



## An Ayurvedic Conceptual Study on *Pratishyaya* (Rhinitis) with Special Emphasis on Pediatric Population-A Review

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**Abstract:** *Pratishyaya* is one among *Nasagata Roga* (Disorders of the nasal cavity). Symptoms of *Pratishyaya* resemble those of Rhinitis. Children are more likely to develop *Pratishyaya*, which disturbs their daily activities and may hamper their growth and development. There is no use of antibiotics in acute rhinitis. There is limited data regarding the safety of Pseudoephedrine and phenylephrine in rhinitis. There is a need to find the best Ayurvedic interventions to prevent and cure *Pratishyaya* (Rhinitis). Previous review articles were alike and included the conceptual study of *Pratishyaya*. Articles should have included proper classification, indications, and contraindications of *Shodhana* (Biocleansing therapy) and *Shamana* (Palliative procedure). No review article focused on *Pratishyaya* and its management in the pediatric population. There is a need to classify *Shodhana karma* and *Samshamana* therapy in *Pratishyaya* along with their indications and contraindications and to review the *Pratishyaya* in pediatric population. Disturbance of digestive fire and production of *Ama* (toxins) causes vitiation of *Doshas* and obstruction of channels which produces symptoms. *Shamana* treatment should be administered in the acute stage to digest vitiated *Doshas* and *Shodhana* therapies like *Nasya* are to be given in the chronic or recurrent stage of Rhinitis. Improper milk intake and sleep intake can lead to *Pratishyaya* in breastfeeding babies. *Dhoopana* (herbal fumigation of the nasal cavity) is indicated in the acute stage of Rhinitis. *Langhana* (Fasting or light diet) helps correct *Agni* and vitiated *Doshas*. In *Dhoopana*, fumes are a gaseous medicine that increases its bioavailability. *Nasya* is effective but is not indicated for children below 7 years of age. So, local nasal administration of fumes (*Dhoopana*) can be adopted for its management.

**Keywords:** *Pratishyaya*, Rhinitis, Allergic Rhinitis, *Nasya*, Pediatric, *Kashyapa*, *Nasya*, *Dhoopana*, and *Dhoopana*.

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## I. INTRODUCTION

### I.1. Background

"Pratishyaya" refers to the variety of discharges produced when accumulated bodily humor becomes lodged in the nose. *Pratishyaya* is among *Nasagata Roga* (Disorders of the nasal cavity) in which *Kaphadi Doshas* are continuously eliminated through the nose. These vitiated *Doshas* accumulate in the head, and their further movement towards the nose causes *Pratishyaya*.<sup>1</sup> It is a *Kapha-Vata* dominant disease that is difficult to treat and is characterized by *Nasavrava* (Nasal discharge), *Nasanaha* (Nasal Congestion), *Shirogourava* (Heaviness), and *Anadhvapihita Nasa* (Intermittent nasal obstruction).<sup>2</sup> These *Lakshana* (Symptoms), which are those of *Pratishyaya* as described in the texts of Ayurveda, resemble those of rhinitis. In rhinitis, nasal mucosa is inflamed due to infection, allergy, or injury. The nasal mucosa has a rich blood supply, and stimulation of the sympathetic nervous system causes vasoconstriction, which further results in shrinkage of the nasal mucosa. On the other side, stimulation of the parasympathetic system is responsible for excessive secretion from the nasal mucosa and local vessel dilatation. Emotional disturbance also plays a significant role as the hypothalamus controls the autonomic nervous system supply of nasal mucosa.<sup>3</sup> If no treatment is given early, it may get complicated and lead to other comorbid conditions like chronic rhinitis, cough, or breathing difficulty with debility.<sup>4</sup> Children are more likely to develop *Pratishyaya*, which disturbs their daily activities and may hamper their growth and development. There is no connection between immunization and routine infections like rhinitis. Vaccination provides immunity against specific diseases, not against routine infections, which depend on the child's general immunity.<sup>5</sup> There is no use of Antibiotics in acute Rhinitis.<sup>6</sup> Antihistamine-decongestants are frequently used for cough and cold. Still, in some studies, these were ineffective in managing rhinitis.<sup>7</sup> There is limited data regarding the safety of Pseudoephedrine and phenylephrine in rhinitis.<sup>8</sup> Hence, there is a need to find out the best Ayurvedic interventions which can be used for prevention as

well as cure of *Pratishyaya* for both adults and pediatric populations. The study aims to evaluate the conceptual study of *Pratishyaya* which includes classification, etiology, pathogenesis, prodromal symptoms, general and specific signs and symptoms of *Pratishyaya* mentioned in various ayurveda classics. The objective of our study is to review *Shodhana* (cleansing therapy) and *Shamana* (palliative procedure) therapy in *Pratishyaya* and evaluation of the *Pratishyaya* in pediatric population.

### I.2. Epidemiological Study of Rhinitis

The prevalence of non-allergic rhinitis is about 40%.<sup>9</sup> In India the prevalence of allergic rhinitis was reported 11.3% in children aged 6-7 years and 24.4 % in children aged 13-14 years.<sup>10</sup> A serious global health problem over the past 10 years, allergic rhinitis now affects anywhere from 1% to 25% of the world's population and is getting more prevalent daily. According to the World Allergy Organization, allergic rhinitis affects 400 million individuals globally (WAO).<sup>11</sup> In India, the incidence of allergic rhinitis is 20%-30%.<sup>12</sup>

### I.3. Need of the study

- 1) There is a need to classify *Shodhanakarma* (bio-cleansing therapy) and *Samshamana* (palliative procedure) therapy in *Pratishyaya* along with their indications and contraindications.
- 2) To fulfill the research gap of previous review articles related to *Pratishyaya*.
- 3) To review the *Pratishyaya* in pediatric population and find out suitable Ayurvedic Interventions.

### I.4. Lacunas of early studies

Articles reviewed by *Pratishyaya* are compiled in the present study. It was found that all the articles were alike, which includes the conceptual study of *Pratishyaya*. Articles should have included proper classification, indications, and contraindications of *Shodhana* and *Shamana* and management of *Pratishyaya* as per the age group.

