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Case Study RRJOASYN

Allergic Reaction in Upper Respiratory Tract Infection (*Anurjata Janya Swasa Roga*): An Ayurvedic Review and Treatment—A Case Study

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Abstract

Respiratory tract infection affects the upper to lower part of the respiratory system including the nose to the alveoli of the lungs. There are two types of infections—upper respiratory infections and lower respiratory infections. The upper respiratory infections affect the sinuses and throat, including common cold, epiglottitis, laryngitis, pharyngitis, and sinusitis. Lower respiratory tract infection affects the respiratory tract and lungs. In general, lower respiratory tract infections last longer and are more severe. These infections include bronchitis, bronchiolitis, chest infection, pneumonia. All age groups are affected by this infection, but children, the elderly, the immune deficient, and those with heart and lung problems are commonly easily infected. Proper observation, antihistamines, antibiotics, non-steroidal anti-inflammatory drugs, insulin, chemotherapy, nasal spray, decongestants, inhaled or oral bronchodilators, inhaled steroids, oral anti-leukotrienes, immunotherapy, saline nasal irrigation are prescribed depending up on the condition. A 24-year-old female patient living in Ahmedabad, Gujarat with chief complaints of Suska Kasa (dry cough), Kanthe raktima (mouth erythema), Punah-Punaha Vranotpatti (recurrent ulceration) specially in Sharada ritu and Vasant ritu, kshavathu (sneezing), Nasa strava (thin, white discharge) since childhood. She took many medicines but could not get rid of it. So she approached the Ayurveda Chikitsa Mandir and Panchkarma Research Center, Ahmedabad, India. All the symptoms of an allergic reaction in the upper respiratory tract were gradually beneficial to the patient. Ayurvedic treatment continued for 2 years.

Keywords: Allergic respiratory tract infection, *Anurjata janya Swasa roga*, *Ayurveda*, upper respiratory tract infection

INTRODUCTION

The upper respiratory tract (URT) is considered as a functional unit. The functional anatomy divides the URT into three interdependent "junction boxes"—(i) ostio-meatal complex (OMC), (ii) sphenoethmoidal recess (SER), and (iii) rhinopharynx (RP). Proper ventilation and effective mucociliary clearance of these sites significantly influence the healthy physiology of the respiratory system [1, 2].

The main pathogenic factor is inflammation of the mucous membrane of the respiratory tract. Allergies are a common cause of spreading infections. The rhinopharynx is a so-called "microbial bank" and a preferred site of pathological development [3].

Inhaled air filter, nitric oxide enrichment, which in turn regulates cilia motility, can prevent viral replication and regulate bronchial muscle tone.

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Therefore, obstruction of OMC, SER and RP is the first necessary pathogenic step in the cascade of inflammatory events in the rhino–sinus–pharynx region, often complicated by infections. In this context, allergic inflammation can promote a vicious cycle that predisposes to re-infection and increases the severity of symptoms.

The URT is infected by many organisms that is, viruses, bacteria, fungi, allergens such as dust, nutrients, pollens, chemical reactions, metal reactions, plants and mites, animal dander, autoimmune diseases, genetics, smoking, and environmental changes [4]. When antigens are present in the respiratory tract, antibodies fight and react to substances that may be harmless to others. Allergy is a treatment problem that can be seen in all age groups. Symptoms of allergic reactions can be felt in different ways depending on the allergens [5]. Its severity varies from person to person. However, the frequency of allergen exposure can also vary according to the duration and amount of the substance.

Common symptoms include cough, sneezing, fever, hoarse voice, tiredness and lack of energy, red and watery eyes, runny or stuffy nose, itchy or burning nose, and sore throat. It can cause breathing difficulties, dry cough and wheezing, swollen lymph nodes (swelling on the sides of the neck) [6]. Other serious symptoms include loss of consciousness, high fever, rapid breathing or difficulty breathing, frequent, severe cough that may come with vomiting, wheezing, dizziness, retraction (more noticeable in children), and stridor (more common in children than in adults) [7]. Studies reported that severe cases of an allergic reaction can have almost the same consequences as hepatitis C, migraines and diabetes. It can show symptoms such as respiratory allergies, fatigue, irritability, and high pulse.

