

# The study of turbinectomy in allergic rhinitis

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## Abstract

**Introduction:** The human body is capable of mounting an immunogenic response against a myriad of antigens, and is therefore capable of developing an allergic dysfunction. The nasal chamber and paranasal sinuses are one of the most common sites in the human body to act as shock organs of allergic disease. **Aims and Objectives:** To Study effect of Turbinectomy on Allergic Rhinitis. **Methodology:** This was cross-sectional study carried out at tertiary health care center in the patients attended the Otolaryngology Outpatient Department during January 2013 to January 2014, Here the Turbinectomy operation performed on All the Patients with written and explained consent and after the operation the symptoms were noted in them. The Statistical analysis is done by Z-test (Difference between two proportions). **Result:** Majority of the Patients were in the Age group of 10-20 were 30.00% followed by 1-10 i.e. 24.00%; 40-50-16.00%; 20-30-12.00%; >50-10.00%; 30-40- 8.00%. of the patients were Females 74.00% and 26.00% Males. Before the Operation 84.44% of the patients reported Problem of Itchy nose, mouth, eyes, throat, skin, or any area while only 26.66% patients reported this problem after Operation this observed difference was statistically significant ( $Z=5.51$ ,  $p<0.05$ ) similarly of Runny nose 71.11% and 20.00% ;Significant ( $Z=4.8$ ,  $p<0.05$ ), Sneezing 77.77% and 17.77% ;Significant ( $Z=5.69$ ,  $p<0.05$ ) . Dark circles under the eyes in 51.11% and 31.11% this was not statistically significant ( $Z=1.92$ ,  $p>0.05$ ). Headache in 62.22% and 26.66%; significant ( $Z=3.39$ ,  $p<0.05$ ). Problems with smell 53.33% and 28.88%; Significant ( $Z=2.35$ ,  $p<0.05$ ). Stuffy nose (nasal congestion) 64.44% and 15.55%; Significant ( $Z=4.49$ ,  $p<0.05$ ). **Conclusion :** With the Turbinectomy operation significantly there was reduction in frequency of the symptoms occurred in allergic rhinitis like Itchy nose, mouth, eyes, throat, skin, or any area, Runny nose, Sneezing, Headache , Problems with smell, Stuffy nose (nasal congestion) Dark circles under the eyes which was significantly reduced.

**Keywords:** Turbinectomy, Allergic Rhinitis.

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## INTRODUCTION

The human body is capable of mounting an immunogenic response against a myriad of antigens, and is therefore capable of developing an allergic dysfunction. The nasal chamber and paranasal sinuses are one of the most common sites in the human body to act as shock organs of allergic disease. Owing to its close relation to the other components of the respiratory tract, both anatomically and functionally, inhalant allergy of upper respiratory

tract may influence the development and clinical course of diseases such as Bronchial asthma, sinusitis, pharyngitis and otitis media. Allergic rhinitis is characterized by the symptoms such as recurrent paroxysmal multiple bouts of sneezing, nasal obstruction, watery rhinorrhea and nasal and/or orbital pruritus. Though, patients and doctors alike have traditionally accorded less attention to AR than it deserves the fact remains that AR has been a major cause of morbidity, social embarrassment and impaired performance either at school or work. Allergic rhinitis currently affects 10-30% of the world population and hence is one of the most important health problems globally<sup>1</sup>. The prevalence of AR has been rising not only in the developed countries, but also in developing countries such as India, due to rapid urbanization and industrialization. Most cases of AR can be easily controlled both by lifestyle and avoidance measures and appropriate medical therapy as per ARIA (Allergic Rhinitis and its Impact on Asthma) guidelines<sup>2</sup>. But, surgery to reduce the surface area of the nasal mucosa and turbinates may be at times necessary in

those patients in whom adequate control of symptoms is not achieved with medical therapy alone<sup>3,4,5,6,7</sup>. Allergic rhinitis is the commonest chronic immunologic disease in humans<sup>8</sup>. Pharmacological therapy combined with avoidance of antigens is the most popular effective management strategy, with variable symptom control. Certain cases wherein medical therapy alone does not achieve satisfactory symptom control, turbinate reduction surgery finds merit. Turbinectomy reduces the area of mucosal surface exposed to aero-antigens<sup>9</sup>.

### AIMS AND OBJECTIVES

To Study effect of Turbinectomy on Allergic Rhinitis

### MATERIAL AND METHODS

This was cross-sectional study carried out at tertiary health care center in the patients attended the Otolaryngology Outpatient Department during January 2013 to January 2014, All the patients who were having the symptoms of Allergic Rhinitis like Itchy nose, mouth, eyes, throat, skin, or any area, Runny nose, Sneezing Dark circles under the eyes, Headache, Problems with smell, Stuffy nose (nasal congestion) were included into study while those who were having serious illness like malignancies, immunocompromised diseases and not given consent were excluded from the study. Here the Turbinectomy operation performed on All the Patients

with written and explained consent and after the operation the symptoms were noted in them. The Statistical analysis is done by Z-test (Difference between two proportions).

