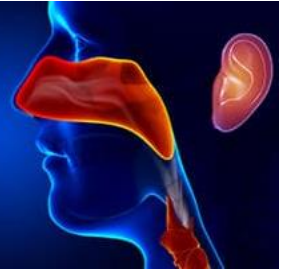


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Prescription trends and patterns for allergic rhinitis treatment in clinical practice

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Abstract

Background: Despite of having guidelines for allergic rhinitis (AR) management, there are significant concerns in current scenario where the prevalence has been on the rise due to various factors. Hence, we aimed to analyse the prescription trends and patterns for AR treatment in clinical practice.

Methodology: This was a questionnaire-based, cross sectional study in which the clinicians answered the online questionnaire containing questions pertaining to prevalence, symptoms, causes, clinical characteristics, management of AR and the usage of allergic medications in their clinical practice. The data were analysed using descriptive statistics.

Results: About 41% of clinicians stated that 10-20 patients underwent treatment for AR per week. Both male and female patients were affected equally, and majority of the patients belonged to the age group 30-45 years. A peak in the patient inflow was seen during the months of December to February, with majority presenting symptoms such as breathing difficulty, constant sneezing, and rhinorrhoea. The most prescribed drug was bilastine + montelukast for 6 weeks by majority of the clinicians. they are reported that the preference give for this drug was due to its less sedative action, faster onset of action and the advantage it holds in the use in renal, hepatic, and geriatric patients.

Conclusion: Bilastine was a widely used drug among majority of the clinicians for the plethora of benefits it has among all other allergic medications in the treatment of AR.

Keywords: Allergic rhinitis, prescription pattern, rhinorrhoea, bilastine, antihistamines, pharmacotherapy

Introduction

Rhinitis is defined as the inflammation of the nasal mucosa that affects up to 40% of the world population. Allergic rhinitis (AR) is the most common type of chronic rhinitis, affecting 10 to 20% of the population, and the prevalence of this disorder is steadily increasing ^[1]. AR is an allergic reaction that occurs when the immune system responds to allergens, such as pollen, dust mites, pet dander, or mold spores, by releasing histamines and other chemicals. These chemicals cause inflammation of the nasal passages, leading to symptoms like sneezing, runny or stuffy nose, itchy or watery eyes and throat irritation ^[2]. Severe allergic rhinitis has been associated with significant impairments in the quality of life, sleep, and work performance.

Allergic Rhinitis is a widespread health issue in India, approximately affecting 10 to 30% of the Indian population. The prevalence of AR has been on the rise due to various factors, including urbanization, environmental changes, and increased exposure to allergens. However, it can vary depending on factors such as geographical location, age, and season ^[3]. The prevalence of AR was generally higher in urban areas compared to rural regions. Urbanization, increased pollution, and lifestyle changes have contributed to this difference. AR can affect individuals of all ages, but it often begins in childhood or adolescence. In India, it was reported to be more common in males during childhood but becomes more prevalent in females during adulthood.

The symptoms of AR can be seasonal or perennial (year-round). Seasonal AR, triggered by pollen from trees, grasses, and weeds, was more common during specific times of the year, while perennial AR was often linked to indoor allergens like dust mites, pet dander, and mold spore ^[4].

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AR was often associated with other conditions, such as asthma, atopic dermatitis, and sinusitis, further complicating the health of affected individuals. The treatment goal for allergic rhinitis was relief of symptoms. Therapeutic options available to achieve this goal include avoidance measures, allergy medications, allergen immunotherapy and lifestyle modifications [5]. Identifying and minimizing exposure to allergens is an essential step in managing AR. Medications, including antihistamines, decongestants, nasal corticosteroids, and leukotriene receptor antagonists, are commonly prescribed to relieve symptoms. Allergen immunotherapy (allergy shots) may be recommended for individuals with severe or persistent AR to help desensitize the immune system. Maintaining a clean and allergen-free home environment, using air purifiers, and practicing good hygiene can also help manage symptoms.