DIAGNOSIS

The URT should be adequately investigated by performing an appropriate examination, including a general physical examination. But if necessary chest X-ray, lung computed tomograpy (CT) scan, lung magnetic resonance imaging (MRI), lung function test, nasal swab, throat swab, sputum test, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), IgG, IgM, routine stool test, stool culture test, fiberoptic endoscopy, and cytology is performed.

TREATMENT

An allergic reaction to a disease of the respiratory system should be treated with effective and safe drugs. Respiratory infections deserve adequate observation, antihistamines, antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs), insulin, chemotherapy, nasal spray, decongestants, inhaled or oral bronchodilators, inhaled steroids, oral anti-leukotrienes, immunotherapy, saline nasal irrigation should be prescribed with careful attention and a preventive strategy should be preferred [7]. Allergic disorders can be successfully treated with specific therapy and allergic symptoms can be optimally alleviated with medication. However, inflammation, infection and allergy often coexist, and therefore an integrated multidisciplinary approach should be considered in clinical practice.

CASE PRESENTATION

A 24-year-old female patient living in Ahmedabad, Gujarat with chief complaints of *Suska Kasa* (dry cough), *Kanthe raktima* (oral erythema), *Punah-Punaha Vranotpatti* (recurrent ulceration), *kshavathu* (sneezing), and *Nasa strava* (thin, white discharge) specially in *Sharada ritu* and *Vasant ritu*, since childhood (Table 1). She took many medicines but could not get relief. So she approached the Ayurved Chikitsa Mandir and Panchkarma Research Center, Ahmedabad, Gujarat, India. Personal History Generalized examination is done which is mentioned in Table 1 & 2, In Table 3 Dashavidha pariksha depicted.

Generalized examination of the patient was done and the findings are tabulated in Table 2.

Prakriti is examined according to patient's nature, *Doshaavastha*, *Rogaavastha* (Table 3).

Table 1. Personal history.

Examination	Result
Ahara	Mixed, more intake of fried and salty food.
Vihara	Disturbed sleeping pattern at night.
Mala	Normal stool; frequency/day
Addiction	Tea 5–6 cup/day
Menstrual history	Regular, Normal (LMP: 3–5 days/28–30)

Table 2. Clinical findings: *Ashta Sthana Pareeksha.*

Examination	Result
Nadi	*Vatta-Kaphaja* (pulse= 72/min)
Mutra	*Prakrit* (4–6 times/day)
Mala	Once/day (satisfactory)
Jihwa	*Sama* (coated)
Shabda	*Prakrutha*
Sparsha	*Snigdha*
Drik	*Prakrutha*
Akruti	*Madhyama*

Table 3. *Dashavidha pariksha*.

Examination	Result
Prakriti	*Sharira: VK, Manasa: Rajasika*
Vikriti	*Madhyama*
Sara	*Madhyama*
Samhanana	*Madhyama*
Pramana	*Madhyama*
Satmya	*Madhyama*
Satva	*Madhyama*
Ahara Shakti	*Madhyama*
Vyayama Shakti	*Madhyama*
Vaya	*Madhyama*

Table 4. Diagnostic assessment.

Local examination of lips	
Parameters	Findings
Site of diseases	Thorax
Sound	No specific sound seen.
Skin of lips	Rough and many cracks developed on the margin and skin of lips

SYSTEMIC EXAMINATION

The respiratory system, cardiovascular system, gastrointestinal system, central nervous system, and musculoskeletal system has shown no abnormality. Diagnostic assessment and blood investigation done are mentioned in Tables 4 and 5, respectively.

