

A case study on the management of Prathishyaya (Chronic Allergic Rhinitis) using Bharangi Arka Nasal Spray

Case Report

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Abstract

The omnipresence of *Prathishyaya* among school-aged groups is overlooked until the complications like *kasa*, *swasa* and *rajayakshma* come into being. *Prathishyaya* if taken heed of in the initial stage, helps to frustrate the looming effects of its complications. *Bharangi Arka* is cited as an effectual remedy for *Prathishyaya* in the *Arka Prakasha* of *Ravana*. Prescribing medications for children is usually challenging as they often resist taking them and so, Ayurveda formulations when transmuted into more palatable forms can have salutary impacts on children than classical forms. This case study was carried out on an 8 ½ years old male child with sneezing, runny nose and chronic symptoms including nasal itching and obstruction in particular. *Prathishyaya* was diagnosed after a proper clinical evaluation. *Bharangi Arka* in the form of nasal spray was opted as the sole drug in the treatment. Assessment of symptoms was done using Total Nasal Symptom score on the 7th, 14th, 21st and 28th days of the first month of the treatment and at the end of the following two months. Subsidence of all the symptoms was observed in the patient almost in the 4th week. This corroborates the stupendous action of *Bharangi Arka* nasal spray on *Prathishyaya* and it could usher in a way for further research to be carried out on the potency of nasal sprays in Ayurveda.

Keywords: *Arka kalpana*, *Bharangi*, Chronic allergic rhinitis, Nasal spray, *Prathishyaya*.

Introduction

Prathishyaya (Allergic rhinitis) is a common, recurring disease frequently observed in school children (1). Upon analysis, the *lakshanas* (symptoms) of *prathishyaya* explained in Ayurvedic classics seem to be the very picture of allergic rhinitis. In India, a total of 26% of population suffers from AR and in 80% of cases it develops by the age of 20 years (2). The prevalence of Allergic rhinitis in children has been reported to be as high as 40%, subsequently decreasing with age (3).

Sneezing, nasal discharge, nasal congestion, anterior rhinorrhea, itching in eyes and nose etc. are the prime symptoms of allergic rhinitis (4). On the other hand, *Kshavathu* (sneezing), *aanadha nasa* (nasal obstruction), *nasa srava* (nasal discharge), *talv osth shosha* (dryness of throat, palate and lips), *shankha nistoda* (pain at temporal region), *swaropaghata* (hoarseness of voice), *shiro gauravata* (heaviness of head), *gala*, *ostha*, *talv*, *nasa* and *netra kandu* (itching of throat, lips, palate, nose and eyes) are the typifying

features of *Prathishyaya* as per Classical Ayurveda texts (5).

Management of *Prathishyaya* before the advent of its complications including *kasa* (Cough), *swasa* (Respiratory disorders) and *rajayakshma* (Tuberculosis) could bear a hand in restoring child health. *Katu-tikta rasa*, *ushna veerya* and *katu vipaka* are the key contributors to the treatment of *Prathishyaya*. *Bharangi* (*Rothea serrata* (L.) Steane & Mabb) is the most befitting drug considering its properties and the *laghu* and *sukshma guna* of *Arka* (Aqueous extract) (6) preparation helps to enhance the therapeutic value. The phenolic compounds in *Bharangi Arka* have also been found to have anti-inflammatory properties (7). And thus *Bharangi Arka* could serve a melded effect on curing allergic rhinitis or *Prathishyaya*.

In our classics, *prathishyaya* is mentioned under *nasagata rogas* (8). *Nasya karma* is an important part of *Panchkarma* and one of the foremost treatment procedures in the group of *urdhwajathrugaatha roga chikitsa*. Alteration of *nasya* into the form of nasal spray is most preferable while dealing with children and so *Bharangi Arka* nasal spray was used in the study.

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Case report

An 8 ½ year old male child was brought to the *Kaumarabhrithya* Department by his parents with a long-standing history of sneezing, runny nose with watery discharge associated with nasal obstruction and nasal itching.

Case history

The child was born at full term through normal vaginal delivery with a birth weight of 3 kg. There was no history of maternal infection or use of any medications during pregnancy. The mother was 24 years old at the time of conception and she did not have hyperthyroidism or diabetes during the gestational period. About two years ago, the child started experiencing symptoms such as runny nose, itching throat and sneezing. The symptoms developed gradually with moderate intensity and usually occurred in the morning. He was taken to a physician and found temporary relief, but after 3 weeks of stopping of medication, the symptoms returned. The parents then took the child to a pediatrician who diagnosed seasonal Allergic Rhinitis and prescribed anti-histamines for the disease. However, the parents were concerned of the long term side effects of the medication and decided to seek an alternative treatment and turned to Ayurveda.