Table No.1. Review of previous studies

S.No	Author Name	Title of the Review Article	Conclusion	Lacuna
1.	Pinki Meena, Aparna Sharma, and Ish Sharma <sup>13</sup>	Ayurvedic Literature Review of <i>Pratishyaya</i> w.s.r. Rhinitis	Ayurvedic formulations can be adopted for more effective, non-chemical treatment of <i>Pratishyaya</i> . All formulations are proposed to be evaluated for their effect in <i>Pratishyaya</i> w.s.r to rhinitis to develop a safe and cost-effective treatment for this ailment.	Classification of <i>Shodhana</i> and <i>Shamana</i> in the treatment protocol for <i>Pratishyaya</i> is not mentioned in the article.  Contraindications of local nasal administration of medicine in <i>Pratishyaya</i> are not mentioned.  Management of <i>Pratishyaya</i> in Children is not specified.
2.	Shubham Bafna, Sudha Singh, Deodas Madhavi and Wankhede Prashant <sup>14</sup>	Allergic Rhinitis and Its Ayurvedic Perspective	The use of modern medicines for Rhinitis can provide relief in symptoms but does not prevent from occurrence of the disease. Therefore, <i>Vataja Pratishyaya</i> is correlated with Allergic rhinitis and the use of Ayurveda treatment protocol is emphasized to prevent and cure <i>Pratishyaya</i> .	Etiological factors like <i>Dhoom</i> and <i>Raja Sevan</i> (Inhaled dust particles and allergens) and <i>Ati Sheeta</i> (Exposure to extreme cold) do not cause <i>Vataja Pratishyaya</i> only; Rather, these are general causative factors for all types of <i>Pratishyaya</i> . Moreover, symptoms of <i>Pittaja</i> and <i>Kaphaja Pratishyaya</i> can also be comparable with Allergic

				rhinitis. So, the correlation of <i>Vataja Pratishyaya</i> with Allergic Rhinitis is not justified.
				The article does not mention indications and contraindications of local nasal administration of medicines in <i>Vataja Pratishyaya</i> .
				<i>Vataja Pratishyaya</i> in the pediatric population is not focused.
3.	Beena B, Sharma KK, and Kumar Alok S. <sup>15</sup>	Ayurvedic Literature Review of <i>Vataja Pratishyaya</i> VSR Allergic Rhinitis	<i>Vataja Pratishyaya</i> is correlated with Allergic Rhinitis, and Ayurvedic medicines can be taken to treat <i>Vataja Pratishyaya</i> effectively.	The correlation of only <i>Vataja Pratishyaya</i> with allergic rhinitis and non-consideration of <i>Pitta</i> and <i>Kapha Dosh</i> is unjustified.  Separate <i>Shodhana</i> and <i>Shamana</i> treatment protocol is not classified in the article.  There is no focus on the pediatric population.
4.	Dr.Shrawan Kumar Sahu Prof. K.S. Dhiman, Dr.D.B.Vaghela,Dr Shweta.Mata <sup>16</sup>	Allergic Rhinitis in Ayurvedic Perspectives	Due to the involvement of all three <i>Doshas</i> in Allergic rhinitis, this nasal disorder was correlated with <i>Vata</i> dominant <i>Tridoshaja Pratishyaya</i> . But as per the <i>Vyapadesh</i> <i>Tu Bhuyasa Nyayaa</i> and for timely treatment, it was correlated with <i>Vataj Pratishyaya</i> only.  Allergic rhinitis impairs quality of life, and its treatment includes a holistic approach using blood purifying decoctions and Ayurvedic Immunomodulators.	The article does not mention Ayurvedic Management of acute and chronic conditions of <i>Pratishyaya</i> .  The article is not specifying the management of <i>Pratishyaya</i> in the Pediatric age group.
5.	Khatavakar Mamata Yallappa, V.R. Hiremath <sup>17</sup>	Understanding of <i>Pratishyaya</i> with Special Reference to Rhinitis	<i>Pratishyaya</i> can be prevented by avoiding its causative factors.	Indications and contraindications of local nasal Instillation of medicines and <i>Shodhana</i> are uncovered in the article.  The efficacy of Ayurvedic management in rhinitis is not specified in children.

Table no.I illustrates specific lacunas of previous review articles on *Pratishyaya*. Common lacuna is that none of the studies mentioned *Pratishyaya* in the pediatric population, and the proper classification of *Shodhana* and *Shamana* needs to be specified. These articles must also include the classification and justification of treatment protocol for acute and chronic *Pratishyaya*. The first review article is focussed on a conceptual study of *Pratishyaya* w.s.r. to Rhinitis, but the pediatric population was not included in the review. The second and third articles focussed on *Vataja Pratishyaya* only, and it was compared to Allergic rhinitis. But etiologies of *Pratishyaya* mentioned in Ayurveda literature can cause *Pittaja* and *Kaphaja Pratishyaya* also. Moreover, *Shamana* and *Shodhana* procedures for its management are not classified separately in the same article. The fourth article also focussed on Allergic rhinitis, but the pediatric population was not included in the study. The fifth article also reviewed *Pratishyaya* and concluded that *Pratishyaya* could be prevented

by avoiding its causative factors. Still, it did not focus on the pediatric population as per Ayurveda Literature.

### 1.5. Aim & Objectives

The study aims to evaluate the conceptual study of *Pratishyaya*, which includes classification, etiology, pathogenesis, prodromal symptoms, and general and specific signs and symptoms of *Pratishyaya* mentioned in various classics. The objective of our study is to review *Shodhana* and *Shamana* therapy in *Pratishyaya* and evaluation of *Pratishyaya* in the pediatric population.

## 2. MATERIALS AND METHODOLOGY

All available Ayurveda classics and modern textbooks were searched for the subject of study. Previous research works, articles and journals, and information regarding the subject

were searched from all available sources. Databases like Pubmed, Google Scholar, Dhara portal, and AYUSH portal were searched for the study.