Samprapati

- *Dosha-kapha pradhana Tridoshaja vyadhi*
- *Dushya-rasa, rakta*
- *Agni-Jatharagni, Dhatvagni*
- *Srotas- Pranavahasrotasa*

Table 5. Blood investigations.

Test	Value	Test	Value
CBC	Within normal limits	SGPT	18 unit/l
ESR	45/min	SGOT	9 unit/l
S. IgE	2300 IU/ml	S.T3	2.0 nmol/l
Uric acid	2.5 mg/dl	S.T4	1.6 mcq/dl
TSH	1.60 ng/dl		

CBC complete blood count; ESR erythrocyte sedimentation rate; TSH thyroid stimulating hormone; SGPT Serum glutamic pyruvic transaminase; SGOT aspartate transaminase

Table 6. Medicines prescribed.

No.	Drug	Dose	Duration
1	*Chandramruta rasa*	250 mg /four times with *grita*	From 23/3/20 to 6/4/20
2	*Swadista virechana churna*	3 g/ before meal/ *usnodaka*	From 23/3/20 to 6/4/20
3	*Haridra khanda*	1 gm/ three times	From 23/3/20 to 6/4/20
4	*Swasa kuthara rasa*	250 mg/ two times	From 6/4/20 to 13/7/21
5	*Vara gugulu,*	1 tab/tds	From 6/4/20 to 5/10/21
6	*Samsamani vati*	1 tab/tds	From 6/4/20 to 13/7/21
7	*Sitopaladi churna*	500 mg/tds	From 5/10/21

- *Dushti- Sanga*
- *Vyadhiudbhavasthana- Pakwashaya Vyadhi*
- *Adhisthana- Phupphusa*
- *Avastha-Chirakari*
- *Prabhava-Kruchhasadhya*

The Ayurvedic Chikitsa Mandira and Panchakarma Research Center prescribed *Chandramruta rasa, Swadista virechana churna, Haridra khanda, Swasa kuthara rasa, Samsamani vati, vara gugulu, sitopaladi churna* for limited duration as given in Table 6.

Probable Mode of Action of the Drugs

Chandramruta rasa [7]

It consists of *Suddha Parada, Suddha Gandhaka, Loha Bhasma, Abhraka Bhasma, Trikatu churna, Triphala churna, Chavaka, Saindhava, Jiraka churna, Aja dugdha, Tankana.* It acts as *Rasayana, Kapha-Pitta-Vata Shamaka, Deepana-Pachana.* So it does *Kapha vilayana, Kapha chhedana* and expel it from the channels in the body. It works as a lubricant because of its *shnigdha guna.*

Swadista virechana churna [8]

Its contents are *Suddha Gandhaka, yastimadhu churna, Misreya, Sanaya,* and *Sarkara*. It works as *Kapha-Pitta Shamaka, Vatanulomaka, Deepana-Pachana, Ama Pachaka,* and *Rakta Shuddhikara*. So it directly works on *Raktaja Dusti, Pitta-kapha janya rogas, Amavisha Janya vikaras,* and *Virechaka karma*. It expels out allergic antigen from the guts such as prostaglandin and mast cell.

Haridra khanda [9]

The main ingredient of *Haridrakhand* is *Haldi, Nishoth, Haritaki, Daruhaldi Nagarmotha, Ajmoda,* and *Chitrakmool*. It has *Kapha-Pitta Shamaka, Ama visha hara, Rakta dusti hara, Vrana Ropana, Vrana lepana* properties. It has anti-inflammatory, anti-allergic, antihistaminic, antioxidant, and antipruritic properties.

