the prescribing practices of rural doctors with that of urban doctors [2]. Hence, the present study was conducted to compare

the prescribing practices of doctors working in urban and rural India.

Two hundred prescription slips were collected from the patients attending the medical OPD (out patient department) of a Tertiary Care Hospital (Group-A) and 200 prescription slips were collected from the patients attending Primary Health Centers (Group-B). Well informed consents were taken from all the patients before collection of the prescription slips. After noting down the relative points, the prescriptions were returned back to the patients. All the prescriptions were analysed for the average number of drugs prescribed per prescription, the drugs prescribed by generic names, the fixed dose combinations prescribed, the dose and dosage forms of drugs, the duration of therapy, the drug interactions shown by prescribed drugs, the overuse or under use of drugs, prescription of inappropriate drugs and the written instructions or precautions for the use of drugs. Inadequate dose of the drug taken for inadequate duration was considered as under-use of drug. Overdose of drugs, drug therapy for longer duration, taking antimicrobials for viral conditions, and irrational drug combinations were considered as over use of drugs. At the end of the study, all the parameters were compared between group-A and group-B using chi-square test and p-value<0.05 was considered statistically significant.

It was found that an average number of drugs prescribed, were same in both the groups, but more fixed dose combinations were prescribed in Group-A than in

Group-B; but the difference was not statistically significant. The prescriptions which were deficient in dose , dosage form and duration of drug therapy, were statistically more in group-B than in group-A [Table/Fig 1].Moreover, prescriptions showing drug interactions, under use of drugs and use of inappropriate drugs, were more in group-B than in group-A [Table/Fig 1].

(Table/Fig 1) Comparison of Group-A and Group-B regarding rational prescribing.

| PARAMETER | Group-A (n=200) | Group-B (n=200) | p-value |
|------------------------------------------------------------------------|--------------------|--------------------|----------|
| ✓ Total number of drugs used | 7500 | 7600 | - |
| ✓ Average number of drugs per prescription | 3.5 | 3.8 | - |
| ✓ Drugs prescribed under generic names | 960 (13%) | 418 (5.5%) | 0.340 |
| ✓ Fixed dose combination used | 2200 (29.33%) | 1672 (22%) | 0.70 |
| ✓ No of prescription in which dose and dosage form not mentioned | 33 (16.5%) | 72 (36%) | 0.020** |
| ✓ No of prescriptions in which duration of therapy not mentioned | 24 (12%) | 70 (35%) | 0.002** |
| ✓ No of prescriptions with prescribed drugs showing drug interactions: | 22 (11%) | 61 (30.5%) | 0.002** |
| ^a Antacids with PPI | 7 | 26 | |
| ^b M-antibiotics, TC with Ca and Fe | 11 | 32 | |
| ^c CCPs with AHD | 10 | 12 | |
| ^d Others | 4 | 13 | |
| ✓ No of prescriptions with inappropriate drug prescribed | 13 (6.5%) | 40 (20%) | 0.047** |
| ^a FQs for pediatric and obstetric patients | 6 | 23 | |
| ^b Oral NSAIDs in patients with hepatitis or gastritis | 11 | 19 | |
| ^c Betablockers in diabetics with hypertension | 0 | 11 | |
| ^d Others | 0 | 5 | |
| ✓ No of prescriptions with over use of drugs | 48 (24%) | 61 (30.5%) | 0.780 |
| ✓ No of prescriptions with under use of drugs | 10 (5%) | 84 (42%) | 0.0001** |
| ✓ No of prescriptions with written pre-cautions with use of drugs | 64 (32%) | 70 (35%) | 0.977 |

Group-A=government medical college Jammu, Group-B=primary health centers, No=number, n=total number of prescriptions studied, PPI=proton pump inhibitors, M=macrolides,TC=tetracyclins, CCPs=cough and cold remedies containing sympathomimetic drugs,AHD=antihypertensive drugs,FQs=fluoroquinolones,Ca= calcium, Fe= iron , NSAIDs= nonsteroidal anti-inflammatory drugs,**= statistically significant difference between two groups.

The prescription quality in group-A was found to be superior to that in group-B, both in-terms of safety and tolerability. The poor prescribing skills of rural practitioners seemed to be because of lack of knowledge and training in rational prescribing. Earlier, a study from Aligarh (UP) also demonstrated the poor knowledge of rural practitioners in diarrhoea management.³ In another

household study from rural India, the average number of drugs prescribed per prescription was 3.07 and about 63.33% prescriptions were found to be irrational [4]. A study from North India also revealed the indiscriminate use of analgesics, antibiotics, and vitamins. However, a student based study from a tertiary care hospital showed that 84.70%, 88.54% and 95.76% of antibiotics, anti-hypertensives and nonsteroidal anti-inflammatory drugs were rationally prescribed [6].

Our inability to interview the practitioners regarding the source of drug information and drug treatment guidelines could be considered as limitations of our study. Pharmacoeconomics, another important aspect of rational prescribing, was not taken up for the present study. However, newer and expensive drugs from different pharmacological groups were more frequently prescribed in group-A. In an earlier study from Goa, a majority of prescriptions (96.6%) consisted entirely of branded medicines and in only 68.5% prescriptions, the cheapest brand was used for at least one medicine, indicating the lack of concern that practitioners have for the economic consequences of drug prescriptions [7].

Physician-industry interactions appear to affect prescribing and professional behaviour which may result in negative outcomes, like the inability to identify wrong claims about medication, accepting gifts from pharmaceutical representatives and favouring them by prescribing drugs from their companies, increasing prescription rates, prescribing fewer generic but more expensive medications and newer medications at no demonstrated advantage [8],[9]. They also make the prescriber vulnerable to influences which can cause irrational prescribing, such as patient pressure, bad example of colleagues and high-powered salesmanship. Later on, new graduates will copy them, completing the circle. Changing existing prescribing habits

is very difficult. So good training is needed before poor habits get a chance to develop. The need for promoting appropriate use of drugs in the health care system has arisen, not only because of the financial reasons with which policy makers and managers are usually most concerned, but also for the health and medical care of patients and the community. All substances are poisons; the right dose differentiates a poison and a remedy. In the wrong hands or at the wrong time, even the most carefully quality controlled medicine transforms from a life saver to a life threatener. Modern medicine demands that its practitioners make efforts to update their knowledge and enhance their skills at frequent intervals. Continuing medical education programs (CMEs) could prove to be an important means of enhancing their prescribing skills. Although doctors in big institutions get a chance to attend such CMEs, the doctors in remote areas are usually deprived. Authorities should arrange periodic refresher courses or CMEs in rational drug therapy and in the latest management of diseases for the doctors practicing in rural areas.

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