### 3. RESULTS

#### 3.1. Evaluation of Conceptual Study of Pratishtyaya

Acharya Charaka described *Pratishtyaya* in Chikitsa Sthana. Acharya Sushruta mentioned *Pratishtyaya* in Uttara Tantra. In Madhav Nidana, it is mentioned in the second part of the treatise. In Sharangdhar Samhita, it is described in Pratham Khanda. Acharya Bhavprakash and Chakra Dutta described the disease in Chikitsa Prakaran.<sup>18</sup>

#### 3.2. Classification

Acharya Sushruta, Vagbhatta, Madhavakar, Bhava Mishra, and Sharangadhara described the five different types of *Pratishtyaya*. *Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja*, and *Raktaja*. *Raktaja Pratishtyaya* has yet to be described by Acharya Charaka and Kashyapa. Six distinct *Pratishtyaya* categories are listed in Rasa Ratna Samuchaya.

#### 3.3. Nidana (Causative factors)

Various etiological factors of *Pratishtyaya* are mentioned in Ayurveda classics. These are mainly classified as *Aharaja* (related to diet), like reduced digestive fire, indigestion, excessive intake of water, cold items, and excessive intake of dry, heavy, and sweet food items. *Viharaja* (related to lifestyle), like exposure to dust and smoke, holding of natural urges, excessive talking, day sleep, bathing during indigestion, and *Mansik* (psychological factors), like excessive anger.<sup>19,20</sup>

**Table No. 2 Description of etiological factors mentioned by Different Acharya**

<b>Aharaj(dietary)</b>	<b>C.S. (Charaka Samhita)</b>	<b>S.S. (Sushruta Samhita)</b>	<b>A.S. (Ashtanga Sangraha)</b>	<b>K.S. (Kashyapa Samhita)<sup>23</sup></b>
<i>Ajeerna</i> (Indigestion)	+			
<i>Mandagni</i> (Low digestive fire)				+
<i>Vishamashanam</i> (Improper diet intake)				+
<i>Atiguru, Madhur, Sheeta, Ruksha Sevan</i> (Intake of excessive heavy, sweet, cold, and dry food items)				+
<i>Atijalapana</i> after meals (Intake of excessive water after food)				+
<i>Atisheetambupanam</i> (Excessive intake of cold water)	+			
<b>Viharaj(Behavioural)</b>	<b>C.S.</b>	<b>S.S.</b>	<b>A.S.</b>	<b>K.S.</b>
<i>Vega sandharana</i> (Holding of natural urges)	+	+	+	+
<i>Rajadhmrusevan</i> (Exposure to air/dust and smoke)	+	+	+	
<i>Shirasoabhitapam</i> (Heating of head)	+	+		
<i>Rituvashmya</i> (Seasonal variations)	+			
<i>Atisambhasanam</i> (Excessive talking)	+		+	
<i>Prajagratiswapnam</i> (Awakening during sleep time)	+		+	
<i>Atinariprasang</i> (Excessive indulgence in sexual activities)	+	+		
<i>Diwaswapnam</i> (Day sleep)		+		
<i>Apavitramukhashayanam</i> (Not maintaining hygiene)				+
<i>Snana in Ajirna</i> (Bathing during indigestion)				+
<i>Tapa Sevana</i> (Exposure to hot things)		+		
<b>MansikHetus</b>	<b>C.S.</b>	<b>S.S.</b>	<b>A.S.</b>	<b>K.S.</b>
<i>Atikrodha</i> (Excessive anger)	+			

+ : Indicates mentioning of description

Table no. 2 illustrates the classification of various etiological factors of *Pratishtyaya* according to Acharya Charaka, Sushruta, Vagbhatta, and Kashyapa. Holding natural urges is the commonest etiological factor mentioned by all Acharyas. Exposure to air and dust particles is the second common causative factor. Heating of the head, excessive talking, awakening during sleep time, and excessive indulgence in sexual activities are other causes of *Pratishtyaya* mentioned by Acharya Charaka, Vagbhatta, and Sushruta. Improper diet intake, low digestive fire, indigestion, unhygienic conditions, excessive water intake after food, exposure to hot things,

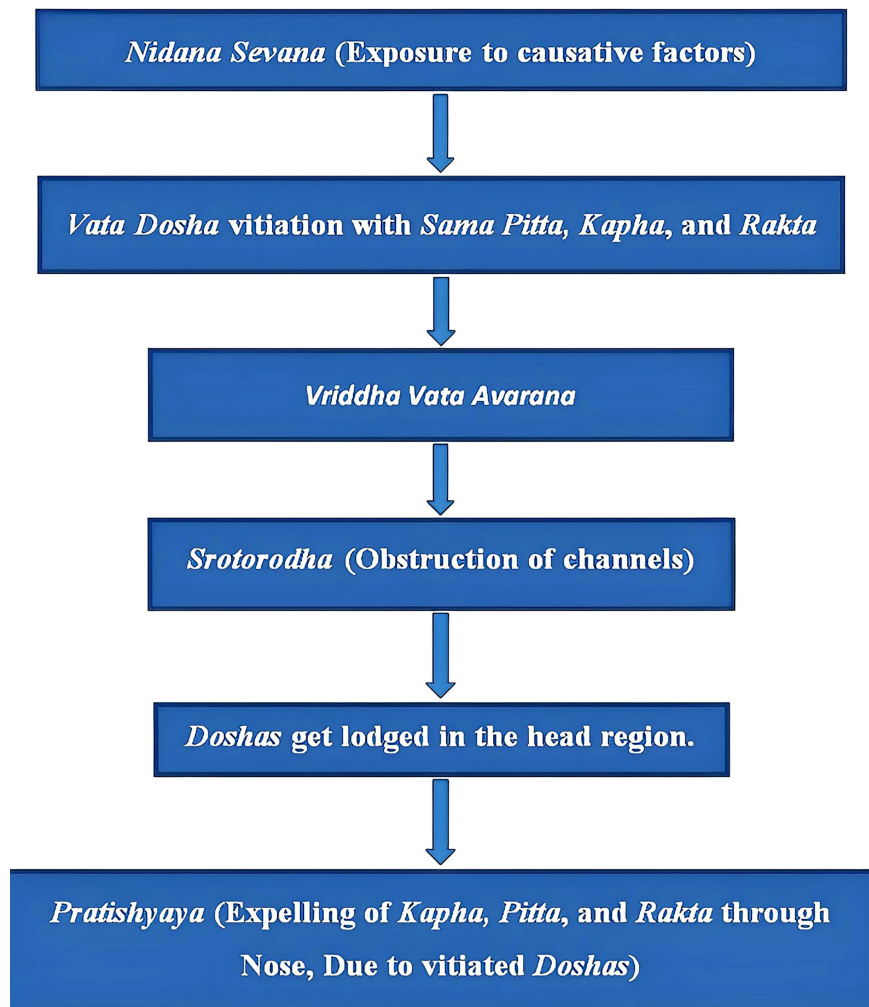
and excessive anger are the rest of the causes for *Pratishtyaya* which are not commonly mentioned by all Acharyas.

