

Original Research Article

Prescription patterns and clinical perspectives on intranasal corticosteroids in allergic rhinitis: insights from a nationwide survey of ENT specialists in India

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ABSTRACT

Background: Allergic rhinitis (AR) is an atopic disorder that presents with symptoms like nasal congestion, watery nasal discharge, sneezing, postnasal drip, and nasal itching. The worldwide prevalence of AR is about 10% to 25% and in children the prevalence rate is up to 40%. In India, around 20-30% of the population suffers from AR. The objective of this survey was to assess knowledge, attitude, and prescription patterns of intranasal corticosteroids (INCS) in the management of AR among ear-nose-throat (ENT) specialist in India.

Methods: A cross-sectional, real-world, in-clinic survey was conducted among 625 ENT specialists across India from August 2024 to October 2024. The respondents were administered a validated 30 questions survey.

Results: In the survey, 62.24% of ENT specialists consistently prescribe INCS for AR management, with 84.48% of them prefer fluticasone furoate. Most specialists (69.12%) prescribe INCS for a duration of 1 to 3 months, and 50.88% always use INCS for seasonal AR. Around 55.52% consider age as a key factor while prescribing INCS. For elderly patients 80.96% of the specialist preferred fluticasone furoate. Additionally, 89.12% believe INCS are the most effective AR treatment, and 76.00% routinely educate patients on proper nasal spray techniques.

Conclusions: The survey suggests that INCS are the top choice among ENT specialists for treating AR due to their efficacy and safety. Among the INCS, fluticasone furoate was the most preferred molecule. INCS play a key role in enhancing patients' quality of life and delivering positive clinical outcomes.

Keywords: Allergic rhinitis, ENT specialists, Fluticasone furoate, Intranasal corticosteroids

INTRODUCTION

Allergic rhinitis (AR) is an atopic condition marked by symptoms such as nasal congestion, clear nasal discharge, sneezing, postnasal drip, and itching of the nose.¹ AR can be categorized into two types: seasonal (intermittent) and perennial (chronic). About 20% of cases are seasonal, 40% are perennial, and the remaining 40% exhibit characteristics of both types.² AR has an estimated worldwide prevalence of 10% to 25% and is one of the most prevalent diseases in childhood with a prevalence reaching up to 40%. In India, around 20-30% of the population suffers from AR and 15% progresses to

develop asthma.³⁻⁵ It was previously considered that AR is a localized disorder of nose and the nasal passage. However, current clinical knowledge indicates that AR may manifest as a component of systemic airway disease involving the entire respiratory tract.⁶ Symptoms of AR may cause other clinical manifestations such as sleep disturbance, fatigue, depressed mood, and decline in cognitive function, thus impairing quality of life and functional productivity.⁷ Hence, it should be considered as a systemic disease and should not be overlooked as a local disease.

Common aeroallergens linked to AR and asthma include house dust mites, cockroaches, pollen, and mould spores.⁸

AR involves an early IgE-mediated response triggered by inhaled allergens, leading to mast cell degranulation and histamine release causing sneezing and rhinorrhea. Later, cytokines like IL-4 and IL-13 drive a prolonged inflammatory phase marked by nasal congestion.⁹ Once diagnosed, AR is treatable with a variety of modalities, with intra-nasal glucocorticoids being the first-line therapy.¹

The current available guidance on management of AR seldom refer to real life scenarios, leading to significant gap in routing clinical practice hence it is at most important to address the practical challenge with respect to diagnosis and treatment aspect of AR. The aim of this survey was to assess knowledge, attitude, and prescription patterns of intranasal corticosteroids (INCS) in the management of AR among ear-nose-throat (ENT) specialist in India. Additionally, the survey aimed to identify barriers to optimal AR management, and unmet needs in AR care. The survey provides valuable data that can provide patient centered care and improved AR management.

METHODS

This was a cross-sectional, real-world, in-clinic survey conducted with a validated question consisted of 30 items. A total of 625 ENT Specialists practicing in both academic (teaching institutes and hospitals) and clinical settings (private hospital, nursing homes and consultation chambers) across India participated in this survey. Duration of the study was from August 2024 to October 2024. Convenience sampling method was used. They were assured of anonymity and data protection and were informed about the objective of the survey and approximate time taken to complete the survey. The primary objective of the survey was to assess knowledge, attitude, and prescription patterns of INCS in the management of AR. Additionally, the survey aimed to identify barriers to optimal AR management, including resource limitations and patient adherence, as well as unmet needs like early diagnosis and access to advanced therapies. The responses were collected anonymously to ensure unbiased and accurate reporting. Data were analysed using Microsoft Excel 365 version 22502, March 11 to identify trends and variations in treatment approaches, preferences for drug formulations, and factors influencing therapeutic decisions.

