



PRESCRIPTIONS OF PRIVATE PRACTITIONERS AND PHYSICIANS OF A TERTIARY CARE HOSPITAL: AN RATIONALITY ASSESSMENT AND COMPARISON.

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ABSTRACT

Compare the rationality of prescriptions between private practitioners and physicians of a tertiary care hospital. A prospective study was done by reviewing 150 prescriptions each of private practitioners and physicians of a tertiary care hospital over a period of 2 months. The rationality assessment was done using the method adopted by Gajjar. Collected data entered and analyzed using Microsoft office Excel 2010 computer software. Statistical tests were applied and $p < 0.05$ was considered as statistically significant. 120 prescriptions were rationally prescribed by physicians of a tertiary care hospital. 28 were semi rational and only 2 prescriptions were irrational. 46 prescriptions of the private practitioners were rational, 88 semi rational and 16 were irrational ($P < 0.001$). Private practitioners prescribe more irrational prescriptions. Our studies on the prescribing pattern of various sectors needed to make the doctors aware of the irrational drug use. Also, the art of prescription writing and the need for rational prescribing should be stressed during the medical school.

KEY WORDS: rational prescribing, rational drug use, prescribing indicators



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INTRODUCTION

Private General Practitioners are the doctors frequently sought and easily approached by the general public for the treatment of their common illnesses. They are primary health care providers in rural and semi-urban areas in a developing country like India. General practitioners treat a wide variety of illnesses and use a wide array of drugs of different classes. At present, no guidelines are being followed by the general practitioners for prescribing drugs in India. In general, it has been frequently observed that the private practitioners^{1,2} adopting use of multiple drugs without any indication, this leads to increase in the chances of drug interactions and adverse effects. Many studies have revealed that private practitioners do not follow rational prescribing and prescribes vitamins, tonics and other drugs by brand names^{3,4} which increases the economic burden on the patients. Similar types of patients are also seen by the physician in a tertiary care hospital attached to medical colleges where emphasis is usually given to rational use of drug^{5,2}. There is a lot of emphasis by the WHO^{6,7} on the rational use of drugs and rational prescribing. In spite of these programs, irrational prescribing is widely prevalent. There is a paucity of studies comparing the prevalence of irrational drug use in different sectors, which will aid the health system to target the vulnerable group towards rational prescribing. Thus, the study was planned to assess the rationality of prescriptions between private practitioners and physicians of a tertiary care hospital in a semi urban area in India.

MATERIALS & METHODS

A prospective study (prescription audit) was conducted by reviewing the prescriptions given to patients attending outpatient department of Medicine of Mahatma Gandhi medical College & Research Institute located in a semi urban area of Puducherry and prescriptions prescribed to patients visiting private practitioners within 5 kms of the tertiary care hospital over a period of two months. Ethical permission to conduct the study was obtained from Institution Ethical Committee

before conducting the actual study. Study confidentiality was maintained during and after data collection.

Inclusion criteria

1. Patients, both males and females visiting the outpatient clinics of private practitioners in semi urban area.
2. Patients visiting the outpatient department of medicine in a tertiary care hospital in semi urban area were included in the study.
3. Patients willing to participate and give informed written consent were included.

Exclusion criteria

1. Incomplete prescriptions
2. Prescriptions without diagnosis.
3. Prescriptions with illegible handwriting.

Methods

10 out of 50 randomly selected private practitioners within 5 kms of the tertiary hospital were selected for study purpose. A total of 150 prescriptions was collected. Similarly 150 prescriptions from physicians of a tertiary care hospital was collected, evaluated and compared. A prescription audit was done by review of prescriptions of private practitioners and prescriptions of physicians from patients visiting outpatient clinics in the department of medicine in a tertiary care hospital using a case record form. Data was collected by photocopying of the prescriptions from the nearby pharmacies of private general practitioner's clinics. Information regarding age, sex, date of visit, name, diagnosis and number of drugs prescribed was collected. In addition, information regarding the drugs used, duration of treatment given, use of injections, use of fixed dose combinations from WHO list, drug prescribed by generic names were collected and entered in a case record form. The rationality of drugs prescribed was explored using the method adopted by Gajjar⁸.

Rationality assessment

For studying the rationality of prescriptions, a 30 points score system used by Gajjar¹⁸ was used. Main drug prescribed received 20 points and the Complementary drug prescribed received 10 points. Out of these

total points, half the points were given for the correct drug chosen for the clinical condition and half for the correct dose, route, frequency

of administration and the duration of the treatment.

Negative points were given for use of

- Unnecessary drugs (-5 for each drug/ formulation)
- Irrational drugs (-5 for each drug/ formulation)
- Hazardous drugs (-10 for each drug/ formulation)
- Unnecessary injections (-5 for each injection)

Based on the above mentioned criteria, net score was calculated and each prescription was graded accordingly as mentioned below

- 0 to 14 points –Irrational
- 15 to 24 points – Semi rational
- 25 to 30 points – Rational

Statistical tests

Collected data was entered and analyzed using Microsoft office Excel 2010 computer software. Data was presented as numbers, percentages and proportions. To assess significance of study findings, statistical tests (according to nature and distribution of data e.g- Chi square test) would be applied and $p < 0.05$ was considered as statistically significant.