#### 3.4. Samprapti (Pathogenesis)

During the early stages of the disease phase, a range of exogenic and endogenic factors might worsen *Tridoshas*. Illness occurs from an imbalance, whereas health comes from the proper functioning of the *Dosha*, *Agni*, *Malas*, and balanced state of *Atma*, *Mana*, and *Indriya*. *Agnimandhya* or a weakening of the digestive fire is first brought on by

exposure to etiological stimuli.<sup>21</sup> This produces vitiation of *Rasavaha*, *Raktavaha*, and *Pranavaha Srotodushti*, which in turn causes vitiation of *Udanvayu*, *Tarpaka Kapha*, and *Bhrajaka*

*Pitta*. It further results in *Sthanasamsrya* of *Doshas* in the head, which causes the disease *Pratishyaya*.<sup>22</sup>



**Fig 1. Samprapti of Pratishyaya (Pathogenesis)**

**3.5. Purva Roopa (Prodromal symptoms)**

Acharya Sushruta, Madhava, and Bhavprakasha mention prodromal symptoms such as,

1. *Shirogurutvam* (Heaviness of head)
2. *Kshvathupravartanam* (Sneezing)
3. *Angamarda* (Bodyache)
4. *Parihristaromta* (Horripilation)

**3.6. Roopa (Signs and symptoms)**

If no treatment is given at the prodromal stage, then signs and symptoms of the disease *Pratishyaya* are seen. Acharya Charaka has not mentioned prodromal signs; rather, he only described *Roopa* (Signs and symptoms). General signs and symptoms are described below.

**3.6.1. According to Acharya Charaka<sup>24</sup>**

1. *Ghranartitoda* (Pricking pain in the nose)
2. *Kshavathu* (Sneezing)
3. *Jalabhsrava* (Watery discharge)
4. *Swarabheda* (Hoarseness of voice)
5. *Shirashoola* (Headache)

**3.6.2. According to Acharya Sushruta, Madhava Nidana, and Bhava Mishra<sup>25-26</sup>**

1. *Anaddhapihitana* (Nasal obstruction with stiffness)
2. *Tanusravapravartini* (Thin nasal discharge)
3. *Galtavoshathshosha* (Dryness of throat, palate, and lips)
4. *Shankh nistoda* (Pricking pain in the head region)

**Table 3: Description of Lakshana (Signs and symptoms) of Pratishyaya**

Dosha	C.S (Charaka Samhita) <sup>26</sup>	S. S (Sushruta Samhita) <sup>27</sup>	A.H (Ashtanaga Hridaya) <sup>28</sup>
<b>Vataja</b>	<i>Ghranatoda, Kshavathu, Jalabhsrava, Swarabheda</i>	<i>Anadyapihita Nasa, Tanu Nasa Srava, Galtaluosthoshosa, Nistoda Shankha, Swaropghata.</i>	<i>Mukhashosha, Kshavathu, Ghranoprodha, Shishirkaphasrutu, Nistoda Shankha, Shirashoola, Kitika Eva Sarpanti, Chirapaki.</i>
<b>Pittaja</b>	<i>Nasagrapaka, Jwara, Vakttrashosha, Ushnapit-cassava.</i>	<i>Krishata, Panduta, Trishna Nipidita etc.</i>	<i>Nasagrapaka, Ushnatamrapittasrava, Trishna, Bhrama, Ghranapidika.</i>

<b>Kaphaja</b>	Kasa, Aruchi, Ghanasrava, Kandu.	Sheetashuklasrava, Guru- shiromukhata, Shirogalosthata-lukanduetc	Shwasa, Vamana, Gatragaurava, Mukhamadhurya, Aruchi, Kandu, Shuklakaphasruti.
<b>Raktaja</b>	—	Tamrakshi, Daur- gandhyaswasavadan, Gandhatanaveti, Krimipatana, Uroghata.	Nasakanduand other symptoms of Raktaja Pratishyaya is like that of Pittaja Pratishyaya.
<b>Sannipataja</b>	Sarvanirupani, Tivra Ruja, Dukhadayee	Sarvani Rupani, Akasmat Vriddhi Shanthi	Sarvaja Lakshana, Akasmat Vridhishanti.

Table no.3 shows a comparison of the sign and symptoms as per *Doshas* according to Acharya Charaka, Sushruta, and Vagbhata. Thin and watery discharge from the nose, pricking pain over the nose and forehead, dry mouth, and hoarseness of voice are the common signs and symptoms due to *Vata Dosh* predominance. *Pitta Dosh* involvement causes hot and yellowish discharge from the nasal cavity with thirst and inflammation over the tip of the nose. *Kapha* predominance is identified by thick whitish discharge from the nasal cavity with local itching, heaviness of the head, and anorexia. *Raktaja Pratishyaya* is mentioned by Acharya Sushruta and Vagbhata only. It is identified by copper color eyes, foul smell, breath, loss of sensation of smell, and worms in the nose, along with other signs and symptoms of *Pittaja Pratishyaya*. *Sannipataja* is characterized by clinical features of involvement of all three *Doshas*; it occurs frequently and stops suddenly.