It's important for individuals with AR in India to consult healthcare professionals for proper diagnosis and management, as the condition can significantly impact their quality of life, especially during high pollen seasons and in areas with high levels of environmental allergens. AR-related clinical guidelines developed in India recommended the use of second-generation antihistamines, leukotriene receptor antagonists (LTRAs), and nasal steroids. However, studies have mainly focused on the treatment efficacy through randomized controlled trials, and few studies have assessed how different medications were used in clinical practice. Hence, this study was aimed to analyse the prescription trends and patterns for AR treatment in India.

Methodology

We carried out a cross sectional, multiple-response questionnaire based survey among physicians specialized in treating AR patients in the major Indian cities from June 2022 to December 2022.

Questionnaire

The questionnaire booklet titled Bilast M (Bilastine + Montelukast combination in the management of Allergic Rhinitis with Asthma) study was sent to the doctors who were interested to participate. The Bilast M study questionnaire included 14 questions (excluding demographic profile) that focused on the prevalence,

symptoms, causes, clinical characteristics, management of AR and the usage of allergic medications in clinical practice. The study was performed after obtaining approval from Bangalore Ethics, an Independent Ethics Committee which was recognized by the Indian Regulatory Authority, Drug Controller General of India.

Participants

An invitation was sent to leading doctors in managing AR in the month of March 2022 for participation in this Indian survey. 174 clinicians from major cities of all Indian states representing the geographical distribution shared their willingness to participate and provide necessary data. Physicians were asked to complete the questionnaire booklet without discussing with their peers. A written informed consent was obtained from each physician's before initiation of the study.

Statistical analysis

The data were analyzed using descriptive statistics. Categorical variables were presented as percentages to depict their distribution. The frequency of occurrence and the corresponding percentage were used to represent the distribution of each variable. To visualize the distribution of the categorical variables, pie, and bar charts were created using Microsoft Excel 2013 (version 16.0.13901.20400).

Results

It was noted that difficulty in breathing (22%), constant sneezing (20%), rhinorrhoea (15%) and itchy nose (7%) were the most common symptoms associated with AR. Further, it was observed that patients most frequently visit clinicians during Dec-Jan-Feb (28%), followed by Sep-Oct-Nov (22%), Jun-Jul-Aug (17%) and Mar-Apr-May (14%). About 40% of the respondents reported that 20-30% of AR patients with asthma revisited, 25% and 22% of them marked 30-40% and 10-20% respectively. Nearly 66% of physicians preferred bilastine + montelukast, 10% of them opted fexofenadine + montelukast and bilastine + montelukast and only 6% of them preferred bilastine + montelukast and levocetirizine + montelukast in AR with asthma patients (Figure 1). In that, 34% of clinicians suggested 6 weeks for prescribing combination of bilastine + montelukast in AR with asthma followed by 3 weeks (32%), 9 weeks (17%) and 12 weeks (13%) (Figure 2).