Clinical assessment

During the assessment, the child appeared to be conscious and cooperative. His vitals signs were stable and he had a good appetite. His micturition was normal and in line with his water intake. He had a moderate built with a normal BMI. Examination of the upper respiratory tract showed bilateral nasal discharge of a watery consistency. Anterior rhinoscopy revealed a central septum, swollen turbinates, reddish coloration of the mucosal layer and discharges. The child's eyes were watery with occasional itching. Examination of the throat revealed no structural abnormalities or signs of infection. There was no ear discharge or earache. Assessment of the symptoms pointed to the diagnosis of *prathishyaya* in accordance with Ayurveda. The patient was of *pitta-kaphaja prakrithi*, the *dooshya* was *kapha* and the *srothas* (Channel) affected was *pranavahasrothas*.

Management

Since *prathishyaya* is one among the *nasagatha rogas* and the eminence of *nasya karma* in the disease is indisputable, *Nasya* in a modified form with drug *Bharangi Arka* was chosen. The drug was prepared and as the patient was a child, the medicine was given as a nasal spray for ease of administration.

Subjective parameters

S. No	Criteria	Before Treatment (27/11/23)	During treatment				Follow up	
			On 7 th day (04/12/2023)	On 14 th day (11/12/23)	On 21 st day (18/12/23)	On 28 th day (25/12/23)	2 nd month (24/01/24)	3 rd month (23/02/24)
1	Rhinorrhoea	3	3	2	1	0	0	0
2	Nasal itching	3	2	1	1	0	0	0
3	Nasal obstruction	3	2	2	1	0	0	0
4	Sneezing	3	3	2	1	0	0	0

Responses: 0 – No symptom; 1 – Awareness but not troubled (Mild); 2 – Troublesome, but not interfering with normal daily activities or sleep (Moderate); 3- Interfering with normal daily activities or sleep (Severe)

Materials and Methods

Collection of drug

Dried roots of *Bharangi* were collected from pharmacy and cleaned thoroughly.

Preparation and storage

50 grams of coarsely powdered *Bharangi* roots were mixed with 10 times water (500 ml) and left to soak overnight. The following day, the mixture was transferred to a distillation apparatus and heated to produce 300 ml of condensed vapours (*Bharangi Arka*). The *Arka* was collected and stored in 15ml spray bottles yielding about 100 sprays per bottle approximately. The remaining bottles were preserved for subsequent research purposes.

Route of administration

Nasal route

Dosage and time

One spray in each nostril both in the morning and evening

Treatment period

28 days

Methodology

The changes in symptoms were assessed during the treatment period and two follow-up visits using TNSS (Total Nasal Symptom Score) (Table 1), along with objective parameters including TLC, DC, ESR, AEC and body temperature were also recorded (Table 2).

Observation and Results

The subjective and objective parameters and their assessment during the treatment and two follow ups are listed below. The patient demonstrated complete recovery from the condition.

The following observations and results corroborate to the effect of *Bharangi Arka* on *Prathishyaya* mentioned in *Arka Prakasha* of Ravana.

Table 2: Objective parameters

S. No	Criteria	Before treatment (27/11/23)	During treatment				Follow up	
			7 th day (04/12/2023)	14 th day (11/12/23)	21 st day (18/12/23)	28 th day (25/12/23)	2 nd month (24/01/24)	3 rd month (23/02/24)
1	TLC	7800 cells	6800 cells	6800 cells	6800 cells	6800 cells	6800 cells	6800 cells
2	DC	56%	56%	56%	56%	56%	56%	56%
3	ESR	8mm/hr	8mm/hr	5mm/hr	5mm/hr	5mm/hr	5mm/hr	5mm/hr
4	AEC	540/cell	530/cell	510/cell	410/cell	410/cell	410/cell	410/cell
5	Body temperature	98.6°F	98.6°F	98.6°F	98.6°F	98.6°F	98.6°F	98.6°F

Discussion

The detrimental effect of *Prathishyaya* or Chronic Allergic Rhinitis on children is often conspicuously visible and requires treatment before the arrival of complications. It is one among the *urdhwajathrugata rogas* and has been discussed by many *acharyas*. *Susrutha* has dedicated a separate chapter to explain the disease. The primary treatment of *Prathishyaya* should focus on clearing the *srotas* or *srotovishodhana* in short. *Katu-tikta rasa*, *ushna veerya*, and *Katu vipaka* coupled with *Laghu Theekshna gunas* are the basic requisites essential for the cleansing of channels (9). Since *Bharangi* fulfills most of the prior mentioned qualities (10), it is the most felicitous drug to treat the disease.

