

**IMPLEMENTING THERAPEUTIC SUBSTITUTION IN A BUSY  
TERTIARY CARE HOSPITAL AND REFLECTIONS ON DISPENSING  
CHALLENGES FOR A YEAR LONG PERIOD.**

**Dr. Jayant Kumar Kairi\***

India.

Article Received on 26/12/2016

Article Revised on 15/01/2017

Article Accepted on 06/02/2017

**\*Corresponding Author**

**Dr. Jayant Kumar Kairi**

India.

[jayantkairi@gmail.com](mailto:jayantkairi@gmail.com).

### **ABSTRACT**

It is quite common for a patient to present his prescription in a government hospital dispensary, or even in private pharmacist shop where he is dispensed a medicine that is not of the brand as prescribed.

For most of the drugs in the present day, it is a rule rather than exception that there would be numerous manufacturers of the same medicine, manufacturing by their own brand names, sometimes referred to as branded generics. It is impossible to stock all medicines and all their brands. As a result, many times it is possible that the patient receives medicines that bear names different from what is written on his prescription. This practice is called 'Therapeutic Substitution.' On many occasions, there is difference in appearance of the medicines also. A discerning patient who has used the medicine for some time, doubts the correctness of dispensed medicine. This doubt or confusion has serious consequences on the therapeutic outcomes as the same may affect compliance with prescribed therapy. It takes the time, effort and ingenuity of the dispensing staff to convince the patient about the correctness of prescribed medicine as well as the importance of continuing with the prescribed medicine. In the present study the issues due to therapeutic substitution, faced by the patient and the dispensing staff have been examined.

**KEYWORDS:** generic, brand names, therapeutic, substitution.

**Key Messages:** (Provide appropriate messages of about 35-50 words to be printed in centre box).

- Patients are required to be dispensed medicines bearing brand names other than those prescribed as it is not possible to stock all the brands of any medicine
- This practice has the potential to upset therapeutic outcomes but it is possible to convince the patients
- Patient's reaction to therapeutic substitution depends on his information and attitude to ailment and treatment

## INTRODUCTION

Modern pharmacotherapeutics involve the use of a large number of medicines. Almost all medicines are available with more than one brand name. As a result of such a large number of options, stocking of all possible medicines by any drug store is impossible. So, what does a pharmacist do when he doesn't have the prescribed medicine brand? This issue is more relevant in government health care settings where medicine procurement is mostly through generic names only. The solution is worked out by providing a substitute medicine when the prescribed one is unavailable. Providing a substitute may involve providing a generic medicine for the prescribed brand, the process termed loosely as 'generic substitution' while substituting the prescribed medicine by one of a different drug class is called 'therapeutic substitution' (TS).<sup>[1]</sup> Many places generic and therapeutic substitution are considered the same. On many occasions, providing substitute medicines is inevitable in government health care settings. It is impossible to stock 10000 or more medicines options in terms of brands presently. In future, their number is going to increase further. As far as efficacy goes, there are negligible intra-group differences amongst medicine.<sup>[2]</sup> The differences are mostly in pharmacokinetics. Therefore, it is possible to manage with two or three agents from each drug group. This method usually works well for most medicine groups. Selecting such a list for procurement and ensure their availability in the hospital at all times is the method of working through a 'hospital formulary'. Which two or three amongst many in drug group are included in the hospital formulary depends on the cost and preference of the physicians deciding the hospital formulary. The World Health Organisation (WHO) also endorses this method and there are numerous advantages along with ample evidence to promote this approach.<sup>[3]</sup>

Despite the fact that working via a hospital formulary and therapeutic substitution improves patient outcomes, the practice has its expected roadblocks. The biggest stake holder, the patient, is unhappy if he is dispensed anything other than what his physician has prescribed.

There is insistence on a particular brand or a particular medicine. The patients even after due counselling and explanation, refuses to accept the substitution. If the patient is un-convinced about medicine, he or she may take such actions that may jeopardize the therapeutic goal and patient outcomes due to non-compliance.<sup>[4][5]</sup>

WHO while recommending therapeutic substitution also mentions that the administrative authorities responsible for implementing TS should also institute measures to study the impact of the same. The most important person on ground implementing TS is the pharmacist at the hospital dispensary. In a large government hospital, there are more than one pharmacist or pharmacist assistants (PAs) who do the job of dispensing at the windows and also encounter the issues related to TS. The perspective of the dispenser is considered valuable as he/she has the information about the patient issues and the medicines that are causing them. It is for this reason, the present study was planned. The results of this study can provide guidance to the establishment in improving this aspect of health care delivery.

