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Title - Assessment of knowledge, attitude, and practices about prescribing fixed dose combinations among doctors - An observational study

Author-

1. **Dr. Priyesh Marskole** Associate Professor, Department of Community Medicine NSC Government Medical College Khandwa M.P
2. **Dr Vaibhav Singh Chauhan** Assistant Professor Department Of Pharmacology, NSCB Medical College, Jabalpur (MP)
3. **Dr Parul Trichal** Assistant Professor Department of Obstetrics and Gynaecology, Govt. Medical College, Ratlam, Madhya Pradesh, India.
4. **Dr Pradeep Dubey**,** Assistant professor Department of Orthopaedics Govt. Medical College, Ratlam, Madhya Pradesh, India.
5. **Dr. Sachin Parmar,** Assistant Professor, Department of Community Medicine, N.S.C Government Medical College, Khandwa, M.P.

****Corresponding Author**

Corresponding Author Details
DR PRADEEP DUBEY,**
Assistant professor
Department of Orthopaedics
Govt. Medical College, Ratlam, Madhya Pradesh, India.
drpradeepdubey85@gmail.com

ABSTRACT

Patients are more likely to take their medication when it is combined into a fixed dose combination (FDC). However, the irrational use of FDCs poses serious risks to public health. Knowledge of how to prescribe FDCs is crucial, as residents play a pivotal role in patient management at tertiary care facilities. From February 2016 to July 2016, a cross-sectional observational study was carried out at tertiary care centre in Central India. Hypertensive patients taking anti-hypertensive fixed-dose combinations (FDCs) were recruited for the study; 92 prescriptions met the inclusion and exclusion criteria and were included in the trial. Nonetheless, 53 percent of the medical professionals lacked understanding about the efficacy of specific FDCs. Textbooks and scholarly periodicals were the usual go-tos for research. Seventy-three percent of locals surveyed thought FDCs should be legally sold. According to the doctors' estimates, antimicrobial FDCs, specifically amoxicillin + clavulanic acid, account for the vast majority of prescriptions. Using a piloted questionnaire, researchers in Jammu conducted a cross-sectional study at a university-affiliated medical centre (Jammu and Kashmir). In order to gauge respondents' FDC-related KAP, a questionnaire was developed. Researchers included physicians from the Departments of Medicine, Obstetrics and Gynecology, Surgery, Pediatrics, Skin, and Psychiatry who were employed at the hospital during the study period and who provided written informed permission. Appropriate statistical tests were used to assess the data.

1. INTRODUCTION

Two or more medications in a single administration form constitute a fixed dose combination (FDC). A new FDC requires clinical studies before it may be released to the public in accordance with the Drugs and Cosmetics Act of 1940. Compliant patients are more likely to experience positive outcomes from therapy for chronic diseases like hypertension. Simplifying the prescription schedule with fixed-dose combinations may increase patient compliance. Furthermore, the combination of two medications with a synergistic mode of action into a fixed-dose combination (FDC) may offer benefits from both agents while mitigating some of the side effects associated with using each drug alone. Therefore, in chronic diseases like hypertension with complex origin, fixed-dose combination medicines with complimentary mode of action could be considered as an appropriate therapy.

Patients with hypertension for whom monotherapy has not resulted in a satisfactory reduction of BP (Blood Pressure) are frequently prescribed combination therapy. Studies have shown that blood pressure (BP) can be successfully controlled in 60% of hypertensive persons when a combination of two antihypertensive drugs is used. Triple fixed-dose combos are used

when two-drug combinations have failed to manage patients' blood pressure. As the first triple fixed dose formulation available in the United States, it combines reserpine, apresoline, and hydrochlorthiazide into a single pill. In July of 2010, the FDA authorised Tribenzor, a fixed-dose combination of amlodipine, olmesartan medoximil, and hydrochlorthiazide, for use in all patients with obesity and hypertension.