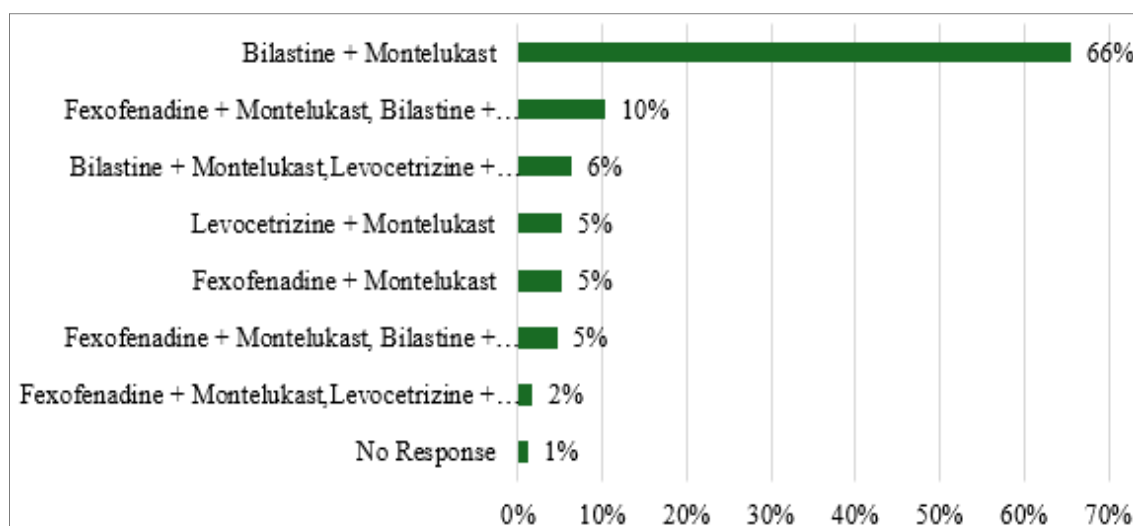


Fig 1: Distribution of preference of drug therapy in AR patients with asthma

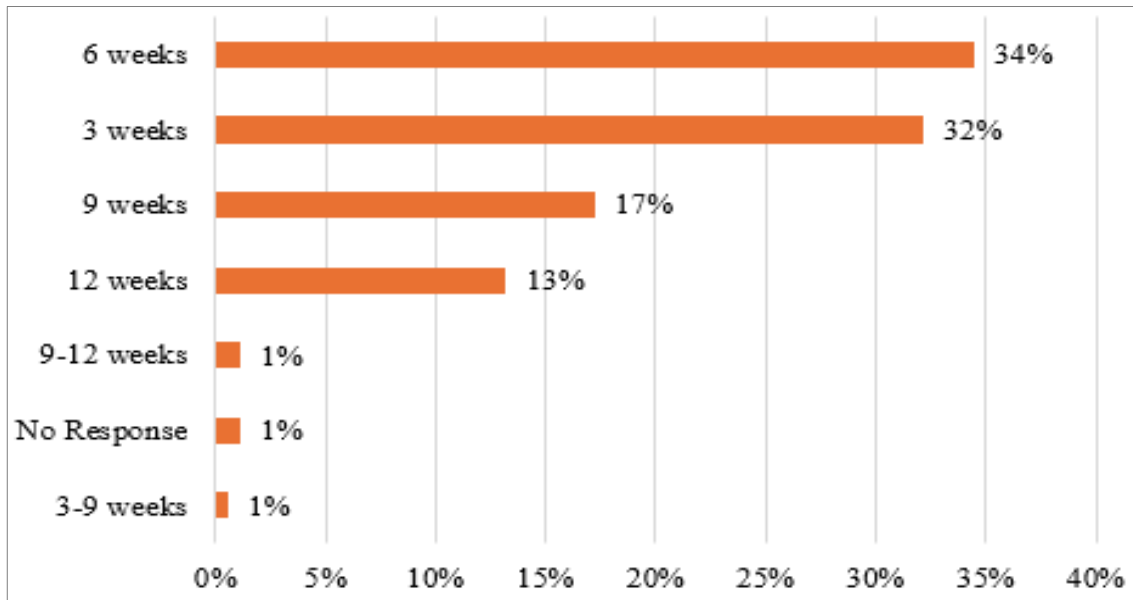


Fig 2: Duration of the prescription of the combination of bilastine + montelukast in AR with asthma

In addition, 64% of respondents stated that AR was most prevalent equally in both genders, whereas 20% said it was more prevalent in males and 16% highlighted that it was more prevalent in females. Also, 68% of participants preferred the combination of bilastine + montelukast for

mild-to-moderate asthma, 16% of them for mild asthma and 15% of them moderate asthma (Figure 3). About 36% of respondents reported that bilastine + montelukast decreases symptoms in 2 weeks while 35% of them indicated for 1 week, 19% of them in 3 weeks and 10% of them in 4 weeks