## METHODS

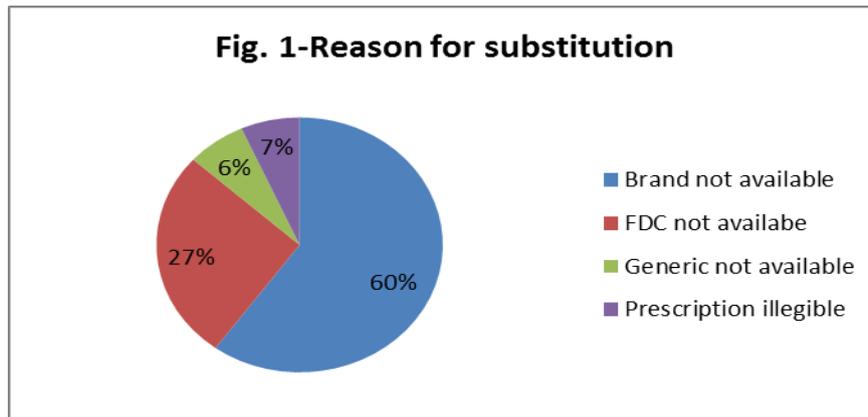
The study participants were the pharmacists and pharmacy assistants who worked in the dispensary of a large tertiary care hospital. Number of patients dispensed medicines daily on all working days ranged between 1800 to 2000 over last one year, the period of study.

Two aspects considered most important with respect to TS and its impact on health care are a) the patient reaction on the proposal of substitution and methods to deal with the same b) to know the drug groups where TS has been needed the most with a consideration on its impact on the well being of the patient health. In the past one year 30 pharmacists or pharmacy assistants worked in the dispensary and their inputs were drawn through a structured questionnaire contained in two sections. Only those pharmacist or pharmacist assistants who worked at least for three months in the dispensary were included in the study.

The questionnaire (enclosed) consisting of twelve questions- seven on the patient related responses while the remaining five pertains to the drug related matters.

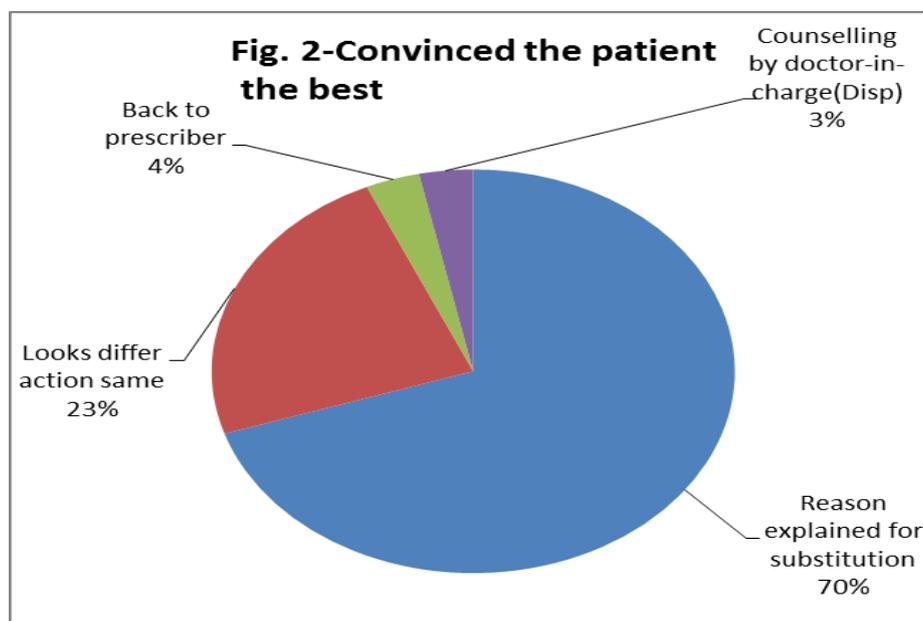
## RESULTS

All thirty respondents in the duration of their employment with the dispensary had to institute therapeutic substitution some time or the other. The commonest reason for substitution was brand not available (60%). The other reasons for substitution are presented as **Fig 1**.