Arka kalpana explained in the *Arka Prakasha* has been found to have high potency and easy absorption by the body, delivering a rapid response (11). The conversion of *Bharangi* into the form of *Arka* can hence expand the action of the drug.

Icosahydronic acid (IHPA), a saponin isolated from the roots of *Bharangi* (*Clerodendrum Serratum*) has shown remarkable protection against mast cell degranulation at a specific dose (12).

The nasal cavity is an advantageous route for drug administration due to its porous epithelium, large absorption area, rich subcutaneous blood vessels and low enzyme activity. It ensures rapid drug absorption and fast onset of action, with high drug permeability and avoidance of hepatic first-pass effect. It is not only suitable for local therapy in nasal diseases but also serves a novel route for systemic drug delivery (13). By using nasal sprays, the liquid formulations can be dispersed fully and evenly at the orifice of the device, enlarging the dispersed area in the nasal cavity and thus avoiding the post-nasal dripping and anterior leakage of the nasal droplets (14). *Nasya* is elucidated as a salient treatment for *urdwajathuvikaras* (15) and its modification in the form of nasal spray after contemplation provide promising effects on the children due to its easy and hassle-free administration. Considering all the factors, *Bharangi Arka* nasal spray could offer an excellent result in curing *Prathishyaya* and hence it was opted for the study.

The changes observed during the study give more credibility to the efficacy of *Bharangi Arka*. At the beginning of the treatment, the patient had severe symptoms of rhinorrhea, nasal obstruction, nasal itching and sneezing. By the end of first week of treatment, nasal itching and nasal obstruction became less severe,

however rhinorrhea and sneezing persisted. During the second week, rhinorrhea and sneezing became less severe while nasal itching was mildly present but nasal obstruction remained the same. At the end of the third week, all the four symptoms of TNSS became mild and by the end of 4th week, all the symptoms subsided completely. The reviews in the following two months showed that the symptoms did not reappear nor the patient had any discomfort. Also the initial TLC, DC, ESR, AEC values decreased by the end of the treatment.

In a study examining *Bharangi* roots utilizing the Granuloma pouch method in rats, it was found that a high dose of root elicited a promising anti-inflammatory action while assessments using milk induced Leucocytosis in mice and Bronchial Hyper-activity in Guinea Pigs sensitized with egg albumin indicated anti allergic activity (16).

The therapeutic applications of *Bharangi Arka* extend to the treatment of *Shwasa*, which is closely associated with *Prathishyaya*. A comparative study examining the effect of *Bharangi Arka* and Salbutamole nebulization in *Tamaka shwasa* concluded that *Bharangi Arka* nebulization demonstrates superior efficacy in managing acute *Tamaka shwasa* compared to Salbutamole.(17)

The collection of *Bharangi* and preparation of *Arka* is cost-effective and facile. Even though the single drug usage and increased shelf life are the bright side of the *Bharangi Arka* nasal sprays, it could have side effects like all the other drugs.

The utilization of nasal spray in Ayurveda is constrained due to the limited number of conducted studies. Further research is necessary to uphold and endorse its usage. Since this study is carried out in a limited population, the potential side effects remain unclear. Application of the drug on a larger group is necessary to determine and discover more advantageous as well as disadvantageous impacts of the drug.

Conclusion

In this particular case study, a child diagnosed with *Prathishyaya* was treated with *Bharangi Arka* nasal spray for 4 weeks. After closely monitoring the changes in the intensity of symptoms, it was observed that there was complete relief at the end of the scheduled time of administration of medication. Furthermore, during the two follow-up sessions, the patient did not exhibit any reappearance of the symptoms. Based on these findings, it can be concluded

that *Bharangi Arka* nasal spray is an effective drug for *Prathishyaya* or Chronic Allergic Rhinitis in children. This single study can succor a running start to carry out more advanced studies on the potency of the drug using appropriate sample sizes. Altogether, this case gives credence to the conclusion that *Bharangi Arka* nasal spray has a prodigious effect on curing *Prathishyaya*.

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