The reasonableness or otherwise of FDCs is currently the subject of heated discussion. Whether a shareholder abuses their power or uses it responsibly depends on them. Drugs in a fixed-dose combination (FDC) should have separate modes of action, have similar pharmacokinetics, and not exhibit supra-additive toxicity to any of the constituents. [5] In therapeutic settings, it is becoming more common to prescribe FDCs. The following are some examples of improper use: Industry's focus on profits and a lack of seriousness from other healthcare stakeholders have led to a lack of progress toward more rational medication therapy. In addition, both patients and clinicians lack the necessary awareness and perspective. [5-7] Inappropriate use of FDCs can result in undesirable side effects, higher treatment costs, the development of drug resistance, and, in the worst case scenario, treatment failure.

2. SYSTEM STUDY

Although taking medication is often thought of as a private matter, it actually involves a number of different people: the clinician, who is responsible for making a diagnosis and writing a prescription as well as providing information about the medication; the patient, who seeks medical attention and faces issues with the availability, cost, and ease of using the medication; and the healthcare system. The medical community has long placed a premium on enhancing patients' experiences with their medications, and they have done so by focusing on a number of different fronts. Yet the situation is far from perfect, making it imperative that researchers keep digging into the issue until they find a workable answer. Key difficulties have been zeroed in on in an effort to hone down on the chosen subfield of hospital formulary as a means of enhancing pharmaceutical utilisation.

2.1 Overview of pharmaceutical industry

The past half-century has seen a marked uptick in global health, thanks in large part to technological advances. As a result of improvements in public health, average life expectancy has risen as well. 3 Pharmaceutical firms have a larger duty to "do no harm," which they do by being honest and upholding the law and human rights.

According to a pharmaceuticals industry study report, India's medicines market ranks third in volume and thirteenth in value. Branded generics account for between seventy and eighty percent of the market. Over the next five years, India Ratings, a subsidiary of Fitch Group, predicts that the pharmaceutical business in India would expand at a CAGR of 20%. According to market research firm AIOCD Pharma softtech AWACS, Gujarat's pharmaceuticals market increased at the fastest pace in November 2014, at 22.4%, above the industry growth average of 10.9%.

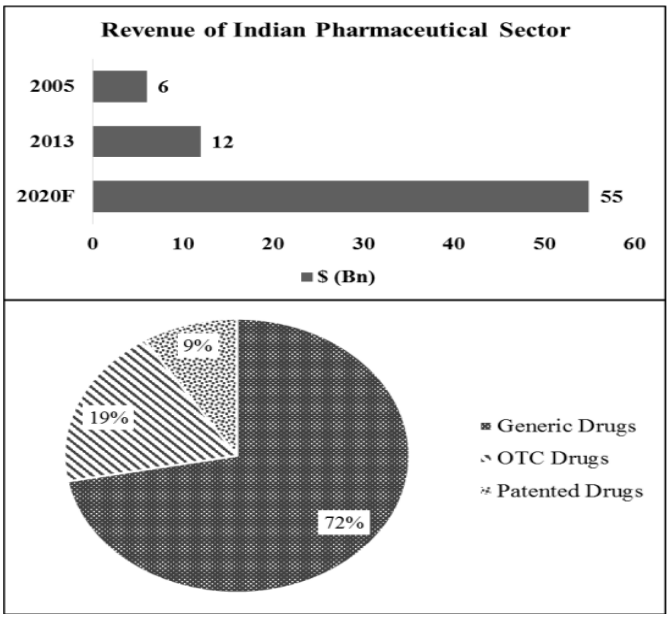

Figure 1: Revenue share of Indian pharmaceuticals sub segments

By releasing the Indian Pharmacopeia 2015 Addendum, the Indian government is making strides in improving public health. Improvements in medicine quality would have a positive effect on public health and speed up the expansion of the pharmaceutical industry, so this annex is quite welcome.

India's government has unveiled a plan called "Pharma Vision 2020" with the goal of becoming a world powerhouse in the production of pharmaceuticals from start to finish. It has sped up the process for approving new facilities, encouraging further investment. Further, the government has also put in place measures such as the Drug Price Control Order and the National Pharmaceutical Pricing Authority to address the issue of affordability and availability of medications.

It is not just in the United States where the healthcare industry has been recognised for its significance; similar conclusions have been drawn in other countries. The pharmaceutical industry has a significant opportunity to contribute to cost-effective health care. Through the development of novel cures to replace the less efficient, older, or more expensive drugs, corporations with a strong focus on research can have a significant impact on economies. Recent legislation passed by the U.S. federal government aims to reduce the soaring expense of public health care.