Swasa kuthara rasa [10]

It contains *Suddha Parada, Suddha Gandhaka, Sudhhha Vatsanabha, Sudhhha Tankana, Manahsila, Marich,* and *Trikatu*. It has *strotosodhana, Kapha vilayana, Kapha chhedana* properties. Black pepper

is a major constituent, it stimulates mucous membrane of the respiratory system. It helps in mucous drainage and imparts strength to alveolar mucous membrane. *Aconitum ferox* is antispasmodic in nature, hot and stimulant for mucous membrane. *Shunthi* and *Pippali* releases the sputum. Realgar absorbs excessive secretion from the alveoli. Purified Borax is antispasmodic and removes *Kapha*, so it is useful in *vata-kaphaja vyadhis*. It stimulates mucous membrane of respiratory system and helps in mucous drainage and imparts strength to alveolar mucous membrane.

vara gugulu [11]

Its contents are *Triphala churna, Krishna churna,* and *Gugulu*. It acts as *Tridosha Shamaka, Deepana-Pachana, Vrana Sodhana, Vrana Lepana, Vrana Ropana, Rasayana*. It works on *Agni, Prannavaha, Annavaha strotas* directly. So it cures *Dhatvagnimandya* and maintain *Samyaka Dhatus Nirmiti*, thereby decreasing *Kapha* production.

Samsamani vati [12]

Its contents are *Guduchi Ghana, Loha Bhasma, Abhraka Bhasma, Suvarna makshika Bhasma*. It works as *Rasayana, Jwaraghna, Hrudya, Krimihara, Tridosha Shamaka*. It maintains *Dhatu Pariposhana Krama* and *Jirna avastha* and directly works on *Agni*.

Shitopaladi churna [13]

Its contents are *Sita, Tugakshiri, Pippali, Ela,* and *Twaka*. It works on the respiratory system as well as respiratory centre in the brain. It decreases vitiated *Kapha* accumulation in the body, destroy *Avaranas*, and improves *Dhatvagnimandhya*. Clear *Sanga* from the *Samprapti* that way it removed *Kapha* from the body and also increased digestion so it decreased production of *Ama* and *Kapha*. Many researches suggested that it is used as an anti-depressant, immunomodulatory, anti-tumor, and anti-amoebic drug.

Table 7. Assessment of patient's symptoms over the treatment period.

No	**1**	**2**	**3**	**4**	**5**
Symptoms	*Kasa*	*Kanthe raktima*	*Vranotpatti*	*Kshavathu*	*Nasa strava*
23 Mar. 2020	+++	+++	+++	+++	+++
6 Apr. 2020	++	++	++	+	++
11 May. 2020	++	+			++
1 June 6 2020	++	+			++
11 June 6 2020	++	+	++		++
19 June 6 2020		+			++
7 Jul. 6 2020				++	
6 Aug. 2020		++	++	++	++
28 Aug. 2020	++	++	++		
7 Sep. 2020		++	+		++
17 Oct. 2020	++		++		+
28 Nov. 2020		++			+
10 Dec. 2020	+		++		+
11 Feb. 2021	+	+		+	+
3 Mar. 2021		+	++	+	+
13 Apr. 2021		+		+	+
20 May. 2021	+	+		+	+
22 Jun. 2021	+		++		
1 Jul. 2021		+	+		
23 Sep. 2021	+		+		
3 Oct. 2021			+		
25 Oct. 2021					

OBSERVATION

We have assessed patient's symptoms at an interval of 10 days firstly with running the above medicines. After 10 days, *Kasa* decreased moderately, *Kanthe raktima* decreased, *Vranotpatti, kshavathu, Nasa strava* decreased. Then the patient was asked to come to the *Ayurvedic* clinic every 15 days for follow up. The patient was completely symptomatically relieved as mentioned in Tables 7.

CONCLUSION

The present study concluded that there is not a single disease in *Ayurveda* which can be completely correlated as allergic reaction in the URT. But according to *Ayurveda, Anurjata Janya Swasa Roga* can be correlated as allergic reaction in the URT.

The *Ayurvedic* principles of *Kapha-Pitta Shamaka, Vatanulomaka, Ama Pachaka,* and *Rakta Shuddhikara* drugs are used as the treatment protocol for this condition. The present study concluded that the pathological condition was cured because of proper *Ayurveda* concepts and potent medicines. URT infection can also be benefited by oral medicines.

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