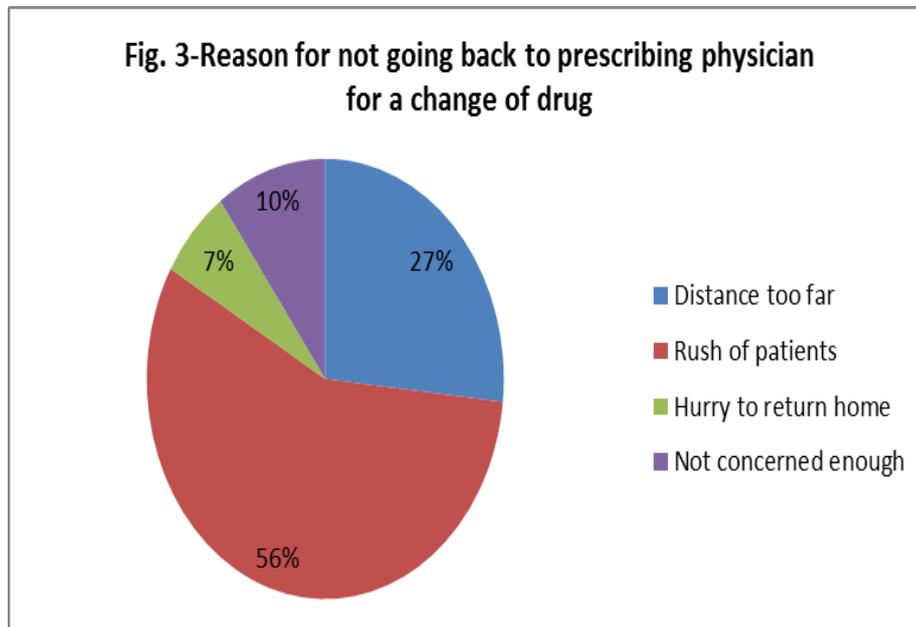


Pharmacists and pharmacist assistants often reported that the commonest response to proposal to substitution was refusal (75%) and anger was the emotional response in over half the patients. But most instances of TS resulted in subsequent successful dispensing when the pharmacist explained the matter to the patient. Once the patient refused TS, the PA tried to convince the patients regarding the suitability of the substitute and the commonest methods employed were to explain the reason for the substitution and explaining that the substitute was as good as the prescribed one, worked the best in turning the patients around.

In their experience, the pharmacists found that explaining to the patient that even though the medicine looks different and its brand name is different than what he is familiar with, helped the patients to accept the substituted medicine. In percentage terms, the measures that help convince the patients favorably are given below as **Fig 2**.

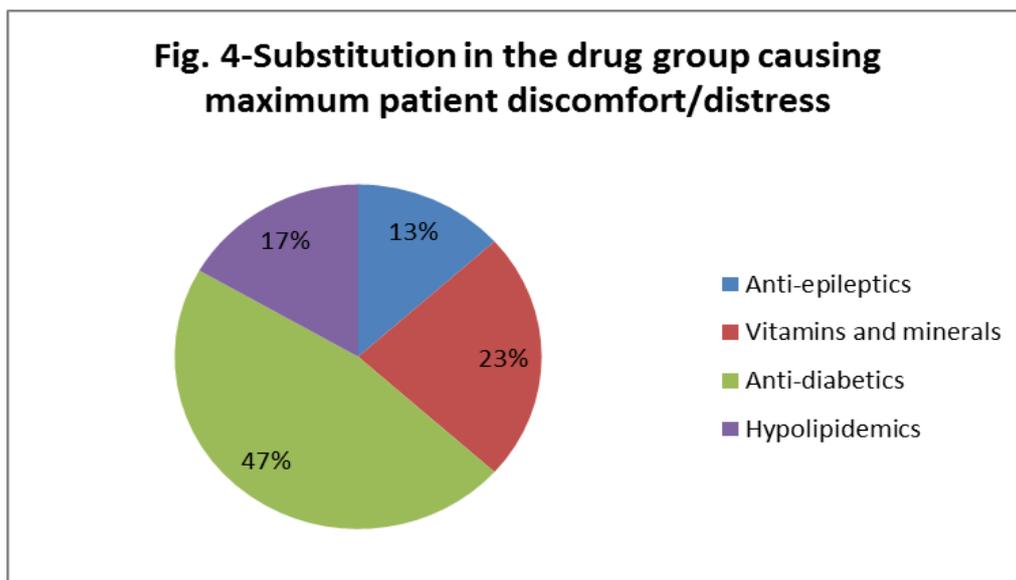


It is always ideal, that the treating physician is involved in therapeutic substitution due to numerous issues that are involved. The patients however, are reluctant in seeking a review, due to various reasons as presented in **Fig 3**.



As per the present study, the medicines treating gastrointestinal ailments needed the maximum number of substitutions. The top 5 GIT drugs that got substituted are esmaprazole, ondansetron, lactulose, rabeprazole and metronidazole. Amongst the cardiovascular drugs, the maximum substitutions occurred for rosuvastatin and olmesartan. Data was recorded for only the gastrointestinal and cardiovascular drugs for estimating the frequency of substitution.

The patient's discomfort with TS was not the same with all varieties of medicines. Understandably, maximum unhappiness was caused by substitutions in the anti-diabetic drugs. Twenty respondents placed substitutions in anti-diabetic drugs as causing maximum distress to the patients. The other medications causing distress group wise as under as **Fig 4**.