### RESULT

**Table 1:** Age wise Distribution of the Patients with Allergic Rhinitis

Age	No.	Percentage (%)
1-10	12	24.00%
10-20	15	30.00%
20-30	6	12.00%
30-40	4	8.00%
40-50	8	16.00%
>50	5	10.00%
<b>Total</b>	<b>50</b>	<b>100.00%</b>

Majority of the Patients were in the Age group of 10-20 were 30.00% followed by 1-10 i.e. 24.00%; 40-50-16.00%; 20-30-12.00%; >50-10.00%; 30-40-8.00%.

**Table 2:** Gender wise Distribution of the Patients with Allergic Rhinitis

Sex	No.	Percentage (%)
Male	13	26.00%
Female	37	74.00%
<b>Total</b>	<b>50</b>	<b>100%</b>

Majority of the patients were Females 74.00% and 26.00% Males.

**Table 3:** Distribution of the Patients as per the various symptoms before and after Turbinectomy Operation reported by Patients

Symptoms Reported by Patients as a Problem of	Before		After		P-value
	(n=45)	(%)	(n=45)	(%)	
Itchy nose, mouth, eyes, throat, skin, or any area	38	84.44%	12	26.66%	Z=5.51, p<0.05. HS
Runny nose	32	71.11%	9	20.00%	Z=4.8, p<0.05. HS
Sneezing	35	77.77%	8	17.77%	Z=5.69, p<0.05. HS
Dark circles under the eyes	29	58.00%	12	24.00%	Z=2.98, p<0.05. NS
Headache	28	62.22%	12	26.66%	Z=3.39, p<0.05. HS
Problems with smell	24	53.33%	13	28.88%	Z=2.35, p<0.05. HS
Stuffy nose (nasal congestion)	29	64.44%	7	15.55%	Z=4.49, p<0.05. HS

Before the Operation 84.44% of the patients reported Problem of Itchy nose, mouth, eyes, throat, skin, or any area while only 26.66% patients reported this problem after Operation this observed difference was statistically significant (Z=5.51, p<0.05) similarly of Runny nose 71.11% and 20.00%; Significant (Z=4.8, p<0.05), Sneezing 77.77% and 17.77%; Significant (Z=5.69, p<0.05). Dark circles under the eyes in 51.11% and 31.11% this was statistically significant (Z=2.98, p<0.05. NS). Headache in 62.22% and 26.66%; significant (Z=3.39, p<0.05). Problems with smell 53.33% and 28.88%; Significant (Z=2.35, p<0.05). Stuffy nose (nasal congestion) 64.44% and 15.55%; Significant (Z=4.49, p<0.05).

### DISCUSSION

The mucosa of the turbinate is an essential tissue for proper respiratory function. Its roles include air humidification, air filtration, and the warming of inspired air.<sup>11</sup> Nasal obstruction due to enlarged inferior turbinates is a relatively common occurrence in otolaryngology, and when more conservative treatment fails (nasal steroids, allergic rhinitis treatment, etc), turbinate surgery may be indicated. Otolaryngologists use many different techniques to treat enlarged turbinates.<sup>12</sup> Although the nasal mucosa of the turbinates swells as part of the nasal cycle, outside agents such as infection, inhaled allergens, airborne irritants, and mucosal hyperactivity can exacerbate the physiological swelling, necessitating a need for intervention.<sup>13</sup> Either the osseous or mucosal

portion of the turbinate may be hypertrophic. For example, patients who present with allergic rhinitis generally have a swelling of the mucosa, while patients with a severe septal deviation may present with a unilateral enlargement of the bony component of the turbinate.<sup>14</sup> Various surgical techniques are available to reduce the size of the inferior turbinate. This includes turbinectomy, turbinoplasty, extramucosal or submucosaelectrocautery, radiofrequency ablation (RFA), laser-assisted resection or ablation, and cryosurgery.<sup>15</sup>

## CONCLUSION

In our study we have found that Majority of the Patients were in the Age group of 10-20 were 30.00% followed by 1-10 i.e. 24.00%; 40-50-16.00%; 20-30-12.00%; >50-10.00%; 30-40- 8.00%. Majority of the patients were Females 74.00% and 26.00% Males. Before the Operation 84.44% of the patients reported Problem of Itchy nose, mouth, eyes, throat, skin, or any area while only 26.66% patients reported this problem after Operation this observed difference was statistically significant ( $Z=5.51, p<0.05$ ) similarly of Runny nose 71.11% and 20.00% ;Significant ( $Z=4.8, p<0.05$ ), Sneezing 77.77% and 17.77% ;Significant ( $Z=5.69, p<0.05$ ) . Dark circles under the eyes in 51.11% and 31.11% this was not statistically significant ( $Z=1.92, p>0.05$ ). Headache in 62.22% and 26.66%; significant ( $Z=3.39, p<0.05$ ). Problems with smell 53.33% and 28.88%; Significant ( $Z=2.35, p<0.05$ ). Stuffy nose (nasal congestion) 64.44% and 15.55%; Significant ( $Z=4.49, p<0.05$ ).

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