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Research Article

Comparison of drug advertisements published in Indian and foreign journals

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ABSTRACT

Background: Drug advertisements form one of the major sources for updating drug information by the medical professionals. It has been observed that Indian drug advertisements provide incomplete and poor quality of essential information. However, existing information on comparison of drug advertisements in Indian and foreign journals is limited. Hence, this study was planned to compare the drug advertisements published in Indian and foreign journals.
Methods: A total of 200 drug advertisements, 100 each from Indian and foreign journals, were randomly selected excluding those of medical devices, surgical appliances, nutritional supplements and ayurvedic drugs. The drug advertisements from two sources were compared for drug groups, compliance to 'Ethical criteria for medicinal drug promotion' of World Health Organization (WHO), retrievability of cited reference(s) and mention of any additional information.
Results: Drug groups advertised frequently in the Indian journals were those used for chronic diseases whereas chemotherapeutic agents topped the list in foreign journals. Brand names were mentioned in 100% advertisements in both categories of journals whereas information on other ingredients known to cause problems was not mentioned in any of the studied advertisements. Overall, compliance to WHO guidelines by advertisements was 54.6% in Indian journals and 68.2% in foreign journals. The two categories of journals didn't differ significantly in retrievability of cited reference(s) and additional information except for information on drug storage which was significantly more mentioned in Indian journals.
Conclusions: Drug advertisements in both Indian and foreign journals were incomplete for updating drug information by medical professionals.

Keywords: Drug advertisements, Drug promotion, Ethical criteria, WHO

INTRODUCTION

Drugs play a vital role in prevention and treatment of various diseases in humans and thus they form an important resource and must be used rationally i.e. patients should receive these appropriately according to their clinical needs, in doses that meet their individual requirements, for an adequate period of time, and at the lowest cost to them and their community as suggested by World Health Organization (WHO).[1] It has been observed by WHO that worldwide, more than 50% of all medicines (drugs) are prescribed, dispensed or sold inappropriately.[2]

New drugs are regularly being added to the market in large number. In India, Central Drugs Standard Control Organization (CDSCO) has approved about 500 new drugs in last five years.[3] Flooding of market with so many newer drugs is a challenge for the busy medical professionals to keep updating themselves on these. The important sources of drug information for the medical professionals usually include information provided by

medical representatives of pharmaceutical companies, drug monographs, and drug promotional literature like advertisements in journals, drug brochures, direct mailing etc.[4] Since the pharmaceutical companies have commercial interest in promoting their products, these sources usually highlight the information which encourages the medical professionals to prescribe these products rather educating them[5] and have potential for inducing inappropriate prescribing practices and increasing health care costs[6] as these newer drugs are usually relatively costly.

Ideally, all promotion making claims concerning drugs should be reliable, accurate, truthful, informative, and up to date with no misleading or unverifiable statement or omission likely to induce risks and the word "safe" should only be used if properly qualified.[7] A number of guidelines viz. "Ethical criteria for medicinal drug promotion" by WHO, "Code of pharmaceutical marketing practices" by International Federation of Pharmaceutical Manufacturers and Association (IFPMA) have been issued for regulation of drug promotional activities at international level so as to support and encourage the improvement of health care through the rational use of drugs.[8] However, there is no legislation in India that makes these guidelines to be strictly complied by pharmaceutical companies. A number of studies have shown that the drug promotional literature in India often provides incomplete and poor quality of essential information.[6,9,10] However, existing information on comparison of drug advertisements in Indian and foreign journals (i.e. journals published from countries other than India) is limited. Hence, this study was planned to compare the drug advertisements published in Indian and foreign journals.

METHODS

All the drug advertisements published in Indian and foreign medical journals which were available in print version in the college library during Jan 2014 to June 2014 were screened and a total of 200 drug advertisements, 100 each from Indian and foreign journals, were randomly selected and included in the study. Any drug advertisement referring to medical devices, surgical appliances, nutritional supplements and ayurvedic drugs was excluded from the study. If any advertisement was published more than once in the journal, the duplicate advertisement was eliminated. However, if two different advertisements appeared for the same drug product then both were included in the study. The included advertisements were compared in terms of drug groups, compliance to "Ethical criteria for medicinal drug promotion" set by the WHO (1988),[7] retrievability of cited reference(s) using various electronic databases like PubMed, Google search etc. and mention of any additional information.