**3.7. Evaluation of Shodhana and Shamana therapy in Pratishyaya.**

**3.7.1. General treatment protocol for Pratishyaya**

*Nidana Parivarjan* (Avoiding etiological factors should be the initial management). *Langhana* for 5 days is advised in *Pratishyaya* before starting any medicinal treatment.<sup>29</sup> *Ama avastha* (Acute stage) is managed by *Langhana* (Fasting/Light diet), *Pachana*, and *Shamana* includes medicinal treatment given orally to manage signs and symptoms, *Swedana* and *Dhoompana*. In *Pakavastha* (Chronic Stage), *Shodhana* is did by *Nasya Karma*, *Virechana*, *Vamana*, *Asthapana* and *Kaval Graha*.<sup>30</sup>

**3.7.2. Diet and lifestyle are advised in Pratishyaya.**

*Nivata vasa* (Stay in the environment free from the draft of air), *Ushnavastradharana* (Wearing warm clothes), *Laghu*, *Amla*, *Lavana*, *Snigdha*, *Ushna*, *Dravarahita Bhojana* (Intake of light, sour, salty, buttery, warm, and liquid diet), *Janghalamamsarasa* (Nonveg/meat soup), *Yavagodhuma*, *Guda*, *Ksheera* and *Ushnajal* (Use of Barley, wheat flour, jaggery,

milk, and warm water) and *Yusha* seven (Intake of liquid soup).<sup>31</sup>

**3.7.3. Contraindication of Nasya Karma and Indication of Dhoompana in Acute stage of Pratishyaya along with their probable mode of action**

Nasal instillation of oil is not indicated in *Nava pratishyaya* (Acute stage of *Pratishyaya*) as nasal mucosa secretes a large amount of mucus in the early stage, and the nasal cavity is full of secretions in the early stage. So, space is unavailable to absorb the drug instilled in the nose. In *Jeerna Pratishyaya* (chronic Rhinitis), the secretions are diminished; hence, *Nasya* can be given at this stage.<sup>32</sup> The oil used for *Nasya* in *Pratishyaya* acts through its *Sukshma* and *Vyavayi* properties. It crosses microchannels, removes obstruction of sinus ostia, and facilitates sinus drainage and ventilation. *Pradhamana Nasya* (Powder instillation in the nasal cavity) causes irritation which liquefies thick mucus and expels it from the nose.<sup>33</sup> In *Dhoompana*, fumes are a gaseous medicine that increases its bioavailability.<sup>34</sup> *Dhoompanadravya*, when lightened with fire, it releases smoke, CO<sub>2</sub>, and soot. The carbon atom tends to stimulate the respiratory center in the brain, which may trigger the normal physiological function of the respiratory system. It also cleanses the respiratory tract through its disinfective action.<sup>35</sup>

**3.7.4. Vishesh chikitsa (Specific management as per predominance of Doshas)**

Specific management is advised as per *Doshik* Predominance, like intake of hot liquids (soup, meat soup), medicated ghee (prepared from *Vata* alleviating drugs), poultice fomentation, and medicated enema in *Vataja Pratishyaya*. In addition, intake of medicated ghee (prepared from *Pitta* alleviating drugs), fomentation with lukewarm liquids, milk consumption, application of medicines in the form of paste and purgation in *Pittaja Pratishyaya* and fume inhalation, medicated ghee (prepared from *Kapha* alleviating herbs), applicated of hot medicated paste over the forehead and induced vomiting are advised in *Kaphaja Pratishyaya*.

**Table 4. Description of Vishesh Chikitsa (Specific Management) of Pratishyaya**

Dosha	C.S. (Charaka Samhita) <sup>26</sup>	S.S. (Sushruta Samhita) <sup>36</sup>	A.H. (Ashtanga Hridaya) <sup>37</sup>
<b>Vataja</b>	Ghritapana, Shirovirechana, Snigdha Dugdhapana, Mamsarasa, Dhumrapana, Panisweda, Upanaha, Sankara Sweda, Niruha Basti.	Ghritapana, Shirovirechana, Sankara Sweda.	Ghritapana, Shirovirechana, Sankara Sweda.
<b>Pittaja</b>	Ghritapana, Dugdhapana, Nasya, Parishechana Lepa (Pradeha), Virechana	Ghritapana, Nasya, Parishechana, Lepa (Pradeha), Virechana, Kawala Dharana	Ghritapana, Nasya, Parishechana, Lepa (Pradeha)
<b>Kaphaja</b>	Ghritapana, Vamana, Nasya, Langhana, Dhumrapana, Shire Ghritalepa, Sweda, Parisheka	Ghritapana, Vamana, Nasya, Dhumravarti, Antarika, Aushadhisevana	Ghritapana, Vamana, Nasya, Langhana

<b>Sannipataja</b>	<i>Ghritapana, Dhumrapana, Gutika, Avaleha, Nasya, Shirovirechana</i>	<i>Ghritapana, Shirovirechana, Kawala Dharana</i>
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Table no.4 illustrates a comparison of specific management as per Acharya Charaka, Sushruta, and Vagbhata. Intake of ghee and unctuous milk or meat soup, along with local fomentation and therapeutic cleansing of the head, is commonly indicated in *Vata* predominance *Pratishyaya*. Acharya Charaka also mentioned local fume inhalation and therapeutic enema in its treatment protocol. *Pitta* predominant *Pratishyaya* is managed by oral administration of ghee, nasal instillation of oil, local application of medicated paste, and local administration of medicated liquids. Acharya Charaka also mentioned *Virechana* (Therapeutic purgation) in its treatment protocol. *Kapha* predominance *Pratishyaya* is managed by intake of ghee, *Vamana* (Therapeutic vomiting),

Fasting, local application of ghee over the forehead, nasal instillation of oil, and nasal herbal fume inhalation. Acharya Sushruta and Vagbhata give treatment protocol for *Sannipataja Pratishyaya*. It includes oral intake of ghee, local herbal fume inhalation, therapeutic cleansing of the head through the nasal cavity, and oral intake of medicines.

**3.8. Evaluation of Pratishyaya in pediatric population as per Kashyapa Samhita**<sup>38,39,40</sup>

Kashyapa Samhita is Ayurvedic literature of Kaumarbhritya speciality. So, Kashyapa Samhita is reviewed for evaluating the *Pratishyaya* in pediatric population.