RESULTS

The rationality of the prescriptions was assessed using the method adopted by Gajjar

and rationality scoring was given accordingly. 120 prescriptions were rationally prescribed by physicians of a tertiary care hospital. 28 prescriptions were found to be semi rational and only 2 prescriptions were irrational. On the other hand, only 46 prescriptions prescribed by the private practitioners were found to be rational. 88 prescriptions were found to be semi rational and 16 prescriptions were found to be irrational. The differences in the rational prescriptions are highly statistically significant ($P < 0.001$) and are depicted by the following table, revealing more rational prescriptions being prescribed by the physicians of a tertiary care hospital.

Table 1
Rationality scoring of the prescriptions between the two groups.

Rationality score (points)	Number of prescriptions prescribed by private practitioners(%)	Number of prescriptions prescribed by physicians of tertiary care hospital(%)	Chi square value	P value
Irrational(0-14)	16(10.6%)	2(1.33%)	11.5839	0.0007
Rational (15-24)	46(30.6%)	120(80%)	73.8536	<0.001
Semi-rational (25-30)	88(58.6%)	28(18.6%)	50.5997	<0.001

Irrational use of drugs

The results of our study revealed that 40 unnecessary drugs, 25 unnecessary injections and 14 irrational fixed dose combinations were prescribed by the private practitioners, whereas only 4 unnecessary drugs and 3 unnecessary injections were prescribed by the physicians of a tertiary care hospital. There was no irrational fixed dose combination prescribed by them. Most of the private practitioner's prescribed ciprofloxacin with tinidazole combination.

Prescription by generic names

The private practitioners prescribed 10 drugs by generic names, whereas the physicians of a tertiary care hospital prescribed 86 drugs by generic names and this was found to be highly statistically significant ($P < 0.000$).

Most common drugs prescribed

The most common drugs prescribed by the private practitioners were compared with the physicians of a tertiary care hospital. Our

study revealed paracetamol, antibiotics and vitamins were used more by the private practitioners when compared to the other group. The physicians of a tertiary care

hospital prescribed ranitidine, paracetamol and amoxicillin more commonly in comparison with the other group and depicted in table 2.

Table 2
Most common drugs prescribed between the groups

Drug prescribed	Percentage of prescriptions with the drug prescribed by private practitioners	Percentage of prescriptions with the drug prescribed by physicians of tertiary care hospital
Paracetamol	23.3%	10%
Aceclofenac	30.6%	6.6%
Vitamins	31.3%	7.3%
Ranitidine	1.3%	18%
Pantoprazole	19.3%	3.6%
Cetizine	5.3%	6.6%
Amoxicillin	2%	24%
Cephalosporins	26.6%	4.6%

DISCUSSION

The study reveals that 120 prescriptions prescribed by physicians of a tertiary care hospital were rational, 28 prescriptions were semi rational and only 2 prescriptions were irrational, but only 46 prescriptions prescribed by the private practitioners were found to be rational. 88 prescriptions were semi rational and 16 prescriptions were found to be irrational. This study reveals the high prevalence of irrational drug therapy among the private practitioners. Similar study was done by Sneha Patel^{2,9,10} et al who evaluated 100 prescriptions from Medical Officers serving in Primary Health Centers and compared to the private general practitioners. The number of drugs prescribed per prescription (2.27 v/s 3.66, $p < 0.001$), total rationality score (25.83 v/s 20.45, $p < 0.05$), number of rational prescription (82 v/s 42, $p < 0.001$) and number of unnecessary drugs (46 v/s 108, $p < 0.05$), injections (1 v/s 15, $P < 0.05$), irrational drug or combination (1 v/s 22, $p < 0.05$) were noted from both the sectors. Our study also revealed that most of the private practitioners prescribed by brand names. This may be attributed to the promotional incentives given by the pharmaceutical companies. There were many studies which comply with our results here were more irrational fixed dose combinations prescribed by the private practitioners^{11,12,13}, most common being the ciprofloxacin with tinidazole¹⁴ combination. The probable reason would be lack of knowledge of the current concepts and updates. This can be overcome

by conducting workshops on rational therapeutics and making the attendance mandatory. Paracetamol was one of the most common drugs prescribed in both the groups. This may be due to the availability of paracetamol as an over the counter drug. Vitamins and Aceclofenac were more commonly prescribed by the private practitioners. Among the antiulcer drugs, ranitidine was most commonly prescribed by the physicians of a tertiary care hospital whereas pantoprazole was commonly prescribed by the private practitioners. This reveals the undue leaning of private practitioners to an expensive drug compared to a cheaper drug which may increase the financial cost¹⁵ to the patient. The limitation of our study is that we did not include the patients admitted in the hospital. Moreover, only one method of rationality assessment was followed.

CONCLUSION

It is obviously revealed that private practitioners prescribe more irrational prescriptions compared to physicians of a tertiary care hospital. In a developing country like India, with several drug companies competing with each other to market their drugs, the prescribers are diverted away from rational drug use by the promotional incentives¹⁶ provided by the pharmaceutical companies. Moreover, there should be more studies on the prescribing pattern of various sectors to make the doctors aware of the

scenario under which they are working and stringent action need to be taken for those not abiding it. Also the medical faculty should teach the art of prescription writing¹⁷ to the medical students and stress the need for rational prescribing so that they practice it later efficiently which in turn results in better

provision of effective health care to the patient and reduce the financial burden to the patient.

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