As per "Ethical criteria for medicinal drug promotion" set by the WHO (1988), drug advertisement should mention: Name(s) of the active ingredient(s) (international nonproprietary or approved generic name), brand name, content of active ingredient(s) per dosage form or regimen, name of other ingredient(s) known to cause problems, therapeutic uses, dosage regimen, side effects, major adverse drug reactions, precautions, contraindications, warnings, major interactions, references to scientific literature, name and address of manufacturer or distributor.

A reference was considered 'retrievable' if a softcopy or hardcopy of the cited article or its abstract was available in the public domain. The data collected were analyzed by Fisher's exact test included in GraphPad software. The level of significance was set at $P < 0.05$.

RESULTS

Advertised drug groups:

The drug groups for which advertisements appeared in Indian journals in decreasing order were: drugs affecting - endocrine system (32%), skin (24%), cardiovascular system (22%), respiratory system (18%) and 'mineral & vitamins' (4%).

On the other hand, foreign journals exhibited following decremental sequence of drug groups: chemotherapeutic agents (38%) followed by drugs acting on – skin (22%), central nervous system (18%), endocrine system (12%), cardiovascular system (6%) and gastrointestinal system (4%) (Table1).

Table 1: Drug groups advertised in Indian & foreign journals (n= 100).

Sr. No	Drug groups	Indian Journal (%)	Foreign Journal (%)
1	Drugs affecting endocrine system	32	12
2	Drugs affecting skin	24	22
3	Drugs affecting cardiovascular system	22	6
4	Drugs affecting respiratory system	18	-
5	Chemotherapeutic agents	-	38
6	Drugs affecting central nervous system	-	18
7	Drugs affecting gastrointestinal system	-	4
8	Minerals and vitamins	4	-

Compliance to 'Ethical criteria for medicinal drug promotion' of WHO:

The compliance to 'Ethical criteria for medicinal drug promotion' of WHO by the advertisements published in Indian and foreign journals is as per table 2. No statistical significant difference was observed in two categories of journals for following information: Brand name, other ingredients known to cause problems, dosage form. However, in advertisements appearing in Indian journals compared to foreign journals, there was significant omission of vital information on generic name ($p<0.05$), therapeutic uses ($p<0.05$), side effects and major adverse drug reactions ($p<0.0001$), precautions ($p<0.0001$), contraindications ($p<0.05$), warnings ($p<0.0001$), major interactions ($p<0.0001$) and references to scientific literature ($p<0.0001$). At the other end, there was significant omission of content of active ingredients ($p<0.0001$), regimen ($p<0.05$) name of the manufacturing or distributing company ($p<0.05$) and address of the manufacturing or distributing company ($p<0.0001$) in advertisements published in foreign journals as compared to Indian journals.

The most neglected parameter, in both Indian and foreign journals, was information on other ingredients known to cause problems. Overall, compliance to guidelines of WHO by advertisements was 54.6% in Indian journals and 68.2% in foreign journals.

Table 2: Compliance to ethical criteria for medicinal drug promotion of WHO (n=100).

Sr. No	Criteria	Indian Journal (%)	Foreign Journal (%)
1	Brand name	100	100
2	Generic name	84	94*
3	Content of active ingredients	88	55****
4	Other ingredients known to cause problems	0	0
5	Dosage form	95	95
6	Regimen	45	34*
7	Therapeutic uses	89	97*
8	Side effects & major ADRs	33	93****
9	Precautions	27	91****
10	Contraindications	31	46*
11	Warnings	25	90****
12	Major interactions	14	48****
13	References to scientific literature	26	73****
14	Name of manufacturer or distributor	99	92*
15	Address of the manufacturer or distributor	65	18****

*p <0.05, **p<0.01, ***p<0.001, ****p<0.0001, ADR: Adverse drug reactions

Table 3: Additional information mentioned in advertisements (n=100).