RESULTS

A total of 625 ENT specialists, regularly managing AR cases completed the questionnaire. The survey questions are summarized in Appendix.

Knowledge

For questions related to understanding, awareness, and knowledge about treatment options and guidelines. Efficacy is the most significant factor influencing the

choice of INCS for AR, as reported by 65.12% of ENT specialists. Patient preference and cost are noted as influential factors by 15.68% and 15.36% of specialists, respectively. A smaller proportion (3.68%) considers the side effect profile, while 0.16% identify other factors (Figure 1).

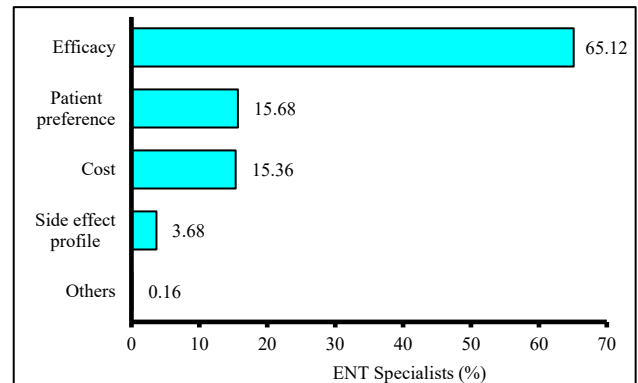


Figure 1: Factors influencing the choice of INCS in AR management.

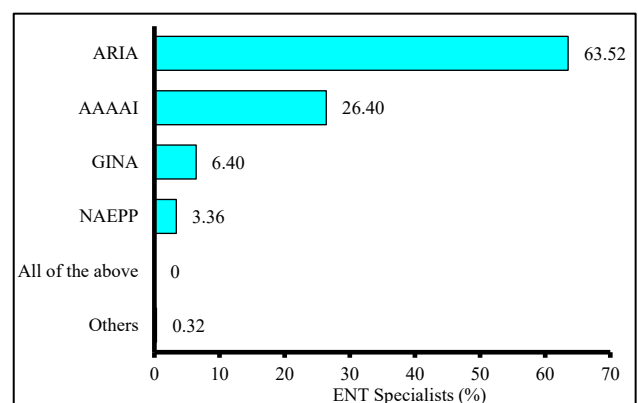


Figure 2: Clinical guidelines in the management of AR.

To evaluate the effectiveness of INCS in AR, 20.96% of ENT specialists rely on clinical examinations, 19.36% use symptom questionnaires, and 3.52% review patient diaries. The majority (56.00%) monitor all these methods collectively. For the management of AR, 63.52% of ENT specialists follow 'AR and its impact on asthma (ARIA)' guidelines, while 26.40% rely on the American Academy of Allergy, Asthma and Immunology (AAAAI). Smaller proportions adhere to the Global Initiative of Asthma (GINA) (6.40%), National Asthma Education and Prevention Program (NAEPP) (3.36%), or other guidelines (0.32%) (Figure 2).

Attitude

For the questions related to beliefs, opinions, and perceptions about the treatment or its effects. Most ENT specialists (89.12%) considered INCS to be the most effective treatment for AR. However, 6.72% did not share this belief, while 4.16% remain uncertain about the

effectiveness of INCS in treating AR. INCS were considered to significantly improve the quality of life in AR patients by 88.32% of ENT specialists, while 6.88% disagree and 4.80% remain uncertain. Regarding treatment outcomes, 53.28% of specialists were very satisfied, 42.24% were satisfied, 4.00% were neutral, and 0.48% were dissatisfied.

Prescription/practice

For the questions focused on actual clinical practice, behaviour, decision-making, and patient care routines. The majority (62.24%) reported that they always prescribe INCS for patients with AR, and around 26.56% often prescribe INCS. A considerable population (10.4%) sometimes prescribes, and a very small proportion (0.96%) rarely prescribes INCS for patients with AR (Figure 3). Considerable number (84.48%) of ENT specialists prescribed fluticasone furoate, followed by fluticasone propionate (11.20%), budesonide (2.24%), mometasone (1.28%), beclomethasone (0.48%) as shown in Figure 4.

