

An Observational Study to Compare Intranasal Steroids Spray with Hypertonic Nasal Saline Spray in Cases of Allergic Rhinitis

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Publication Date: 2026/07/01

Abstract:

➤ Background

Allergic rhinitis is a prevalent IgE-mediated inflammatory condition in which the nasal mucosa is characterised by sneezing, nasal obstruction, rhinorrhoea and itching. Intranasal corticosteroids remain the baseline of treatment, whereas hypertonic saline spray is increasingly used as adjunctive therapies. This study compared the efficacy of intranasal steroid nasal spray (fluticasone furoate) with hypertonic saline (normal saline) nasal spray in patients with allergic rhinitis.

➤ Materials and Methods

A prospective comparative study was conducted in the Department of Otorhinolaryngology, Index Medical College Hospital and Research Centre, Indore. 60 patients with clinically diagnosed allergic rhinitis were divided into two groups of 30 each. Group A received intranasal steroid nasal spray (fluticasone furoate), while Group B received hypertonic saline (normal saline) nasal spray. Symptom scores, and medication dependency over a two-month follow-up period.

➤ Results

Both treatment groups demonstrated significant clinical improvement. However, the intranasal steroid (fluticasone) group showed superior reductions in nasal symptoms and RCAT scores. Mean RCAT scores improved from 17.44 at baseline to 3.84 at two months in Group A compared with 20.52 to 11.92 in Group B. Medication dependency was also significantly reduced among patients receiving fluticasone.

➤ Conclusion

Intranasal steroid (Fluticasone furoate) nasal spray was significantly more effective than hypertonic saline (normal saline) nasal spray in controlling symptoms of allergic rhinitis and improving quality of life.

Keywords: Allergic Rhinitis, Intranasal Steroid (Fluticasone Furoate), Hypertonic Saline, RCAT, Intranasal Corticosteroids.

How to Cite: Dr. Wasim Khan; Dr. Navin Agrawal; Dr. Chhavi Agrawal; Dr. Tanuj Chaturvedi; Dr. Sanuj; Dr. Ajinkya Raverkar (2026) An Observational Study to Compare Intranasal Steroids Spray with Hypertonic Nasal Saline Spray in Cases of Allergic Rhinitis. *International Journal of Innovative Science and Research Technology*, 11(6), 1940-1943. <https://doi.org/10.38124/ijisrt/26jun1780>

I. INTRODUCTION

Allergic rhinitis (AR) is one of the most frequent chronic respiratory diseases globally and affects the population approximately 10-30%. It is characterised by the nasal congestion, rhinorrhoea, sneezing and itching resulting from an IgE-mediated inflammatory response following allergen exposure. AR significantly impairs sleep quality, cognitive performance, work productivity, and overall quality of life.

Intranasal corticosteroids are currently regarded as the most appropriate pharmacological agents for AR due their potent anti-inflammatory effects. Fluticasone furoate is a highly selective corticosteroid with prolonged mucosal retention and excellent safety profile. Hypertonic saline nasal sprays have also gained popularity because they improve mucociliary clearance and reduce mucosal oedema without systemic adverse effects.

This study was held to compare the clinical efficacy of intranasal steroid (fluticasone furoate) nasal spray and hypertonic saline (normal saline) nasal spray in patients with allergic rhinitis.

II. MATERIALS AND METHODS

➤ Study Design and Setting-

This was a hospital-based, prospective observation comparative study conducted over a period of 18 months at the Department of Otorhinolaryngology, Index Medical College, Hospital and Research Centre under Malwanchal University, Indore, Madhya Pradesh, India.

➤ Participant Selection-

A total of 60 patients of both sexes, who are of more than 12 years with clinically diagnosed with allergic rhinitis were taken for the study. Group A consisted of 30 patients diagnosed with allergic rhinitis and received Intranasal steroid (Fluticasone furoate) nasal spray, while Group B consisted 30 patients diagnosed with allergic rhinitis and received Hypertonic saline nasal spray.