Most of the respondents felt that comparative explaining of the patients about the active pharmacological ingredient in the prescribed and substituted medicine convinced more than half of the patients about the correctness of the practice of TS and helped them accept a medicine other than that was prescribed by their physicians.

## DISCUSSION

TS is inevitable in certain circumstances in a large government healthcare setup. The fact is quite evident from the present study. The reasons for the same are easy to understand. Govt purchase of medicines are based on generic names and based on open tendering and competitive bidding process. It can never be guaranteed in these circumstances that the same manufacturer or brand will qualify continuously. But TS is an emotive issue to both the patients and their treating physician. Both consider it to be infringement on their rights in some ways or the other. But organizationally, TS is inevitable and it is desirable in the long run as if the patients could be convinced that the substituted medicine provided him/her the same level of health improvement as the original one, the therapeutic goals of the clinicians can continue to be achieved.

In the present study, some important facts are brought out. It is seen clearly, that the mention of TS starts an unpleasant feeling in the patients. But, with persuasiveness of the pharmacists, the patients can be convinced to change their mind and opinions. Two major concerns, that the active pharmacological ingredient is the same and that the difference in appearance doesn't matter to the action of the drug is usually sufficient to convince the patient to accept the substitution. An interview with the doctor in charge of dispensary also helps as the patient

is more amenable to receive treatment related advice from the doctor. It is found in the present study that the patients are usually reluctant to go back to the treating physician to get the substitutions done or get the substitution approved by them. The biggest disincentive for going back is found to be the distance and the rush of patients at the OPDs.

TS is needed for all therapeutic groups of medicines but in the present study only two groups considered more relevant to our hospital were studied. The anti-emetics and laxatives needed substitutions more commonly. The hypolipidemic drugs and angiotensin receptor blockers also required substitution often as per the respondents. It is observed that proposal of substitution for anti-diabetics, cause a lot of distress to the patients.

Now a days, patients of diabetes are tuned to strict control of blood glucose and also frequently monitor the same through portable devices and glucose testing strips. The fear of hypoglycemia is also a possible reason for their distress.<sup>[6]</sup> Substitutions in the anti-epileptic drugs are least desirable but evoked lesser patient reluctance.<sup>[7]</sup> This is indicative of patient unawareness and attitudes with respect to anti-epileptic drugs.

On conducting the literature search for therapeutic substitution, it was observed that there are very few studies from the perspective of the dispensary staff or pharmacists. This finding was the basis of planning of this study. One of the shortcomings of this study is the recall bias by respondents as they contributed to the data regarding patient reactions and drugs based on their experience and memory. Still it is felt that this study provides useful insights in the entire process of TS and what can make it more acceptable to the patients.

## CONCLUSIONS

Substitution of medicines while dispensing is inevitable at times due to the availability of medicines by multiple manufacturers by different names. Due to differences in name and appearance, the patient may get disinclined to use the medicine or consider it inferior. Doing so will jeopardize the therapeutic outcome and upset treatment goals. The dispensing staff has a crucial and challenging role to play to alley the doubts and fears of the patient on this matter. By concerted efforts, success is mostly achieved.

**ACKNOWLEDGEMENTS: NIL.**

**REFERENCES**

1. Johnston A, Asmar R, Dahlof B, Hill K, Jones DA, Jordan J, et al. Generic and therapeutic substitution: a viewpoint on achieving best practice in Europe. *Br J Clin Pharmacol*, 2011; 72: 727–30.
2. Feldman RD, Hussain Y, Kuyper LM, McAlister FA, Padwal RS, Tobe SW. Intra-class differences among antihypertensive drugs. *Annu Rev Pharmacol Toxicol*, 2015; 55: 333-52.
3. Holloway K, Green T (Editors). *Drug and Therapeutic Committees- A practical guide*. World Health Organisation, 2003; 99-100.
4. MacCochrane, G. Compliance and Outcomes in Patients with Asthma. *Drugs*, 1996; 52(6).
5. Eraker SA, Kirscht JP, Becker MH. Understanding and Improving Patient Compliance. *Ann Intern Med*, 1984; 100: 258-268.
6. Martyn-Nemeth P, Farabi SS, Mihailescu D, Nemeth J, Quinn L. Fear of hypoglycemia in adults with type 1 diabetes: impact of therapeutic advances and strategies for prevention - a review. *Journal of Diabetes and Its Complications*, 2016; 30: 167 –177.
7. Talati R, Scholle JM, Phung OP, Baker EL, Baker WL, Ashaye A et al. Efficacy and safety of innovator versus generic drugs in patients with epilepsy: a systematic review. *Pharmacotherapy*, 2012; 32(4): 314-22