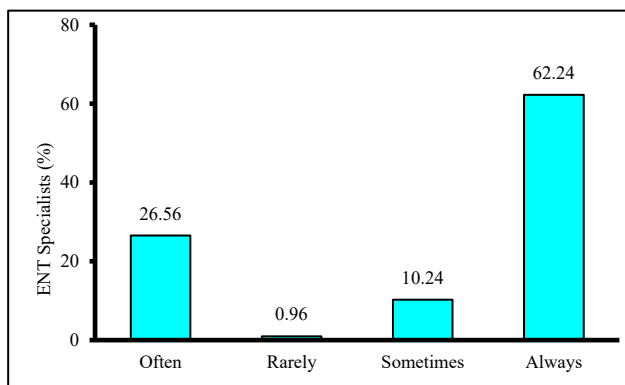


Figure 3: Prescription patterns of INCS in patient with AR.

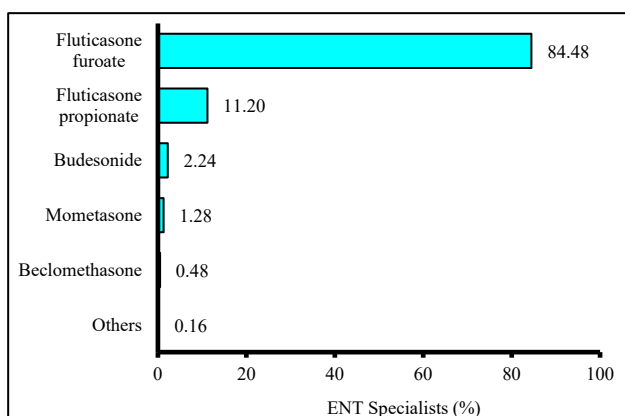


Figure 4: Commonly prescribed INCS in patients with AR.

The majority of ENT specialists (80.96%) prefer prescribing fluticasone furoate for elderly patients with AR, followed by fluticasone propionate, favored by

11.20% of specialists. Mometasone and budesonide were preferred by only 4.16% and 3.20% of specialists, respectively. A very small proportion of ENT specialists (0.48%) opted for beclomethasone in elderly patients with AR (Figure 5).

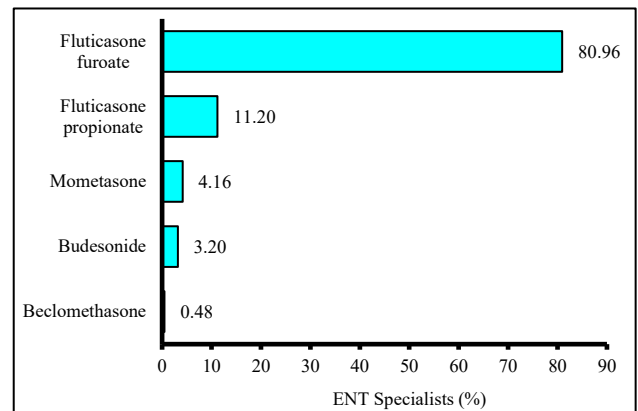


Figure 5: Commonly prescribed INCS in elderly patients with AR.

A considerable number of ENT specialists (69.12%) prescribe INCS for 1-3 months. However, 14.40% of respondents indicated 3-6-month duration, and other indicated less than one month and less than six months as a usual treatment with INCS for AR. ENT specialists most commonly reported a treatment duration of 2-3 months with INCS for perennial AR (69.12%). Treatment durations of up to 1 month, 3-6 months, and over 6 months were noted by 24.96%, 16.80%, and 4.96% of specialists, respectively. During the moderate condition of the disease 42.40% of the ENT specialists typically initiate the INCS. Around 36.80% of them start the treatment at all stages of the disease. A very small portion typically initiate the treatment in mild (6.08%) and severe (14.72%) stage of AR. Approximately 50.88% of participants reported consistently prescribing INCS for the management of seasonal AR. A further 43.36% indicated that they occasionally prescribe INCS for seasonal AR. In contrast, 55.68% of respondents consistently prescribe INCS for the treatment of perennial AR.

Around 55.52% of ENT specialists consistently take patient age into account. Additionally, 35.20% reported occasionally considering patient age, while 7.68% rarely do so. A minority (1.60%) of ENT specialists indicated that they never consider patient age when prescribing INCS. Combination therapy, involving INCS with other medications, is always prescribed by 39.52% of ENT specialists for AR. Additionally, 34.56% often prescribe it, while 24.16% do so only occasionally. A small proportion (1.76%) of specialists rarely recommend combination therapy for AR. Antihistamines are the most commonly combined medication with INCS for AR, as reported by 61.44% of ENT specialists. Leukotriene receptor antagonists (LTRAs) are the next most common combination, preferred by 30.08%. Decongestants and

immunotherapy are chosen by 6.08% and 2.08% of specialists, respectively, though immunotherapy data is not directly comparable here because it is practiced by trained allergist only. An additional 0.32% utilize other combinations (Figure 6).