Inclusion Criteria-Symptomatic individual more than 12 years of age and patient of either sex with clinically diagnosed for allergic rhinitis and willingness to participate. Exclusion Criteria-Individuals presenting with history of nasal polyposis, acute sinus infection, previous nasal surgery, pregnancy and lactation and systemic steroid therapy.

➤ Outcome Measures-

Included the RCAT score, Sneezing score, Rhinorrhoea score, Nasal obstruction score, Nasal itching score and Medication dependency, which were assessed at the end of two-months treatment period to evaluate the clinical response. Data were tabulated and analysed using SPSS software. Continuous variables were expressed as mean $\pm$ standard deviation. Student's t-test and chi-square test were applied where appropriate. AA p-value <0.05 was considered statistically significant.

III. RESULTS

➤ Demographic Characteristics-

A total of 60 participants were listed, out of which 30 patients were with intranasal steroid nasal spray (fluticasone furoate) and 30 patients were with hypertonic saline (normal saline) nasal spray. This compares the mean age was ~33 years and male were 57.7% and female were 48.3%.

Table 1. Demographic Characteristics

Variable	Observation
Mean Age	~33 years
Male	51.7%
Female	48.3%
Urban Residence	Majority
Commonest Symptom	Nasal Obstruction

Table 2 RCAT Score Improvement

Time Point	Fluticasone	Hypertonic Saline
Baseline	17.44	20.52
1 Month	9.28	14.84
2 Months	3.84	11.92

Table 3 Medication Dependency Score

Time Point	Intranasal steroid (Fluticasone)	Hypertonic Saline
Baseline	2.04	2.88
2 Months	0.20	1.64

Patients receiving intranasal steroid (fluticasone) demonstrated significantly more rapid and better outcome as reduction in severity of symptoms and improvement in quality of life compared with the hypertonic saline group in allergic rhinitis.

IV. DISCUSSION

The present study illustrates that intranasal steroid (fluticasone furoate) nasal spray provides superior symptom control in allergic rhinitis compared with hypertonic saline nasal spray. Significant improvements were observed in RCAT scores, medication dependency, and symptom burden. There was clinical improvement seen in RCAT scores in both groups which was more in Group A score was dropped from a mean of 17.44 at baseline to 3.8 and while in Group B was dropped from a mean of 20.52 to 11.92 in the follow up of two-months.

The observed superiority of intranasal steroid (fluticasone) is consistent with previous literature demonstrating the effectiveness of intranasal corticosteroids in suppressing eosinophilic inflammation, reducing mucosal oedema, and improving nasal airflow. Hypertonic saline was associated with clinical benefit, likely due to enhancement of mucociliary clearance and reduction of mucosal swelling. However, its efficacy was significantly lower than that of fluticasone.

V. STRENGTHS AND LIMITATIONS

- Strengths- It is a Prospective comparative study design which outlined the Standardized outcome assessment using RCAT score by directedly comparing pharmacological and non-pharmacological therapy.
- Limitations- It is a single -centre study with small sample size and short follow up duration and absence of objective allergy testing correlation.

VI. CONCLUSION

The conclusion of this study was to provide evidence of Intranasal steroid (Fluticasone furoate) nasal spray demonstrated significantly greater efficacy than hypertonic saline (normal saline) nasal spray in improving allergic rhinitis symptoms, RCAT scores, and medication dependency. Intranasal steroid nasal spray has helped in more reduction in RCAT score. The findings support its use as primary treatment modality in moderate to severe allergic rhinitis, while hypertonic saline may be used as adjunctive therapy or in mild disease.

DECLARATIONS

- Ethics Approval: Obtained from Institutional Ethics Committee approval obtained from Index Medical College Hospital and Research Centre, Indore.
- Funding: Nil.
- Informed consent: Written informed consent was obtained from all participants.

- Conflict of Interest: None declared.

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