

Pharmacoeconomics of allergic rhinitis drugs treatment in tertiary care hospital

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Received: 13 August 2019

Revised: 16 September 2019

Accepted: 17 September 2019

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ABSTRACT

Background: Allergic rhinitis also called hay fever; it is a very common in India. Harmless exposing substances cause an allergic reaction. Allergic rhinitis is of the two types, one is the seasonal occurred with the change of seasons, second is the perennial means any time during the year.

Methods: This was a cross-sectional study to determine the cost analysis allergic rhinitis drugs used in treatment of ENT OPD in a tertiary care teaching hospital, Kamothe, Navi Mumbai. The patients were interviewed; prescriptions were analyzed number of medicines prescribed.

Results: Incidence of polypharmacy two drugs per prescriptions were prescribed 140 and three drugs per prescriptions 60. In the total number of 200 prescriptions, the cost of 43 prescriptions were in between 251-300 Indian rupees and 18 prescriptions were 301-350 Indian rupees. Patient knowledge about the drug use in this study, out of 200 pts 37% of allergic rhinitis patients knew the correct dosage of the prescribed drugs while 63% were not aware.

Conclusions: Majority of the participants drugs were prescribed two to three drugs, per prescription cost was high because all the drugs prescribed by brand name and no drugs were prescribed by generic name. Improvement in knowledge about generic medicines is important factor to prefer generic medicine. Reduction in cost of drug will improve compliance.

Keywords: Allergic rhinitis, Cost analysis, Generic medicine

INTRODUCTION

A general and progressive increasing medical care cost is a matter of concern for patients as well as for policymakers and health service providers. Every year over a hundred million people are dragged into poverty due to increasing the cost of medical bills. In many countries, every year an increasing percentage of the population is forced into poverty as they have to spend the money on health services. The millions of people suffering due to a lack of access or inability to afford medical care. According to the world health organization annual World Health Report 2010 reflects that health and

medical service is a limited resource for an unlimited demand, between twenty percentages to forty percentage of all health expenditure money is wasted because of inefficiency and overpaying is a type of waste. In some countries, the costs of medicine are up to sixty-seven times higher than the international average price. This over expenditure grossly affects expenditures for other health services. Every year, directly or indirectly medical costs have been dragging millions of Indian populations get into poverty.¹ Cost analysis is a type of partial pharmacoeconomic evaluation which compares the costs of two or more alternatives without regard to outcome.^{2,3} There are different types of brands and the same drug are the alternatives available in the market for a patient, this

is expected to provide a same therapeutic outcome. Analysis of their costs can highlight the phenomenon of ‘inter-brand price variation’ which can put the substantial financial burden on patients along with posing moral and ethical concerns.⁴ Allergic rhinitis is common in India, this is considered as a common condition with a high morbidity, and is associated with reduced quality of life due to its coexistence with other diseases (such as chronic sinusitis and asthma) and is a cause of substantial medical care expenditures.^{5,6} The present study was undertaken to study the cost analysis of drugs used in the treatment of allergic rhinitis at tertiary care hospitals in the outpatient ENT department at MGM Medical College, Navi Mumbai, India. The objectives of the study were to find out the incidence of polypharmacy drugs or prescriptions, Evaluation of cost per prescriptions, study patient knowledge about the drug use.

METHODS

Study type

This was a cross-sectional and observational study.

Study place

The present study was conducted at ENT OPD in MGM hospital, at Kamothe, Mumbai.

Ethical approval

The study was approved by the MGM Institutional ethics committee.

Study period

The duration of the study was six months (16 August 2014 to 16 February 2015).

Selection criteria of the patients

According to the inclusion and exclusion criteria, those who attended and who had suffered from allergic rhinitis 200 patients were recruited from the ENT outpatient department.

Inclusion criteria

All the patients of allergic rhinitis, adult patients between 18-60 years, patients of either sex, patients willing to participate in study and were ready to give written informed consent.

Exclusion criteria

Pregnancy patients, patients suffering from genetic disorders, patients on chronic medications other than allergic rhinitis drugs and patients who were not willing to participate in this study were excluded from the study.

Study procedure

The patients, after taking their written informed consent, were interviewed regarding their knowledge regarding use of drugs prescribed. The parameters of prescriptions were recorded. All the prescriptions were analyzed on number of medicines prescribed in generics, duration of therapy and written instructions to the patients regarding dose and dosing interval of the drug.

Statistical analysis

The data were subjected to the descriptive statistical analysis used by Microsoft Excel and presented as a percentage.

RESULTS

Polypharmacy was observed in 200 prescriptions. Three drugs were prescribed in 60 prescriptions, while two drugs or prescriptions were prescribed in 140 prescriptions. The total number of drugs prescribed per prescription was 3.16.

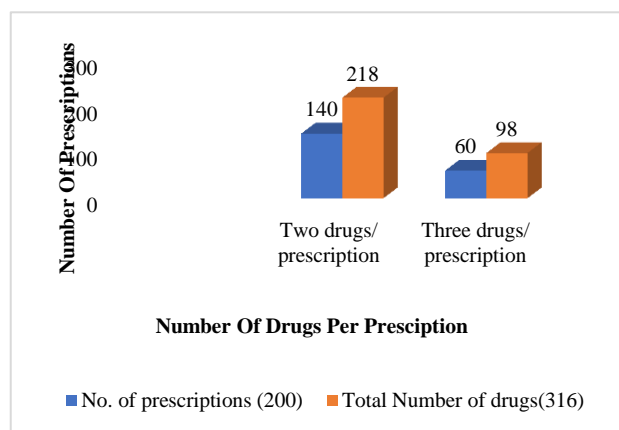


Figure 1: Incidence of polypharmacy.