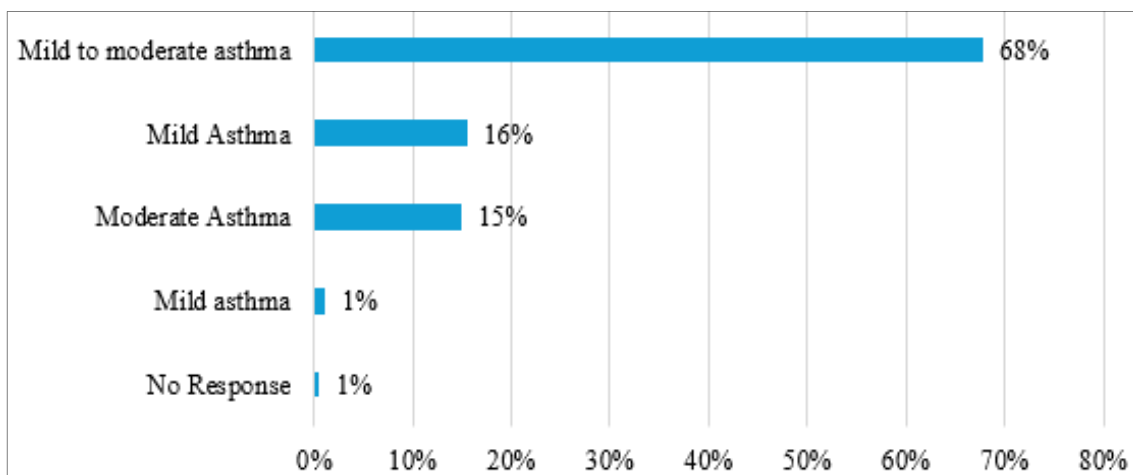


Fig 3: Preference of the combination of bilastine + montelukast for different stages of asthma

The advantages observed by the clinicians with the combination of bilastine + montelukast include less sedative effects (25%), faster onset of action (14%), no drug interactions with alcohol (11%); faster onset of action, less sedative effects, no anticholinergic effect, no drug interactions with alcohol (11%); faster onset of action, less sedative effect (9%); faster onset of action, less sedative effects, no drug interactions with alcohol (6%); faster onset of action, less sedative effect, no anticholinergic effects (5%); less sedative effects, no drug interaction with alcohol (4%); no anticholinergic effects (3%); faster onset of action, no drug interaction with alcohol (3%); all of the above (3%); less sedative effects, no anticholinergic effects (2%); faster onset of action, no anticholinergic effects (2%) and less sedative effects, no anticholinergic effects, no drug interactions with alcohol (1%). Furthermore, bilastine (75%), fexofenadine and bilastine

(9%), fexofenadine (7%) and ebastine, fexofenadine, and bilastine (3%) were the most preferred antihistamines for patient whose occupation evolves driving (Table 1). In addition, bilastine (66%), levocetirizine (16%) and fexofenadine, bilastine (9%) were commonly believed to be the antihistamine which produces quick relief of symptoms. In this survey, bilastine (80%) followed by fexofenadine, bilastine (6%), fexofenadine (6%) and levocetirizine (5%) were the most preferred antihistamine in renally compromised patients. Further, bilastine (80%) followed by fexofenadine, bilastine (9%), levocetirizine (3%) and fexofenadine (3%) were the most preferred antihistamine in hepatically compromised patients. Moreover, bilastine (75%) followed by fexofenadine, bilastine (11%), fexofenadine (6%) and levocetirizine (5%) were the most preferred antihistamine in geriatric patients.

