SHORT COMMUNICATION

Do General Practitioners Know What They are Prescribing?

Ali Jawaid¹, Dileep Kumar Rohra², Abdul Mueed Zafar³ and Arfat Jawaid⁴

ABSTRACT

A cross-sectional study was conducted to explore general practitioners’ (GPs) knowledge regarding the major therapeutic use and adverse effects of drug(s) they prescribe. Three drugs namely tablet Montelukast Sodium, tablet Somatriptan and inhaler Fluticasone Propionate were selected from the list of drugs approved by the Ministry of Health in Pakistan. GPs who had prescribed at least one of the three were inquired about the cost, therapeutic use and one common adverse effect. For each question, one correct option and three distracting options were given. Two hundred and ninety four responses of 131 GPs were included in the final analysis. The correct options for therapeutic use and adverse effect were identified by 61.2% (n = 180) and 40.8% (n = 120) respectively. A statistically significant (p < 0.01) deficit of knowledge regarding adverse effects was observed for those GPs who identified pharmaceutical advertisements as their primary source of information for new drugs and those who were less experienced.

Key words: General practitioners. Source of information. Drugs. Adverse effects.

Pharmaceutical advertisements and/or representatives serve as the primary source of information for Pakistani general practitioners (GPs) regarding drugs.¹ In another study, the claims made in pharmaceutical advertisements were critically appraised and found 18% of them to be exaggerated, ambiguous, false or controversial.² Based on these observations, it may be speculated that the knowledge of those GPs who primarily rely on pharmaceutical advertisements to acquire knowledge about drugs, may be inapt. This background led the authors to investigate the knowledge of GPs regarding the therapeutic use and one common adverse effect of the drug(s) they had prescribed recently.

From the list of new drugs approved for marketing in year 2007 by the Ministry of Health in Pakistan,³ six drugs were selected by random draw. The drugs drawn were capsule Imatinib, tablet Telithromycin, tablet Ropinirole, tablet Montelukast Sodium, tablet Somatriptan and inhaler Fluticasone Propionate. Of these, the last three drugs were selected because of their wide clinical usage and commercial availability, which was established through market surveillance. A detailed profile of information was prepared for each drug based on the information obtained from www.betterhealth.vic.gov.au.

GPs' knowledge regarding the cost, therapeutic usage and one common adverse effect of the mentioned drugs was explored through a standard questionnaire. For each drug, one correct option and three distracting options were given. The participants were requested to single out the correct option based on their knowledge.

The inclusion criterion for the participants was prescription of any one of the three mentioned drugs at least once in the preceding one-month. Response to each drug was considered as a separate entry; e.g. if same participant responded to questions regarding all three of drugs, three different entries were made. The survey was conducted from July to December 2008 in Karachi and Hyderabad. After obtaining informed consent, the participants were requested to fill a self-administered questionnaire at the time of first contact. Details regarding each participant's demographic characteristics and important aspects of his/her clinical practice (practice setting, years of experience, number of patients seen monthly) and their primary source of information for new drugs were also sought through the questionnaire.

The descriptive statistics were described as percent age in case of knowledge about each prescribed drug (correct vs. incorrect), primary source of information (medical text vs. colleagues vs. pharmaceutical companies), and qualification (graduate vs. post-graduate); and mean value ± standard deviation (SD) in case of clinical experience in years and monthly patient volume.

The associations between knowledge of participants about the therapeutic use and adverse effect of each prescribed drug and their primary source of information as well as level of qualification were tested through chi-square test. Participants who identified the correct therapeutic use and adverse effect of each prescribed drug based on their knowledge were compared with those who did not.

1. Institute of Neuropathology, University Hospital Zurich, Switzerland.
2. Department of Pharmacology, Alfaisal University, Riyadh, Saudi Arabia.
3. Department of Radiology, Brown University, Providence, USA.
4. Department of Otolaryngology, Combined Military Hospital, Rawalpindi.

Correspondence: Dr. Dileep Kumar Rohra, Apartment No. 9, Al-Khozama, Riyadh 11533, Kingdom of Saudi Arabia.
E-mail: drohra@alfaisal.edu

Received November 21, 2011; accepted February 06, 2013.

drug were compared to those who failed to identify the correct option on their clinical experience and monthly patient volume through Student’s t-test. Associations with $p < 0.05$ were considered significant at a pre-decided level of $± = 0.05$.