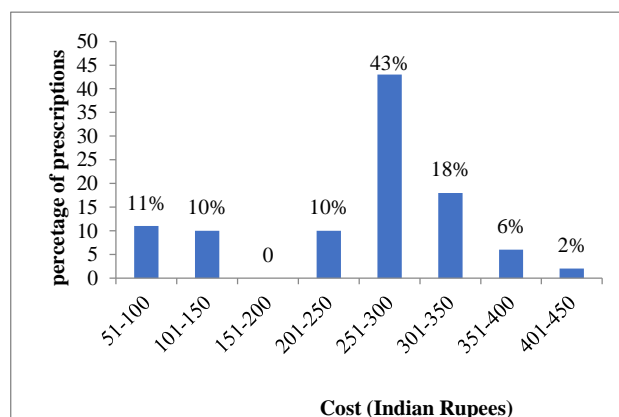


Figure 2: Cost analysis.

Cost of the prescriptions was calculated considering only the cost of the drugs. Of the 200 prescriptions, the cost of

most of the prescriptions (43%) was in the range of 251-300 Indian rupees followed by 18% in the range of 301-350 Indian rupees.

Table 1: Patient knowledge about the drug use.

Patient knowledge about the drug use	Number of allergic rhinitis patient
	N (%)
Aware	126 (63)
Not aware	74 (37)

Patient knowledge about the drug use in this study, out of 200 patients 37% of allergic rhinitis patients knew the correct dosage of the prescribed drugs while 63% were not aware.

DISCUSSION

Drugs play a very important role in health protection and recovery from disease. Around one-third of the world, population has difficulties in accessing medication due to the high cost of drugs.⁷ Most countries are facing escalating health care expenditures. Escalating costs and affordability of medicine for both governments and patients has become a global challenge. In an era of rapidly rising health care costs, generic medicines provide a less expensive alternative to branded medicines. Generic drugs are an alternative to brand drugs in many countries including the United States, Germany and developing countries like India.⁸ The use of generic medicines contributed to substantial savings in medicine expenditure.⁹ In addition to reducing the overall health care expenditure, use of generic medicine can reduce patients out of pocket costs and has been shown to improve adherence.¹⁰

In our study, the average number of drugs per prescription was 3.16. In a similar study, Meena et al reported the number of drugs per prescription 2.96.¹¹ The lower number of drugs noticed is a welcome sign and needs to be encouraged. There may be an increase in compliance, lower cost of therapy and lower risk of drug interactions when a lesser number of drugs were prescribed.

Figure 1 shows the average number of drugs used in each prescription was two drugs per prescriptions 78.87% and three drugs per prescriptions 22.22%. Thus, each prescription contains an intranasal corticosteroid, or nasal decongestant, an antihistamine or leukotrienes antagonist on average prescribed drugs which are compared to other studies previously we conducted Thandu et al reported, this drugs block the action of histamine and released on exposure to allergens.¹² They also used to relieve hay fever symptoms such as sneezing, runny nose, and other nasal symptoms. Figure 2 shows the total cost of the prescribed drugs per prescriptions was in the range of Rs. 251-300 in 43% and in 18% it was Rs. 301-350. The duration of treatment for allergic rhinitis was 15 or 20

days which is long and also intranasal corticosteroids were which increases the cost per prescription. This was compared to the previous study, by Kozam et al in which the cost-effectiveness of intranasal corticosteroids versus oral antihistamines was assessed in three randomized controlled trials on the treatment of allergic rhinitis.¹³

Patient knowledge about the drug use (Table 1) in this study, out of 200 patients 37% of allergic rhinitis patients knew the correct dosage of the prescribed drugs while 63% were not aware, similar study done by Rajasekaran et al, showed a poor knowledge about the drug use in treatment of allergic rhinitis.¹⁴ Thus, in this study we documented lower patients' knowledge regarding the prescribed drugs. The value of nasal decongestants was realized by many patients however role of antihistamines, leukotrienes antagonists and nasal steroids was only understood by the educated class of patients.

During the study, all the drugs were prescribed by brand name and no drugs were prescribed by generic name. This finding suggests the popularity of brands and the influence of the pharmaceutical companies on the clinicians. However, it is recommended to prescribe by generic name, as it leads to the rational use of drugs and provides a cost-effective therapeutic option.

CONCLUSION

Result from this research showed that in majority of participants drugs were prescribed two to three drugs, per prescription cost was high because all the drugs prescribed by branded name and no drugs were prescribed by generic (chemical) name. They didn't know about generic medicine. Reduction in cost of drug will improve compliance, which will indirectly reflect in good response to drug therapy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Thandu SKG, Kumar ANV, Kunkulol RR. Pharmacoeconomics of allergic rhinitis drugs treatment in tertiary care hospital. *Int J Basic Clin Pharmacol* 2019;8:2313-6.