Sr. No	Criteria	Indian Journal (%)	Foreign Journal (%)
1	Drug toxicity and its management	5	7
2	Drug storage	17	2***
3	Drug presentation	8	8

*p <0.05, **p<0.01, ***p<0.001, ****p<0.0001

Retrievability of references and mention of additional information:

Reference retrievability didn't differ significantly in two categories of journals. Additional information mentioned in drug advertisements is as per Table 3. No statistical significant difference was observed in two categories of journals for drug toxicity and its management, as well as drug presentation. However, information on drug storage was significantly omitted in advertisements published in foreign journals ($p<0.001$) compared to Indian journal.

DISCUSSION

Rational use of drugs has always been the top priority globally and to achieve this, medical professionals need to have a thorough knowledge about the drug(s) they intend to prescribe or use.[2] Unfortunately, most of the times, medical professionals due to their busy schedule

have to depend on drug advertisements for updating their knowledge and pharmaceutical companies make the best use of this opportunity in promoting their products and making higher financial gains.

Since drug advertisements are different from the ordinary advertisements in the sense that drugs are being ordered/prescribed/suggested by a person different than who pays the bill, hence the responsibility of physician is increased further.

In this study, we have observed that drug groups more commonly advertised in Indian journals were those which are used for chronic illnesses i.e. those affecting endocrine system, cardiovascular system, respiratory system etc. compared to foreign journals suggesting that companies advertising in Indian journals are trying to assure long term financial benefits as treatment of many of such diseases is lifelong.

Another observation in this study was more incomplete compliance of advertisements appearing in Indian journals to ethical criteria for medicinal drug promotion of WHO compared to foreign journals. Though the advertisements in two categories of journals didn't differ significantly in parameters like brand names, other ingredients known to cause problems, dosage form, but mention of generic name, therapeutic uses, side effects, major adverse drug reactions, precautions, contraindications, warnings, major interactions and references to scientific literature was significantly more omitted in Indian journals than in foreign. The omission of generic name may be with the intention to enforce the use of the same brand name repeatedly and put a limitation on tendency to use alternative products with same composition from other pharmaceutical companies thus promoting the sale of the same pharmaceutical product in the interest of the advertising company. Most of advertisements with no mention of therapeutic use have mentioned about the pharmacological class of the product and action in broad sense, thus encouraging the use of the product in a number of similar conditions including even those for which usefulness of drug has not yet been proved. Avoidance of information on safety parameters like side effects, major adverse drug reactions, precautions, warnings, major interactions in Indian journals more than in foreign journals might be not to discourage the prescribers from prescribing that product. Mali et al (2010) have also observed mention of safety parameters only in 8.8% of Indian advertisements.[6] Lack of references in Indian journals' advertisements more than foreign journals increases the risk of claims being false. However, compared to another similar study by Lal A et al (1997), the compliance of Indian advertisements to WHO criteria, in this study, has been found to be higher in most of parameters including safety parameters.[11]

Fortunately, advertisements in Indian journals were significantly better in mentioning of content of active ingredients, regimen, name and address of manufacturer or distributor.

Additional information mentioned in advertisements from two categories of journals was significantly different only in respect of drug storage for which advertisements in Indian journals performed much better than foreign journals. Though information about drug toxicity and its management as well as drug presentation was insignificantly different in both categories, the mention of this information was very infrequent in all the studied advertisements.

To overcome this lacuna, critical appraisal of drug advertisements should be introduced more stringently in undergraduate teaching in medical colleges, journals should also have a board of experts with pharmacologist as one of the member to review advertisements before publishing them, drug information centers may be established across the country, internet facilities be provided in all health care centers to access information instantly from authentic sources, and drug formularies be made available & revised periodically at local hospital levels for ready reference. In addition, medical professionals may also be made to attend drug updates or continuing medical education (CME) programs regularly.

Situation can be further improved, if all medical professionals take reporting of poor adherence of guidelines on advertisements to drug controller authority, as their moral responsibility so that necessary legal steps can be taken to discipline the guilty companies.

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