3. METHODOLOGY

From February 2017 to April 2017, researchers at from tertiary care centre of central India administered a questionnaire to medical professionals in the departments of medicine, surgery, paediatrics, obstetrics and gynaecology, skin and venereal diseases, and psychiatry. Eighty-three doctors were asked to fill out the survey, and 74 responded (for an 89.1 percent response rate). The study's goals were explained to participants, and they were reassured that their responses would be kept confidential. It was entirely optional, and no payment was made for taking part. The information was gathered from the participants using a prevalidated questionnaire that contained both open-ended and closed-ended questions about their familiarity with, opinion of, and experience with FDCs in prescribing. [8] Descriptive statistics were used for the analysis. Frequencies and percentages were used to illustrate the outcomes.

Inclusion criteria

- Patients of either sex who are hypertensive and younger than 18 years old who visit the cardiology outpatient clinic.
- And who were taking a prescribed amount of medication to lower their blood pressure.

Exclusion criteria

- Patients using monotherapy for hypertension who were under the age of 18 and whose medical records were insufficient.
- Not to mention others who were not interested in taking part in the study.
- Women who are expecting or who are breastfeeding.

The demographic profile of the patients, the pattern of the prescribed FDCs in hypertension, and other data were collected by analysing the prescriptions of outpatients who visited the cardiology department. Assessment of the presence of the active pharmacological ingredient, validation by drug regulatory authorities, and evaluation of the FDCs' rationale using the detailed seven-point criteria developed by Panda et al. Panda et al7-point .'s criteria assign a maximum score of 14, with 2 points possible for each criterion; a score of 8 or higher is regarded reasonable.

4. RESULTS AND ANALYSIS

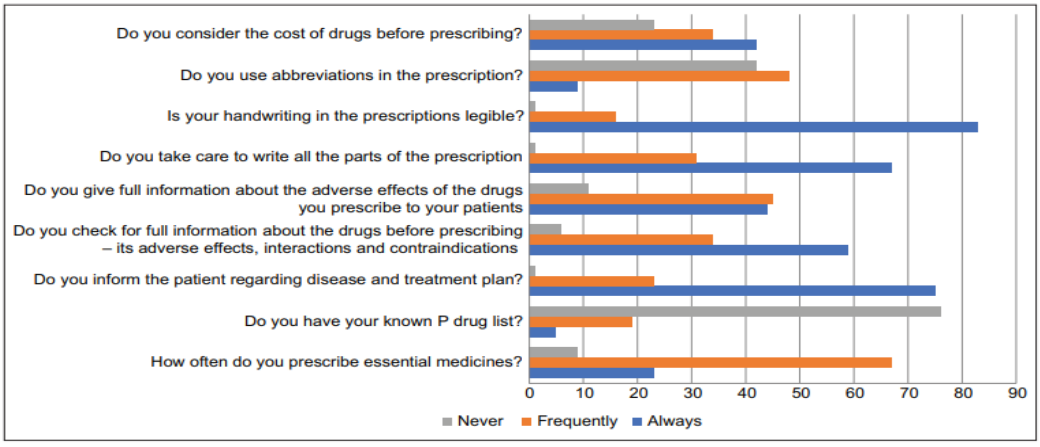

Figure 2: Results showing attitude of Interns towards RUM

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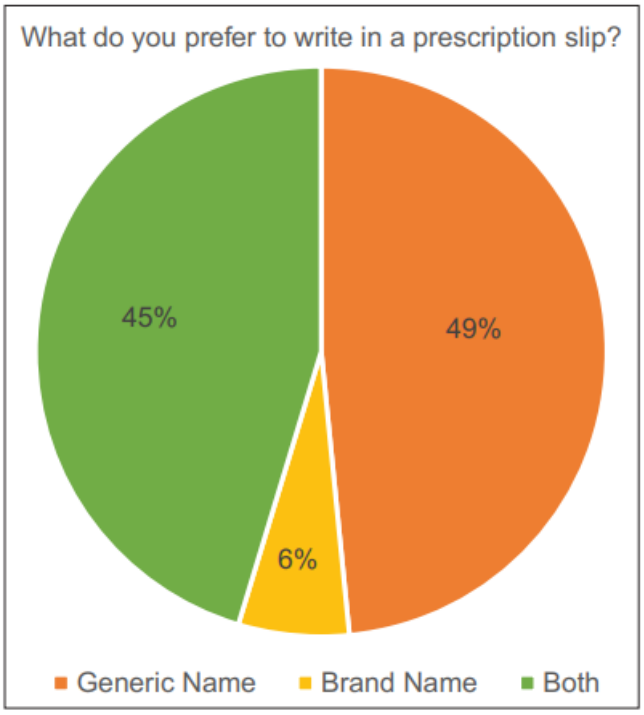

