Original Article

Evaluation of drug promotional literatures using WHO guidelines

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Abstract

Aim: To evaluate the scientific and ethical status of the drug promotional literatures available in Indian market using WHO criteria. **Materials and Methods:** A cross-sectional observational study was carried out in department of pharmacology for evaluation of 142 drug promotional literatures by WHO-criteria, collected randomly from various regions of Gujarat. They were also analyzed for different claims, catchy terms, quality of paper and print, and representation of data with statistics/diagram/table. The references cited in the literatures were evaluated for their source, year of publication, authenticity, and retrievability. **Results:** 49% of literatures were designed for promotion of fixed dose-drug combinations (FDCs). Chemotherapeutic agents and cardiovascular drugs were most promoted drug groups (19% each). None of the drug promotional literature fulfilled all the WHO criteria. Description of pharmacological effects and mechanism of action was not given in 54% and 80% of literatures, respectively. Majority (80-90%) were lacking information related to indications, correct dosage regimen, and dose adjustments in special situations. Most neglected aspect of drug promotion was mentioning about adverse drug reactions, drug interactions, precautions, and over dosage (<10%). False/tall claims, catchy/broken statements were given in 86% and 72% of literatures, respectively. Irrelevant diagrams were shown in 69%, statistical data for support in 7%, and tabular presentation in 5% of literatures. References were cited in 67% of literatures, of which 98% were from indexed-journals and were retrievable. **Conclusion:** Critical review of drug promotional literatures can make drug prescribing more effective. If drug promotional literatures fulfill all WHO guidelines, it can make promotion ethical and rational.

Key words: Ethical drug promotion, promotional literature, WHO criteria for evaluation of drug promotion

INTRODUCTION

According to World Health Organization's (WHO), medicinal drug promotion refers to "all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase, and/or use of medicinal drugs."[1] Pharmaceutical companies are interested in promoting the sale of new drugs.[2] The primary goal of pharmaceutical advertisements is to convince physicians to prescribe the manufacturer's product.[3] A major marketing technique used by pharmaceutical companies is direct-to-physician (DTP) marketing.[2,4] Different modes of drug promotion include visual aids, flip charts, leave-behinds, advertisements, gifts, and audio-visuals for promotion of drugs.[3] There are universally applicable baseline standards coded by International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) for marketing practice, and these standards apply to all promotional communications from the pharmaceutical industry to the medical profession. In India, promotional

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activities by pharmaceutical companies are governed by Organization of Pharmaceutical Producers of India (OPPI), self-regulatory code of pharmaceutical marketing practices, January (2007) and by National legislation.[5] Adherence to the code of conduct is a condition for membership of manufacturers' association. However, many studies have illustrated that information disseminated through drug advertisements is inconsistent with the code of ethics.[2]

There is concern about the influence of DTP marketing on physicians' prescribing practices and its consequences, such as the physician's ethical obligation to the patient and health care costs. Studies have repeatedly shown that pharmaceutical promotion influences physician behavior.[4] Scientific data in the public domain should be made available to prescribers and any other person entitled to receive it on request, as appropriate to their requirements. Promotion in the form of financial or material benefits should not be offered to or sought by health care practitioners to influence them in the prescribing drugs.[1] All promotion making claims concerning medicinal drugs should be reliable, accurate, truthful, informative, balanced, up-to-date, and capable of substantiation and in good taste. They should not contain misleading or unverifiable statements or omissions likely to induce medically unjustifiable drug use or to give rise to undue risks. The word "safe" should only be used if properly qualified.[1]

The reality at present is that most health professionals get their information from commercial sources, usually through an extensive network of medical representatives.[6] The pharmaceutical companies claim that their new formulations are superior to existing, effective, and inexpensive products, to which prescribers and consumers are familiar. They target prescribers through weekly or monthly visits, distributing samples and attractive, eye-catching brochures. These materials are often misleading and confusing. The intensive marketing motivates doctors to prescribe the new products, often without verifying whether the claims made are justified.[6,7]

