

CASE STUDY

# Management of Allergic Rhinitis and Role of Diamine Oxidase- Single Case Report

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## ABSTRACT

**Introduction:** Allergic rhinitis is a disorder of nose induced by an IgE mediated inflammation after allergen exposure leading to sneezing, rhinorrhea, nasal pruritis, nasal stuffiness, etc. Worldwide it affects between 10-25% of the population. Considering its signs and symptoms, it can be correlated with *Vataja Pratishyaya*. Importance is given to *Pratishyaya* in classics, as it has got a dedicated chapter in Sushruta Samhitha. In contemporary medicine it has been treated with anti-histamines and corticosteroids, which results in various side effects and reoccurrence of the same, thus it's the need of the hour to make use of Ayurveda to tackle the cause and make use of novel bio marker like DAO (Diamine Oxidase).

**Materials and methods:** A female patient of age 22 approached our OPD, with complaints of sneezing, running nose and nasal blockage since 4 years. Subject underwent Ayurvedic treatment comprising of *Gudardraka Avaleha*, *Karpasasthyadi Taila Nasya* and *Pathya* for a period of one month.

**Result:** Patient felt subjective improvement in the symptoms.

**Discussion:** Here we have taken the line of treatment which has been told for *Vataja Pratishyaya*, which includes *Nasya* in the later stages of the disease which does *Srotho Shodhana* as well as *Snehana*. The medicine administered initially have *Shothahara* and *Rasayana* properties. Also, following a strict *Pathya* would also have made an impact.

**Key Words** Allergic rhinitis, *Vataja Pratishyaya*, *Nasya*, *Diamine Oxidase*

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## INTRODUCTION

*Pratishyaya* (rhinitis) is one among the common diseases affecting respiratory system. In Ayurveda, Acharya Sushruta has described 31 *Nasa Roga* (diseases of nose) among them a separate chapter has been devoted to *Pratishyaya* in *Uttaratantra*.<sup>1</sup> It shows the importance of the same; *Vataja Pratishyaya* (rhinitis due to Vata) is

one among the five types of *Pratishyaya*.<sup>2</sup> It is a common *Nasagatharoga* characterised by *Bhrisha Kshavathu* (excessive sneezing tendency), *Acha Kapha Sruti* (discharge of clear mucous), *Ghranoparodha* (blockage of nose), *Nistoda* in *Shankhapradesha* (pricking pain in temple), *Shirovyatha* (Distress in head or pain) and *Shosha* in *Gala* (Dryness of throat), *Keetika*

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*Eva Sarpanti* (feeling as if insects are crawling/pruritus), *Swaropaghata* (Hoarseness of voice).<sup>3</sup> Based on above symptoms it can be compared with Allergic Rhinitis (ICD-J30.2, J30.89).<sup>4</sup> Allergic Rhinitis is a disorder of nose induced by an IgE mediated inflammation after Allergen exposure leading to rhinorrhea, nasal pruritus, bilateral nasal stuffiness associated with cough, chest tightness.<sup>5</sup> Worldwide it effects between 10-25% of the population. In India it constitutes more than 50% of all allergies, 20 - 30% people suffer from it, and are prone to bronchial asthma in later stage.<sup>6</sup> Allergic Rhinitis itself is not life-threatening problem (unless accompanied by severe asthma or anaphylaxis), morbidity from the condition can be significant, and it can significantly impair patient's quality of life and productivity. In children also physical, social, psychological wellbeing and academic performance is adversely affected by the illness. Allergic rhinitis often coexists with other disorders, such as Asthma.<sup>7</sup> Treatment modalities adopted by Allopathic system of medicines may cause several complications like mucous membrane atrophy, septal perforation, rhinitis medicamentosa, drowsiness, epistaxis, nasal polyp and bronchial asthma etc., which may also occur due to high dosage and long term use.<sup>8</sup> By considering these facts there is need to develop a treatment protocol which aims to reduce the symptoms and prevent the reoccurrence of the disease. Though it has been said that the disease *Pratishyaya* in the initial phase, is a curable entity, in chronic course it may lead to *Dushta*

*Pratishyaya* (chronic rhinitis) which may be associated complications with dreadful prognosis as well. According to Acharya Charaka it can lead to *Kshaya*.<sup>9</sup>

Diamine oxidase Enzyme: Histamine is the main mediator, producing nasal airway exudation, itching, and obstruction in subjects with AR through an immune reaction.

Mast cells and vascular endothelial cells synthesize and store it from the decarboxylation of the amino acid L-histidine, and its catabolism is regulated mainly by diamine oxidase (DAO).

Under normal circumstances, DAO forms an enzymatic barrier in cells of the intestinal epithelium, which sufficiently protects from resorption of histamine from ingested food into the blood stream. Thus this study aims to establish relationship between Allergic rhinitis and Diamine oxidase, and bridge the gap between diagnosis and treatment

## MATERIALS & METHODS

A female subject of 24 years approached our OPD on 11/09/2023 with complaints of Sneezing, running nose, nasal blockage, itching around nose and eyes since 2 years.