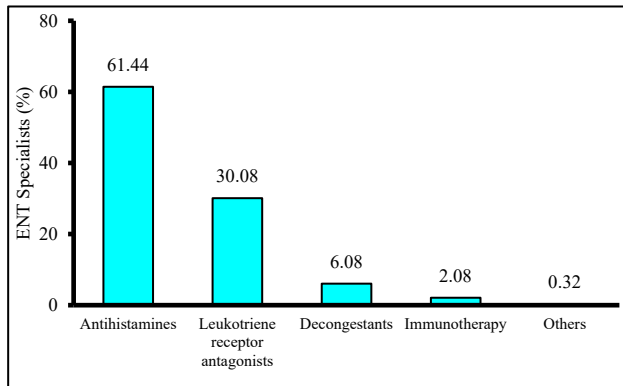


Figure 6: Commonly combined medications with INCS.

Patient education on nasal spray techniques for INCS is consistently provided by the majority of ENT specialists (76.00%). An additional 15.20% often offer guidance, while 8.48% do so only occasionally. A very small proportion (0.32%) rarely educate their patients in this aspect. Switching from INCS for AR is influenced by lack of efficacy and side effects. Regarding efficacy, 34.08% of ENT specialists switch sometimes, 26.24% rarely, 20.64% very often, and 19.04% often. For side effects, 33.76% rarely switch, 31.52% sometimes, 18.72% often, and 16.00% very often. Follow-up frequency after prescribing INCS varies among ENT specialists. The majority (52.80%) conduct follow-ups monthly, 41.12% every three months, 5.60% every six months, and 0.48% annually. During follow-up visits, 59.84% of ENT specialists always assess nasal spray technique, 20.16% do so often, 17.28% occasionally, and 2.72% rarely.

Dose adjustments for INCS based on symptom severity are always made by 59.84% of ENT specialists, often by 20.16%, sometimes by 17.28%, and rarely by 2.72%. Safety-related discussions regarding INCS vary among ENT specialists. While 17.28% provide reassurance about safety, 10.88% explain benefits and risks, and 9.60% address potential side effects, the majority (62.08%) cover all of these aspects comprehensively. Lifestyle modifications are frequently recommended alongside INCS for AR. The majority (55.68%) of ENT specialists always advocate for such changes, 23.52% often recommend them, 17.76% occasionally do, and 3.04% rarely provide this advice. ENT specialists employ various methods to educate patients about nasal spray techniques for INCS. While 27.84% prefer written materials, 16.16% favor verbal instructions, and 16.80% opt for demonstrations, the majority (48.00%) utilize all these approaches collectively. To address non-compliance

with INCS therapy, 25.60% of ENT specialists emphasize adherence, 13.28% simplify the regimen, and 7.68% explore alternative treatments. The majority (53.28%) combine all these approaches, while 0.16% opt for other methods. Clinical guidelines are widely used by ENT specialists when prescribing INCS for AR. The majority (58.24%) always follow guidelines, 25.60% often do, 13.60% occasionally use them, and 2.56% rarely rely on guidelines. The most common reasons for discontinuing INCS therapy include cost (34.08%), patient preference (32.64%), lack of efficacy (18.88%), and side effects (14.40%). ENT specialists assess the success of INCS therapy through various factors: 17.44% focus on improvement in quality of life, 13.92% consider symptom reduction, and 4.16% examine decreased exacerbation frequency. The majority (64.16%) evaluate all of these criteria collectively, while 0.32% use other methods (Figure 7).

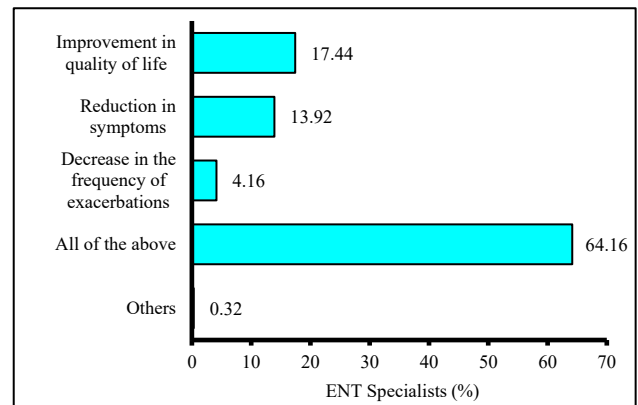


Figure 7: Rate of success of INCS in the AR.