Table 1: Preference of antihistamines for a patient whose occupation involves driving

Drug therapy	Response (%)
Bilastine	75%
Fexofenadine, Bilastine	9%
Fexofenadine	7%
Ebastine, Fexofenadine, Bilastine	3%
Ebastine, Bilastine	2%
Levocetirizine, Bilastine	1%
Fexofenadine, Levofloxacin, Bilastine	1%
Ebastine	1%

Discussion

The present study examined the prevalence, symptoms, causes, clinical characteristics, management of AR in Indian clinical practice where it showed that difficulty in breathing was the most common symptom associated with AR. In the literature, classic symptoms of allergic rhinitis are described as nasal congestion, nasal itch, rhinorrhoea, and sneezing [5]. In this survey, 28% of clinicians felt that AR patients most frequently visit during the months of Dec-Jan-Feb. Previous studies showed that seasonal variation of AR was attributed to the presence of most common allergens dust mites during the winter season [6]. Two-thirds of clinicians in this study preferred the combination of bilastine + montelukast for AR with asthma, mostly for 6 weeks. Various studies showed that drugs blocking the actions of leukotrienes, called leukotriene modifiers, can be very useful in people with both asthma and allergic rhinitis. The most used medications were montelukast and zafirlukast [7,8]. In this survey, clinicians stated that AR was most prevalent equally in both genders. The symptoms of AR in previous studies [9] tend to decrease with age and was more prevalent in males than in females. Total nasal symptom scores did not differ by sex [10]. Most clinicians in this survey preferred the combination of bilastine + montelukast for mild-to-moderate asthma cases. This combination also decreased symptoms mostly in 1- 2 weeks' time.

Clinicians preferred bilastine + montelukast because of its less sedative effects, faster onset of action, and no drug interactions with alcohol. Previous studies show that bilastine, a second-generation H1-antihistamine and montelukast, a highly selective cysteinyl leukotriene type-1 (CysLTR1) antagonist are effective in controlling both asthma and allergic rhinitis. The synergistic combination has a dual action and is an attractive treatment option in allergic rhinitis patients with hyper reactive airway disease such as asthma for achieving better results [11]. In this survey, most of the clinicians preferred bilastine for patient whose occupation involves driving. Studies have shown that bilastine 20 mg had no effect on driving performance in patients with allergic rhinitis. This was because bilastine does not exhibit anticholinergic effects; does not penetrate central nervous system and has minimal sedative properties [12, 13].

Bilastine was commonly believed by the clinicians to be the antihistamine which produces quick relief of symptoms. This survey showed that bilastine was also the most preferred antihistamine in aged patients, patients with impairment in renal and liver function. Bilastine is a novel second-generation H1-antihistamine, approved for the symptomatic treatment of allergic rhinitis in adults and children over 12 years of age [14, 15]. The duration of action of bilastine has also proven to be significantly longer and

the route of elimination was independent of the liver. Various clinical trials have found that bilastine was efficacious and safe in treating AR compared to other OAHs except somnolence.

In addition to being less sedative, bilastine was not associated with cardiac side effects. These features mean that bilastine could be recommended for first-line treatment of allergic rhinitis in current international guidelines [16]. Most of the clinicians felt that 20-30% AR patients with asthma revisited them. Since AR is a chronic disease, revisiting the clinician was common in the management process [17]. This study has limitations for generalization. First, this study analysed only common medications prescribed in clinical practice. Over the counter (OTC) preparations were thought to have affected the prescription trend. Further, allergen immunotherapy was a treatment emphasized in the guidelines and needs to be analysed. Since there have been few analyses of AR prescription trends, the results can be used to develop a clinical guideline in the future.

Conclusion

This study revealed a decrease in the prescriptions of antihistamines, especially first-generation antihistamines, and an increase in the prescriptions of newer drugs for patients with AR. Furthermore, the rate of prescription of combinations of antihistamines and other drugs have increased. These findings can serve as basic research data for clinicians and policymakers for developing and applying relevant guidelines in the future.

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