A total of 300 GPs (150 from each city) were approached. Of these, 182 consented to participate in the study and 131 were included based on the inclusion criteria. Out of 131, 21 responded to questions pertaining to only one drug, 47 to two drugs, and 63 to all three drugs resulting in 304 filled forms. Ten forms were discarded due to ambiguity of responses and a total of 294 entries were included in the final analysis.

Regarding qualification, 75.5% (n = 222) of the sample were MBBS while 24.5% (n = 72) had received some postgraduation training. The mean clinical experience of the population was 12.6 ± 8.8 years (range: 1 – 44 years). On an average, the participants had a monthly patient volume of 497.4 ± 397.6 (range: 50 – 1000 patients/month).

Pharmaceutical representatives and advertisements served as the primary source of information for a considerable fraction (67.3%, n = 198) of the study population. Nineteen point four percent (n = 57) of the participants identified medical texts (including internet) and the rest (13.3%, n = 39) accredited their colleagues as their primary source of information for drugs. Almost all (96.9%, n = 285) of the participants claimed to know the generic name of the selected drugs and an overwhelming majority (76.5%, n = 225) was averted to knowledge of the cost of drug.

The knowledge of the participants regarding the major therapeutic use and one most common adverse effect of the drug(s) along with the influence of the various attributes on the knowledge of the participants are presented in Table I and II. As depicted in Table I, only 61.2% and 40.8% response to questions regarding the appropriate therapeutic use and the common adverse effect, respectively, were correct. As shown in Tables I and II, the GPs who relied on the pharmaceutical companies as their primary source of information about drugs and those with lesser clinical experience were less likely to identify the appropriate adverse effect ($p < 0.05$).

Majority (59.8%) of the GPs failed to single out the common adverse effect of the drug(s) they had prescribed in the preceding one-month. The inadequacy of knowledge was significant for the GPs who identified pharmaceutical promotional material as their primary source of information for drugs.

Similar studies have previously been performed in other countries, which demonstrated significant deficits in knowledge of prescribers. An exploratory study of prescription practices in a hospital in western Nepal revealed a trend towards irrational prescription and hasty dispensing. Overall, the repertoire of international studies on this topic remains small which makes this study a valuable contribution. The study also reveals a significant association between use of pharmaceutical promotional material as an information source and lack of knowledge about the adverse effects of the drugs. This observation is closely related to that Ko et al. They investigated knowledge of primary care physicians about common drug-drug interactions and reported that those physicians who relied on pharmaceutical brochures for knowledge, showed significant deficits.
There is evidence which suggests a general deficiency in the level of knowledge of Pakistani GPs as depicted by their inability to correctly identify the WHO recommended treatment guidelines for tuberculosis. The results suggest that the GPs' inadequacy of knowledge about drugs may be related to an over-reliance on pharmaceutical advertisements for knowledge pertaining to drugs.

There are numerous factors which warrant caution while interpreting the results of this study. The sampling method for GPs is less than ideal and may have resulted in selection bias. None of the interviewers (AJ, AMZ, AJ) were blinded to the study design. Of the 300 GPs approached, only 182 consented to participate in the study at a modest rate of 60.7%, hence, a potential no-response bias could be there. Finally, it is important to consider that the GPs surveyed in this study practiced in Karachi and Hyderabad, the two biggest cities of the Sindh province of Pakistan. A substantial fraction of GPs in Pakistan practice in rural settings, where the availability of alternate information sources (medical texts, internet etc.) is limited. A greater inadequacy of knowledge is a valid possibility in the rural setting, and should be carefully considered while generalizing the results of this study.

It is important that authentic sources of information i.e., medical journals, drug formularies and drug bulletins should be made available for use by the clinicians in general practice in developing countries. Continuing medical education (CME) seminars can serve to educate the GPs as well. It will also be important to equip the GPs with the skill of critical appraisal of pharmaceutical promotional material. Focused interventions targeted at undergraduate as well as postgraduate level would be required for the purpose. The interventions may include simulated encounters, on-line aids and interactive group discussions. Additionally, a mechanism may be devised in which prescription at the level of primary care is regularly monitored by experts. A Norwegian study describes a program of self-audit of prescription practices in CME groups. It was shown that the program led to documentation of useful information pertaining to general prescription practices. The GPs rated the program as useful and influential.

In future, it will be important to investigate whether the suggested interventions lead to an improvement in physicians' knowledge about the drugs they prescribe and how does this improvement of knowledge translate into their prescription practices.

**REFERENCES**