However, the information contained in promotional material may be inadequate or altogether inaccurate and when these are accepted without any question, can contribute to irrational prescribing. In an attempt to support and encourage the improvement of health care through the rational use of drugs, WHO has published ethical criteria for medicinal drug promotion and has recommended their implementation to its member states. Since promotional activities influence the prescribing behavior of the health care providers, it is of utmost importance to critically analyze the promotional material of the drugs in step with the growing popularity of evidence-based medicine.[8,9]

The accuracy and usefulness of drug advertisements has been the subject of debate for many years.[8] Growing concern about this situation and its negative impact on rational drug use, the need exists to alert the medical professionals to the extent of the problem. Therefore, this study has been taken up with the aim of evaluating the scientific and ethical status of the drug promotional literatures available in Indian market using WHO criteria.

MATERIALS AND METHODS

This was a cross-sectional observational study carried out in the department of pharmacology, SBKS Medical Institute and Research Center and associated Dhiraj General Hospital, a tertiary care teaching rural hospital affiliated with Sumandeep Vidyapeeth, Gujarat after its approval from the institutional ethics committee.

The study was conducted to find out the scientific and ethical status of drug promotional literatures presented to prescribers and its concurrence to 'WHO criteria for ethical medicinal drug promotion, 1988.' A total of 142 drug promotional literatures (brochures) were collected randomly from out-patient department (OPD) of practicing physicians of different regions of Gujarat like Rajkot, Ahmedabad, and Vadodara including Dhiraj General Hospital for the period of one month starting from1st August, 2011. These literatures were collected from different OPDs of medicine, surgery, pediatrics, orthopedics, and obstetrics and gynecology departments.

Literatures promoting medicinal devices and equipments (insulin pump, blood glucometer, etc.), orthopedic prosthesis and ayurvedic medicines, drug monographs, reminder advertisements, drug lists, and literature promoting more than two brands were excluded from the analysis.

All the literatures were evaluated by WHO criteria for fulfillment of each of the following parameters:[1]

- The name(s) of the active ingredient(s) using either international non-proprietary names (INN) or the approved generic name of the drug
- The brand name
- Content of active ingredient(s) per dosage form or regimen

- Name of other ingredients known to cause problems;
- Approved therapeutic uses
- Dosage form or regimen
- Side-effects and major adverse drug reactions
- Precautions, contra-indications, and warnings
- Major interactions
- Name and address of manufacturer or distributor
- Reference to scientific literature as appropriate.

All the literatures were evaluated for accuracy and completeness of the information for the each parameter mentioned above. In addition to this information, they were also analyzed for different claims made, catchy terms used, quality of paper and print, different diagrams given, and statistical analysis and tables given for the promotional product. The references mentioned in the literatures were evaluated for year of publication authenticity and retrievabilty.

RESULTS

Out of total 142 drugs promotional literatures screened, 42 were excluded as per exclusion criteria and rest 100 were evaluated for its concurrence with WHO criteria. These literatures were collected randomly from different locations of Gujarat state. Out of total 100 literatures, 41 were collected from 15 different practitioners of Ahmedabad district, 30 were collected from different 10 practitioners of Rajkot district, 19 were collected from 5 different practitioners of Vadodara district, and 10 were collected from different OPDs of Dhiraj General Hospital, Piparia. These literatures were belonging to 34 different pharmaceutical companies located in different parts of India.

Out of all gathered drug promotional literatures, 51 were designed for promotion of a single drug formulations and rest 49 were for fixed dose-drug combinations (FDC).

Table 1: Categorization of drug promotional literatures according to pharmacological groups (*n*=100)

Pharmacological class of drugs	*n*=%
Antimicrobial agents	19
Cardiovascular agents	19
Agents acting on gastrointestinal tract	16
Agents affecting endocrine system	11
Agents affecting respiratory system	11
Analgesic agents	09
Agents acting on central nervous system	05
Agents affecting blood	04
Miscellaneous agents*	06
Total	100

*Miscellaneous agents included local anesthetic, multivitamins, interleukin-1 blocking agent, and antioxidants

Categorization of drug literatures according to pharmacological groups is presented in Table 1. Chemotherapeutic agents and cardiovascular drugs were most promoted drug groups (19% each) followed by drugs acting on gastrointestinal tract (16%), agents affecting endocrine system and respiratory system (11% each).