**3.8.1. Specific Etiology**

**Table 5: Classification of Etiologies of Pratishyaya in Childhood**<sup>38</sup>

<ul style="list-style-type: none"> <li><b>Aharaja (Dietary)</b></li> </ul>	<ul style="list-style-type: none"> <li>Intake Heavy, sweet, cool, and dry food items.</li> <li>Intake of cold water by a <i>Kapha</i> predominant person.</li> <li>Excessive Intake of fluids after taking meals.</li> <li>Weak digestive fire and intake of improper diet.</li> </ul>
<ul style="list-style-type: none"> <li><b>Viharaja (Lifestyle related)</b></li> </ul>	<ul style="list-style-type: none"> <li>Exposure to cold water by a <i>Kapha</i> predominant person</li> <li>Holding of natural urges.</li> <li>Sleeping in improper posture, sleeping in same posture for prolong period, sleeping with covering face.</li> </ul>
<ul style="list-style-type: none"> <li><b>Aharaja and Viharaja (Diet and Lifestyle related)</b></li> </ul>	<ul style="list-style-type: none"> <li><i>Satatamdvidhamvastanyampeetvapeetvaswapatonityam</i> (frequent sleeping after intake of two types of milk) (breast milk and any other milk).</li> <li>Bathing after taking heavy meals and during indigestion.</li> </ul>

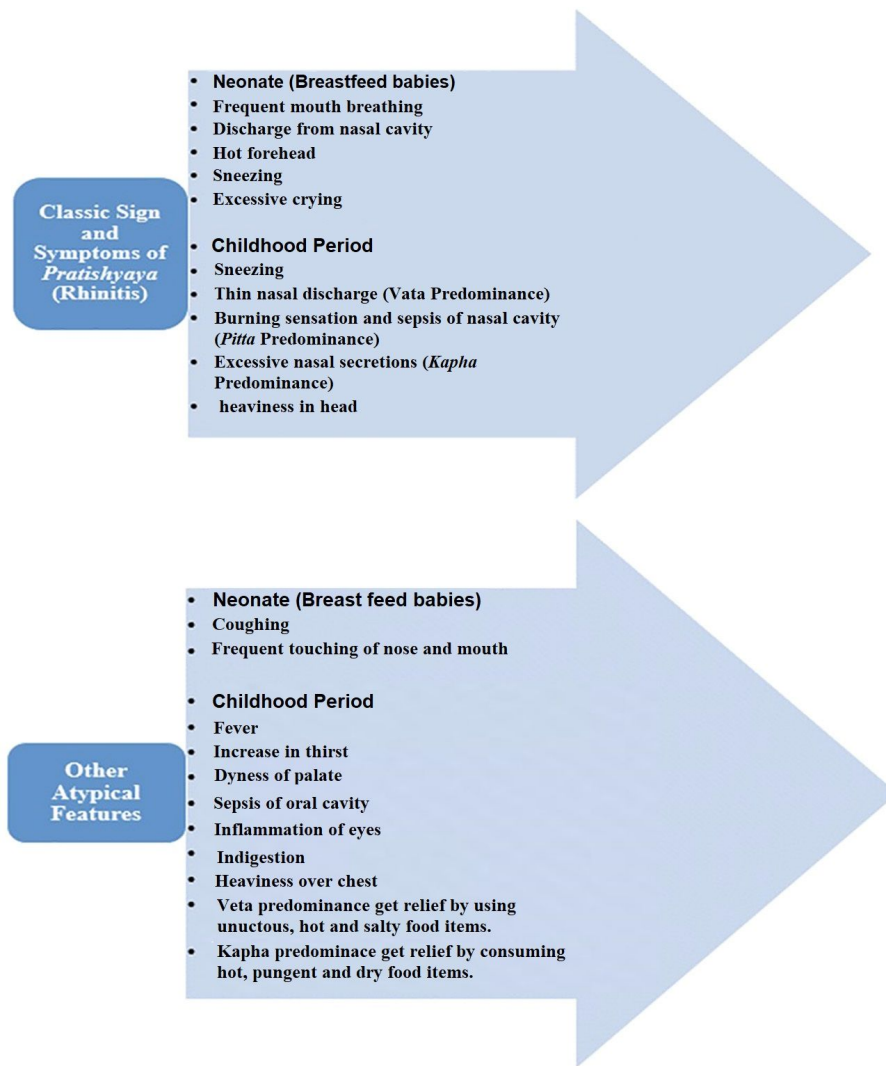
Table No.5 illustrates etiologies of *Pratishyaya* as per Kashyapa Samhita. Some factors are related to diet, like heavy, cool, sweet, and dry food items, intake of excessive fluids after taking food, improper food intake and excessive liquids after taking food, especially by the people with *Kapha* predominance. Some are lifestyle-related causes like exposure to cold water, especially by the predominant *kapha* person, holding of natural urges, and wrong body postures during sleeping. Some factors include dietary and lifestyle related, like the child's intake of two types of milk, sleeping after taking milk and bathing after taking heavy food items, and indigestion.

**3.8.2. Pathogenesis**

Vitiated *Vata* moves upwards and approaches the head; it further vitiates the face and ear and accumulates in the nasal cavity root accompanied by the remaining *Doshas* (*Kapha*, *Pitta*, or *Rakta*). It produces symptoms of *Pratishyaya*.