DISCUSSION

This survey aimed to evaluate the knowledge, attitudes, and prescribing habits of ENT specialists in India regarding the use of INCS for managing AR in everyday clinical practice. In India, AR is often neglected, receiving insufficient attention from both patients and healthcare providers. Effective management of AR focuses on restoring nasal airflow, controlling nasal secretions, addressing complications from obstruction, and preventing symptom recurrence. Management strategies are founded on allergen avoidance, pharmacotherapy, and immunotherapy for select patients. Topical corticosteroids are now recognized as the primary treatment for AR. However, the use of these steroids raises concerns due to widespread fears, anxieties, and misconceptions surrounding steroid use among both patients and healthcare professionals. Most physicians prioritize drug safety and effectiveness when prescribing these nasal sprays, often overlooking patients' perceptions and satisfaction. By considering sensory attributes, physicians can select nasal sprays that are more acceptable to patients, promoting long-term adherence. While the currently available INCS show minimal

differences in efficacy and safety, they do vary significantly in sensory experiences.⁸

According to ARIA guidelines, INCS are recommended as the first-line treatment for patients with moderate-severe intermittent, mild persistent, and moderate-severe persistent forms of allergic rhinitis. INCS are more effective at relieving nasal congestion and are more cost-efficient than nonsedating antihistamines, which are the most commonly prescribed AR treatments. In more severe cases, during rhinitis flare-ups, or when patients have ocular and skin symptoms often associated with atopic conditions, oral antihistamines can be used in conjunction with INCS. The primary advantage of INCS is their ability to deliver high concentrations of medication directly to the nasal mucosa area, resulting in a rapid therapeutic effect while reducing the likelihood of systemic side effects. INCS exert their anti-inflammatory properties by blocking the production of various cytokines, chemokines, enzymes, and cell adhesion molecules through their action on intracellular glucocorticoid receptors.¹⁰

The findings of the survey suggest that INCS are widely accepted as the primary therapy for AR, owing to their proven effectiveness, safety, and versatility in managing symptoms, as supported by the literature. A large proportion of ENT specialists regularly prescribe INCS, with fluticasone furoate being the most favored option due to its excellent clinical profile. Treatment durations generally last between 1 to 3 months, ensuring a balance between effective symptom control and safety. Customized treatment plans are developed based on factors such as patient age, symptom severity, and type of disease, with INCS often initiated during moderate stages of AR. Both seasonal and perennial AR are successfully treated with INCS, highlighting their effectiveness in managing both acute and chronic conditions. Various studies have shown that fluticasone furoate nasal spray significantly outperforms placebo in alleviating symptoms of seasonal and perennial AR in children, adolescents, and adults, as demonstrated in double-blind, controlled clinical trials. With its high topical potency and minimal risk of systemic effects, fluticasone is an excellent option for treating rhinitis.¹¹ Combination therapy, most often involving antihistamines or leukotriene receptor antagonists (LTRAs), is frequently employed to enhance therapeutic outcomes. Age-specific prescribing practices are observed, with fluticasone furoate favored for elderly patients.

Patient education regarding nasal spray techniques is emphasized, utilizing written materials, verbal instructions, and demonstrations to maximize adherence. The nasal spray device plays a pivotal role in the effective management of allergic rhinitis by ensuring accurate and consistent delivery of medication directly to the inflamed nasal mucosa. The success of intranasal therapy depends not only on the formulation but also on the design and functionality of the delivery device. An ideal nasal spray

device for allergic rhinitis management should deliver the medication efficiently and accurately to the nasal passages while minimizing side effects and promoting patient compliance. This includes features like precise dosing, a comfortable spray pattern, easy usability, and potential for preservative-free formulations.¹²

ENT specialists emphasize the importance of lifestyle changes in conjunction with INCS and report high satisfaction with their clinical results. INCS are crucial in managing AR, as they offer extensive symptom relief and enhance the quality of life for patients, solidifying their role as a fundamental element of evidence-based practice.

CONCLUSION

The survey suggested that INCS are the cornerstone treatment for AR, offering unmatched efficacy, safety, and adaptability. ENT specialists consistently advocate their use, with fluticasone furoate being the preferred option, even for elderly patients. INCS provide effective symptom management for both seasonal and perennial AR, with treatment durations typically ranging from 1 to 3 months. Complementary strategies, such as combination therapies and patient education, further enhance adherence and outcomes. Supported by strong clinical consensus and guidelines like ARIA, INCS continue to demonstrate their key role in improving patient quality of life and achieving favorable clinical outcomes.

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