None of the drug promotional literature fulfilled all the WHO criteria. As shown in Table 2a, majority of the literatures had mentioned INN of each active ingredient (98%) and recommended dosage form (84%). Almost half of them had not mentioned description of pharmacological effects (54%), and 80% of literatures had not mentioned mechanism of drug action. It was noted that majority of literatures (80-90%) were lacking in information related to indications, dosage regimen, duration of therapy, and dose adjustments in special situations like pregnancy, lactation, liver or kidney diseases. Most neglected aspect of drug promotion was information about adverse drug reactions, drug interactions, precautions, and over dosage (>90%).

Manufacturer's name and addresses were mentioned in almost half of the literatures (52%). The cost of the drug was mentioned in only 10% of literatures. Out of all the literatures, 86% were containing one or more false/tall claims and 72% were containing catchy/ broken statements. Paper quality, print, and color were excellent in all 100 literatures. Irrelevant diagrams were shown in 69% of them. Statistical presentation of data related to the drug under promotion was found in 7% of literatures, and tabular presentation of the same was given in 5% only [Table 2b].

All the literatures were specifically evaluated for the references cited. References were mentioned in 67% of the collected literatures. In these 67 literatures, total numbers of references cited were 201. Out of these, 125 were from journal articles, 47 were from textbooks, 8 were from websites, and rests 21 were from other sources of information. In 20.89% of literatures, references were less than 5 years old from the year 2011 and can be considered as recent. In 79.11% of literatures, references were of more than 5 years old from the year 2011. In 98.51% of the literatures, references were from indexed journals and were retrievable [Table 3].

Table 2a: Analysis of literatures according to WHO criteria (*n*=100, *n*=%)

Pharmacological information	Completely mentioned	Incompletely mentioned	Not mentioned	Total
INN of each active ingredient	98	-	02	100
Recommended dosage form	84	-	16	100
Pharmacological effects	33	13	54	100
Mechanism of action	13	07	80	100
Indications	59	33	08	100
Doses for adults and children	18	00	82	100
Dosing interval	13	00	87	100
Duration of therapy	10	00	90	100
Dose adjustment in special situations	07	00	93	100
Contraindications	07	00	93	100
Adverse effects	08	00	92	100
Precautions	06	00	94	100
Drug interactions	02	00	98	100
Over dosage	03	00	97	100

INN: International non-proprietary names; WHo: World Health Organization's

Table 2b: Analysis of literatures according to WHO criteria (*n*=100, *n*=%)

Pharmaceutical and related information	Mentioned	Not mentioned
Name	100	00
Address	52	48
Cost	10	90
False/tall claim	86	14
Catchy/broken statements	72	28
Paper quality, print, and color	Excellent in 100	-
Irrelevant diagrams	69	31
Statistical representation	07	93
Tabular representation	05	95

WHo: World Health Organization's

Table 3: Analysis of literatures for references cited

Parameter	Frequency (%)
References cited	67 (67)
Total number of references	201
Source of the reference	
Journal articles	125
Text books	47
Web sites	08
Others	21
<5 years	42 (20.89)
>5 years	159 (79.11)
Indexed	198 (98.51)
Retrievable	198 (98.51)

DISCUSSION

Every year, many new drugs enter the Indian market. Most are "me-too" products, not genuine innovations. They join more than 20,000 drug formulations already in the market.[6] Direct-to-physician (DTP) marketing is one important facet of the promotion of pharmaceuticals[8] The pharmaceutical industry, in general and large international companies in particular, has kept abreast of developments in the evidence-based medicine movement and have tried to incorporate the movement's tenets into their promotional strategies.[9] The information provided for drug promotion should be accurate, scientific, and evidence-based to keep the doctors informed about the company's products and all related information. The drug promotional practices carried out by the pharmaceutical industry are more of a commercial relationship between prescriber and pharmaceutical company. Although assessment of the truthfulness of the drug promotional claims is very complex, we tried to analyze this keeping in mind the objectives of the evidence-based medicine. Each claim was analyzed objectively with the help of available evidences in the medical literature for its concurrence with WHO guidelines.[8]