**3.8.3. Types and Symptoms**

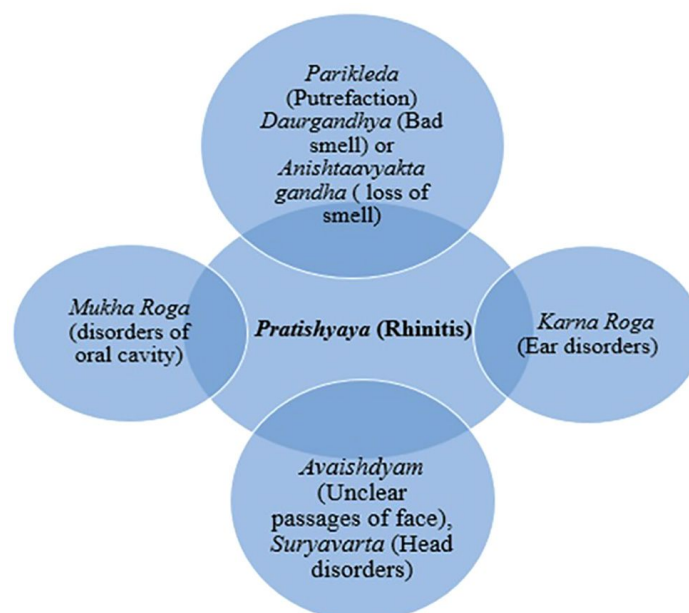
Four types- *Vataja*, *Pittaja*, *Kaphaja* and *Sannipataja*. In *Vataja Pratishyaya*, the child cries a lot with a loss of happiness. Other symptoms are sneezing and expulsion of thin discharge from the nasal cavity during sleeping. *Pittaja Pratishyaya* presents with fever, thirst, burning sensation, dryness of the palate, and sepsis in the nasal and oral cavities. *Kaphaja Pratishyaya* is chronic. It remains long and presents with symptoms of anorexia, nausea, heaviness in the head, excessive secretions, sneezing, indigestion, and heaviness over the chest. "Vatashleshmottarahprayahpratishyayahtridoshaja" *Vata* and *Kapha* dominant *Pratishyaya* is usually *Tridoshaja*. Acharya Kashyapa described some specific signs and symptoms of *Peenasa/Pratishyaya* for a neonate in *Vedanaadhya* as follows frequent mouth breathing during breastfeeding, discharge from the nasal cavity, hotness of forehead, sneezing, coughing, and baby use to touch his nose and mouth frequently.



**Fig 2: Recognizing Pratishyaya in childhood**

**3.8.4. Pratishyaya and its associated Updrava (Co-morbidities)**

Acharya Kashyapa mentioned many co-morbidities about *Pratishyaya*. For example, aggravated *Vata Dosha*, when it enters the oral cavity, causes *Mukha roga* (diseases of the oral cavity), and when it enters in ears causes *Karna roga* ear disorders. Hence, *Vata* gets stuck in the head region, nose, and oral cavity, which causes a change in the sensation of smell. It may cause loss of smell. *Kapha* aggravation causes unclear passages, and *Pitta* aggravation causes putrefaction and a bad smell.



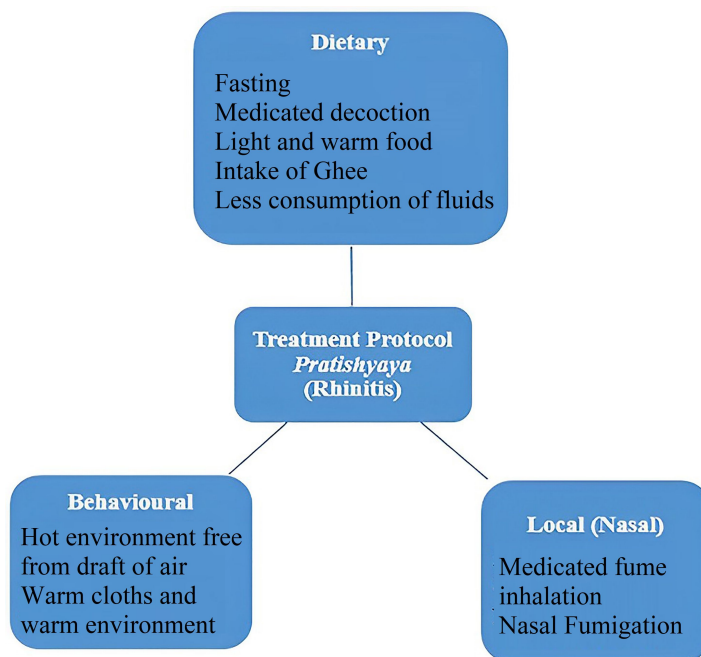
**Fig 3: Relationship of Pratishyaya and its Updrava**



### 3.8.5. Treatment Protocol

*Upvasa* (Fasting), *Deepaniyambu* (Intake of medicated decoction), *Nivatshayanasana* (living in a hot environment free from a draft of air), *Agnipravarana* (Wearing warm clothes), *Dhoompana* (Medicated fume inhalation), *Laghu ushnaana* (Intake of light and warm food) and *Natisampibet* (less fluid consumption). *Ghritpana* (Intake of ghee) in chronic Rhinitis and Black pepper should be kept in the mouth daily in *Pratishyaya*. The mother or caretaker of the child is advised to give proper care to the child during *Pratishyaya*. Nasal fume inhalation and Nasal cavity fumigation are both

treatment modalities mentioned separately in Siddhisthana. As *Dhoompana* is difficult to administer in children and is not indicated before 12 years of age, *Dhoompana* could be a better choice to manage symptoms of *Pratishyaya* in children. Acharya Kashyapa has given the concept of *Lehana* (Licking of immunomodulatory formulations) to enhance the immunity of a baby. One study found that monthly use of *Swarnaprashana* for six months can reduce the frequency of recurrent illness in children.<sup>41</sup> Hence, regular use of Ayurvedic immunomodulatory measures is recommended in the pediatric population for prevention of rhinitis.



**Fig 4: Proposed approach to the clinical management of Rhinitis in young children**

## 4. DISCUSSION

As per Ayurveda, *Agnimandhya* (Low digestive fire) is the root cause of the development of any disease. It produces *Ama* (toxins) in the body, which causes blockage of channels, vitiates *Doshas*, and produces disease.<sup>42</sup> Causative factors of *Pratishyaya*, like intake of heavy diet, cold food items, indigestion, daytime sleep, exposure to cold, and suppression of natural urges, cause disturbance of *Agni* (digestive fire). Hence, avoidance of all the mentioned causative factors is necessary to prevent *Agnimandhya*. As per Ayurveda literature, cold water exposure or immersion in cold water causes *Pratishyaya*. One previous study found that cold water immersion of the hand and forearm causes nasal obstruction.<sup>43</sup> Rhinitis can be due to allergies or infectious agents like viruses or bacteria. *Vata* predominant *Pratishyaya* is correlated with allergic rhinitis.<sup>16</sup> Ayurveda says that ingesting heavy food items can produce symptoms of *Pratishyaya*. It is proven that some food items like eggs, milk, cereal mix, cashew nut, and peanuts are potent allergens, and their intake induces an allergic response in the body and produces symptoms of rhinitis.<sup>44</sup> Exposure to a draft of air, smoke, or dust can produce allergic reactions in the body. In one of the previous studies, it was shown that traffic air pollution is a risk factor for pediatric airway diseases.<sup>45</sup> As per ayurveda classics, indigestion is one of the causative factors for *Pratishyaya*, and it is scientifically proved that gastritis and Gastroesophageal reflux disease (GERD) is strongly associated with non-allergic nasal disorders.<sup>46</sup> In one previous