Figure 3: Responses of the doctors showing their preferences for writing generic names and brand names in a prescription

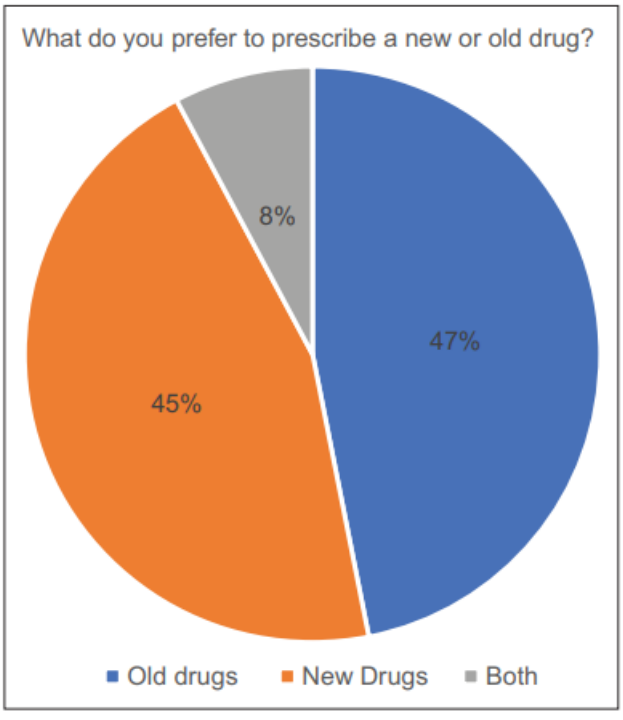

Figure 4: Responses of doctors showing their preferences to write old/new drugs

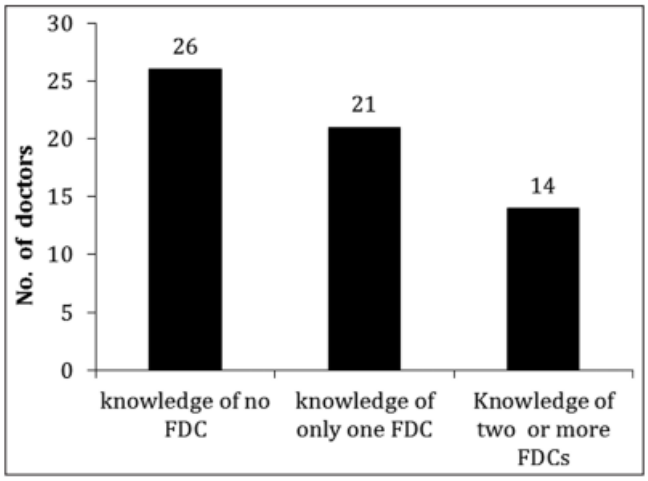

Figure 5: Assessment of knowledge about fixed dose combinations included in the WHO essential medicine list

CONCLUSION

The results of this study show that physicians understand the benefits and drawbacks of FDCs. However, details on the availability of FDCs that are part of the WHO EML and the distinction between FDCs that are rational and irrational were unknown. Misinformation regarding FDCs leads to inappropriate drug orders. The most common reason of ignorance about drugs may be a failure to access reliable resources for learning about them. Increased patient load, a lack of education regarding FDCs during post-graduate training, and a dearth of CMEs focusing on the sensible use of drugs are also possible causes of the current situation. Promoting responsible drug use requires raising awareness of reliable information resources including the Electronic Medicines List (EML), FDC education initiatives, and daily updates on the status of banned FDCs.

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