Most health professionals are dependent on commercial sources of drug information from medical representatives, drug advertisement brochures etc., and it has great impact on prescribing behavior.[6] It was observed that despite the apprehensions about the truthfulness of the advertised claims, the general practitioners rate the pharmaceutical advertisement as the most important source of information about the drugs. Furthermore, a majority of physicians were of the view that drug marketing has undoubtedly an influence on their prescribing practices.[8] Even prescribers who think that they obtain their knowledge from the scientific literature could be influenced by promotional sources without being aware of it.[10]

On the basis of the observations of this study, it was seen that majority of the literatures had mentioned INN of each active ingredient (98%) and recommended dosage

form (84%). The essential part of pharmacological information like pharmacological effects and mechanism of action were missing in 54% and 80% of literatures, respectively. Out of all the literatures, 80-90% were lacking in information related to indications, dosage regimen, duration of therapy, and dose adjustments in special situations like pregnancy, lactation, liver or kidney diseases etc., Most neglected aspect of drug promotion was information about adverse drug reactions, drug interactions, precautions, and over dosage (>90%). These findings coincide with the finding of a Russian study[11] re porting less than 5% of literatures mentioning adverse drug reactions and also coincides with a similar study carried out in other parts of India.[2] This suggests that unethical drug promotion is wide spread in India as well as over the world, which needs concern of all health authorities.

Out of all the literatures, 86% were containing one or more false/tall claims and 72% were containing catchy/ broken statements in this study. This aspect of the drug promotion was also highlighted in other similar studies.[2,8,12] These falls/tall claims may misguide the prescribers.

Quality of paper, print, and color were excellent in all (100%) literatures in our study, but irrelevant diagrams were shown in 69% of them, findings very similar to other studies.[2,3,13] We also evaluated that statistical representation of data related to the drug under promotion was given in only 7% of literatures, and tabular representation of the same was given in only 5% of literatures, which are important aspects of safety of drug. In this study, references were cited in 67% of the collected literatures only, showing that 33% of them not even think that references should support their claims. This is in concurrence with a similar other Indian study.[2] The promotional brochures were full of unsubstantiated claims regarding safety or efficacy, and those claims were therapeutically irrelevant also. Important information regarding adverse drug reactions, contraindications, or drug interactions was missing. Moreover, the information was given in fine print and hard to read as shown in other study[14] also.

More than $ 11 billion is spent each year by pharmaceutical companies in promotion and marketing, $ 5 billion of which goes to sales representatives. It has been estimated that $ 8000 to $ 13000 is spent per year on each physician for drug promotion. The huge amount spent by pharmaceutical industry for drug promotion escalates the health care costs.[7]

It is suggested that physicians need to be aware of the flaws in promotional literature before accepting it as valid information. Such marketing may influence physician-prescribing behavior without necessarily benefiting the patient. Such marketing may also lead to inappropriate prescribing practices.

In developed countries like UK, Australia, and Canada, it is required to observe a code of practice in marketing as a signatory condition for membership of the association.[10] India has also set up regional ethics committee to collect complaints against unethical drug promotion advertisements at Mumbai, New Delhi, Chennai, and Chandigarh which forward these complaints to drug controller authority to take necessary legal steps to discipline guilty companies.[6,11] Forwarding more complaints about irrational promotion to regulatory authority by cautious doctors might lead pharmaceutical industry to incline toward self-regulation. Therefore, it is a responsibility of a practicing physician to critically evaluate the information given in a drug promotional literature before taking it as a scientific source of information, and any flaws, if identified, should be reported to appropriate authority.

In this study, though literatures were randomly collected from different regions of Gujarat, they give a presentation of scenario in Gujarat state only; and small sample size being a limitation of the study. Further larger studies targeting the same aspect covering different regions of India are required. Some remedial measures to this issue are prescriber's education, reinforcement of existing laws, and development of guidelines and their implementation by pharmaceutical companies for drug promotion. Combined efforts of physicians, pharmaceutical industries, and regulatory authority can help in ethical promotion of a drug and rational prescribing.

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