study, it was found that oesophageal stimulation with normal saline and HCL increased nasal mucus production; it was due to neural reflex between the esophagus and paranasal sinuses.<sup>47</sup> Symptoms of *Pitta* and *Kapha* predominant *Pratishyaya* mimics Infectious Rhinitis due to occurrence of fever, nasal congestion, heaviness in the body and nasal obstruction with thick discharge.<sup>48</sup> Infectious rhinitis are spread by droplets and considered as airborne infection. As per Ayurveda classics, symptoms of *Pranavaha Srotas* (Respiratory channel) and airborne infectious disease are quite similar.<sup>49</sup> *Langhana* helps in the correction of *Agni* and vitiated *Doshas*. It is scientifically proven that fasting promotes the mechanism of autophagy and helps in the prevention and treatment of various chronic diseases.<sup>50</sup> Intake of a hot and liquid diet is prescribed in treating *Pratishyaya*. Intake of hot liquids and chicken soup by a sip or straw increases nasal mucus velocity, It is superior to cold liquids in managing upper respiratory tract infections.<sup>51</sup> *Swedana* is indicated in *Pratishyaya*. Steam inhalation has proven to improve nasal obstruction in rhinitis.<sup>52</sup> *Shamana* includes medicines having *Katu* (Pungent) and *Ushna* (hot) properties, which alleviate *Vata* and *Kapha*. Herbs like *Aristolochiabracteata* Retz, *Curcuma longa*, *Allium sativum* L, and *Embeliaribes* Burm. f. were found effective against the influenza virus.<sup>53</sup> Herbs like *Piper longum*, *Ocimumtenuiflorum*, *Solanum xanthocarpum*, *Azadirachta indica*, *Aloe vera*, and *Tinospora cordifolia* were proven as safe antiallergic agents.<sup>54</sup> *Shodhana* involves local as well as systemic purification therapies. *Dhoompana* is effective in the

acute stage, and *Nasya* is effective in chronic and recurrent Rhinitis. In chronic and recurrent Rhinitis, systemic purification like *Vamana* and *Virechana* are indicated as per the involvement of *Doshas*. Acharya Kashyapa has given the concept of vitiated breast milk which can cause *Agnimandhya* in the child and cause *Pratishyaya*. A neonate consuming both breast milk and bottled milk may develop Rhinitis due to unhygienic conditions, indigestion, and lack of proper nutrients from mother's milk which causes vitiation of *Doshas*. Frequent and improper sleeping can cause vitiation of *Vata* and *Kapha*, which may cause *Pratishyaya*. Due to excessive intake of junk food items, unawareness regarding health and hygiene, and exposure to the environment and infectious agents, school-going children are more prone to recurrent upper respiratory tract infections.<sup>5</sup> *Nidana parivarjana* should be done initially in the Pediatric population. Herbal decoctions, powders, and tablets are prescribed in Ayurveda to combat the disease, but these are quite difficult to administer in children. Local nasal instillation of medicines like *Nasya* and *Dhoopana* can be given to the children for quick relief. *Nasya* is effective but is not indicated for children below 7 years of age. So, *Dhoopana* can be adopted. *Dhoopanadravyas* are volatile and aromatic and work by their antimicrobial, antioxidant, and anti-inflammatory properties.<sup>55</sup> As per Kashyapa Samhita, various comorbidities are associated with *Pratishyaya* which, including eye diseases, oral cavity, head diseases, putrefaction, and bad odor or loss of smell from the nose. Due to the functional and anatomical links between the nose, eyes, nasopharynx, paranasal sinuses, middle ear, and larynx, the infection may spread from the nose to other adjacent parts. It can lead to various comorbidities like effusion of the middle ear, eustachian tube dysfunction, headache, conjunctivitis, middle ear effusion, eustachian tube dysfunction, hyposmia, or anosmia.<sup>56</sup>

## 5. CONCLUSION

*Pratishyaya* is a respiratory tract disease caused by various etiological factors that disturb metabolic activities and lead to the visualization of symptoms. Symptoms are classified based

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on the predominance of *Doshas*. And treatment can be decided because of the acute or chronic stage of the disease. *Shamana* and *Shodhana* are both effective in the management of *Pratishyaya*. The pediatric population must be protected from recurrent infections like Rhinitis using Ayurveda protocols like *Swarnaparshana*. Intake of two types of milk should be avoided in neonates; mothers should be encouraged to provide exclusive breast milk to their babies. Hot and liquid food items with avoidance of exposure to direct air and smoke must be advised to all children suffering from rhinitis. Herbal medicines and local nasal interventions must be given to manage the symptoms. People must know the importance of a healthy diet, lifestyle, and hygienic practices.

## 6. FUTURE SCOPE

At the time, standardization of Ayurvedic treatment protocols for managing rhinitis is a need. Dose, Dosage form, and Palatability of medicines are major issues with using Ayurvedic medicines. It needs to be fixed and resolved. Management of acute rhinitis by using ayurvedic interventions must be accomplished. There is need for more studies regarding the efficacy of local herbal interventions like *Dhoopana* in *Pratishyaya* in the pediatric population. So, this area must be focussed for future research.

## 7. AUTHORS CONTRIBUTIONS STATEMENT

Dr. Monika did the initial literature collection work and conceptualized, designed, and collected the related data regarding this review study. Dr. Renu Rathi, Dr. Bharat Rathi, and Dr. Deepthi Balakrishnana supervised and analyzed the data. Also, necessary inputs regarding modern and Ayurveda were given in designing the review article.

## 8. CONFLICT OF INTEREST

Conflict of interest declared none.

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