### *History of Present complaints:*

Patient was apparently normal before 2 years gradually she developed the symptoms after changing her residency to a newer town because of education purpose, the symptom persists throughout the year.

*Associated complaints:* Nothing significant

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**Family History:** Nothing significant

**Drug History:** Levo cetirizine, Otrivin-O

- **Triggering factors:** Dust, wind, cold food, junk food
- **Relieving factors:** Sleep, hot water
- **Addiction:** None



**Figure 1** Nasal endoscope image before treatment

**Systemic Examination:**

- CVS: S1 & S2 heard, no murmur
- RS: NVBS, no wheezing
- CNS: Orientation sound

**Local examination:**

- Anterior rhinoscopy:
  - a) Inferior turbinates- Hypertrophied, boggy structure
  - b) Nasal mucosa- Pale, bluish hue
- **Nasal Endoscopy:** Before treatment was done with Lund Kennedy endoscopy grading system as seen in table 1

- **Endoscopy:** Image as seen in figure 1

**Table 1** Nasal endoscopy -Lund-Kennedy Grading System

Criteria	Grading
1) Discharge	1
2) Polyp	0
3) Oedema	1
4) Crusting	0

**Investigation:** Haematogram report as seen in table 2.

**Table 2** Haematogram report

Investigation	Findings
AEC	860.31 /mL
ESR	32mm

**Treatment Plan:**

- *Gudardraka* – internally (12gm daily) for 30 days
- *Karpasastyadi Taila Nasya* (8 drops in each nostril) for 21 days. Given in 3 sittings with 3 days gap in between the sittings.

**Follow-up:** Once in fifteen days for 1 month.

**Table 3** Results after treatment

Investigations	Findings
1) Nasal Endoscopy	a) Discharge- 0
	b) Crust- 0
	c) Oedema- 0
2) AEC	400 /ml
3) ESR	18 mm

### RESULTS

As seen in table 3

- Subjective symptoms got better from moderate to mild. (Total nasal symptom score): from score of 2 =Moderate (symptom bothersome but tolerable) to 1Mild (symptom clearly present but easily tolerated)
- There was improvement in the score of MRQLQ (Mini rhino conjunctivitis quality of life questionnaire): from, a lot troubled = 4 to slightly troubled = 2

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After endoscopy: as seen in figure 2



**Figure 2** Nasal endoscope image after treatment

## DISCUSSION

Allergic manifestations are common among all age groups; it is one of the main causes of hospital visits worldwide. In today's world there are some diseases which are flourishing and need to be given attention. Many research works have been carried out on *Vataja Pratishyaya* (Allergic Rhinitis) in Ayurveda and also in contemporary system of medicine, *Vataja Pratishyaya* (Allergic Rhinitis) still remains as a hazardous problem as it has more chances of recurrent episodes and serious complications. *Gudardraka Avaleha* consists of ingredients such as *Ardraka*, *Dipyaka* which have anti-histaminic, anti-tussive and anti-inflammatory action; it may also give an immune modulator effect<sup>10</sup> which will be effective in the management of *Vataja Pratishyaya* (Allergic Rhinitis). *Nasya* (errhine therapy) is a line of treatment for most of the *Urdhwa Jatru Vikaras* (treatment of disease above clavicle) Acharya Vagbhata has mentioned that the *Nasya* which is administered for the treatment of *Ardita* (facial

paralysis) can be taken for treating *Vataja Pratishyaya*,<sup>11</sup> so by following this advice we have considered here to take *Karpasasthyadi Taila* for *Nasya*, which consists of following ingredients *Karpasathi*, *Bala*, *Rasna*, *Masha*, *Kulatha*, *Devadaru*, *Kushta*, *Sarshapa*, *Nagara*, *Shatapushpa* etc, drugs which are having *Ushna Virya* (hot potency) and *Vatahara* (relieves *Vata*) action. Considering the pharmacological properties of all the 15 known drugs it may be said the combination may help in clearing the mucus by thinning it and removal of airborne allergens and inflammation mediators such as histamine, it may also improve the ciliary beat function which may eventually lead to the improvement in muco-ciliary function.<sup>12</sup> The *Nasya* is *Tikshna* (sharp), *Sukshma* (minute) and *Vyavayi* (quick spreading) in nature, helps to do *Shodhana* (elimination) of *Prakupitha Dosha* (vitiated *Dosha*) and *Nasa Mala* etc. clears the channels of the head. Which eventually remove the *Srotho Sangatwa* caused by the *Kapha Dosha* and pave the way for easy movement of *Vata*. *Taila* used for *Nasya* here is having *Ushna* and *Snigdha Guna* which will pacify the aggravated *Vata Dosha*.

## CONCLUSION

Thus Diamine oxidase is a digestive enzyme and its metabolism can be improved by the application of Ayurvedic treatment and lifestyle, which can be a milestone in Allergic rhinitis treatment, also re-establishing the basic thought

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process of Ayurveda that every disease starts  
from the gut.

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