

Review Article

Effect of different *Avaleha* in the management of *Tamaka Shwasa* (Bronchial Asthma)Ankit Gupta¹, P. K. Prajapati²

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Abstract

Avaleha, which are generally elegant preparations, can be used for both preventive and curative purposes. Many research works have been carried out on different *Avalehas*. A number of studies with different *Avalehas* and their respective clinical efficacy in *Tamaka Shwasa* (Bronchial Asthma) have been carried-out at Department of *Rasashastra* and *Bhaishajya Kalpana*, IPGT & RA, Jamnagar. A review has been carried out of such works to know the better one. In the work, it has been found that highly significant ($P < 0.001$) results on *Shwasakastata* were found in all the groups, except in the *Kamsa Haritaki Avaleha* (B) group which was insignificant ($P < 0.02$).

Key words: *Avaleha*, *Brimhana*, *Shwasa*

Introduction

Avaleha is the semi-solid dosage^[1] form, having long shelf-life^[2] in comparison to primary dosage forms, and can be administered to all the three age groups, i.e. *Bala* (children), *Yuva* (young) and *Vridha* (old).^[3] The basic material required for this dosage form includes *Drava Dravya* (liquid substance), *Madhura Dravya* (sweet substance), *Prakshepa Dravya* (condiments), and *Kalka Dravya* (paste of drugs). Diseases like *Gulma*,^[4] *Kasa*,^[5] *Shwasa*,^[6] *Pandu*,^[7] *Shotha*,^[8] *Arsha*,^[9] and *Raktapitta*,^[10] have been treated with different *Avalehas*. Besides these, this dosage form can also be used as *Rasayana*.^[11] However, a large number of *Avaleha*^[12-15] have been described for the treatment of *Shwasa Roga* as these have *Brimhana* property which is very much needed while dealing with this disease.^[16] According to *Acharya Sushruta*, when natural movement of *Prana Vyau* is hampered and it is associated with *Kapha*, then it leads to the origin of *Shwasa Roga* in which the upward movement of *Vata* is enhanced.^[17] This condition can be correlated with asthma which is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning. These episodes are usually associated with widespread, but variable, airflow obstruction within the lung that is often

reversible either spontaneously or with treatment of the total global disease burden. *Asthma*, being a problem worldwide, has an estimated 300 million affected individuals and causing 2,50,000 deaths annually worldwide.^[18]

More than 100 research works have been reported on several types of *Avaleha* at different institutes,^[19] of which seven studies on *Avaleha* and their effect on the *Shwasa Roga* have been carried out at IPGT and RA, Jamnagar. In this review, the works carried-out in the Department of *Rasa Shastra* and *Bhaishajya Kalpana*, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar have been considered. These include Kumar *et al.*,^[20] Pandya *et al.*,^[21] Jarasania *et al.*,^[22] Gandhi Piyush *et al.*,^[23] Gupta Ankit *et al.*,^[24] and Jarasania *et al.*^[25]

Materials and Methods

Preparation of test drugs

All the drugs were prepared by following the textual references^[26-29] with some modifications. Kumar *et al.*^[20] used *Dashamula Kwatha* from root and bark of the drugs to prepare *Kamsa Haritaki* (B) and *Kamsa Haritaki* (R). Jarasania *et al.*^[25] prepared *Kwatha* by two different methods: The first method was by following the original reference, whereas the second one was based on the method given by Iatro-chemistry.^[30] With these, *Kwatha Bharangiguda Avaleha* I and *Bharangiguda Avaleha* II were prepared, respectively. *Vasa Avaleha* (S) and *Vasa Avaleha* (K) were prepared by taking *Vasa Swarasa* and *Vasa Kwatha*, respectively by Gandhi Piyush *et al.*^[23] and Gupta Ankit *et al.*^[24]

Selection of patients

Out-patients and In-patients of Department of *Rasa Shastra*

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and *Bhaishajya Kalpana* Department, IPGT and RA Hospital, fulfilling the criteria of diagnosis of *Tamaka Shwasa*, were selected and registered irrespective of age, sex, and religion.

Criteria for diagnosis

Patients having signs and symptoms of *Tamaka Shwasa*, as described in the Ayurvedic classics, namely, *Shwasakastata*, *Kasa*, *Pinasa*, *Kanthodhwamsa*, *Lalatesweda*, *Aasinolabhetasukham*, were selected in all the studies. Detailed history was taken and physical examination was done on the basis of a special proforma prepared by scholars, incorporating all signs and symptoms of the disease.

Investigations

Routine hematological, especially white blood cell (WBC) count, erythrocyte sedimentation rate (ESR), absolute eosinophil count (AEC) and urine examination was carried out in all the patients to assess the condition of disease and to exclude any other pathology. Biochemical investigations like blood sugar (F) were carried out to exclude underlying pathology, if any.

Diet and restriction

Patients were advised to avoid the aggravating factors mentioned in classical literature of *Ayurveda*.

Posology

Both samples of *Kamsa Haritaki Avaleha* were given at a dose of 15 g/day, whereas *Bharangiguda Avaleha* (I and II) was given at a dose of 12 g/day and *Kantakari Avaleha*, *Vasa Avaleha* (S) and *Vasa Avaleha* (K) were administered at a dose of 10 g/day. All the drugs were given for 4 weeks in two divided doses with *Anupana* of lukewarm water.

Criteria for the assessment

Efficacy of the trial drugs was analyzed in terms of relief produced in cardinal signs and symptoms before and after treatment. Effects of trial drugs were also analyzed on certain parameters like WBC count, AEC, and ESR, before and after treatment.

Results

Highly significant ($P < 0.001$) results on *Shwasakastata* were obtained with all the test drugs, except *Kamsa Haritaki* (B) which was insignificant ($P < 0.02$) [Table 1]. All the test drugs showed highly significant ($P < 0.001$) results on *Kasa*, except *Kamsa Haritaki* (B) and *Bharangiguda Avaleha* II which are insignificant ($P < 0.02$ and $P > 0.05$, respectively) [Table 2]. Highly significant results ($P < 0.001$) on *Peenasa* were obtained in *Kantakari Avaleha* and *Bharangiguda Avaleha* II, whereas in *Vasa Avaleha* (S and K), *Kamsa Haritaki* (R) and *Bharangiguda Avaleha* I showed significant results ($P < 0.01$) [Table 3]. *Bharangiguda Avaleha* I and II as well as *Vasa Avaleha* (K) showed highly significant ($P < 0.001$ and $P < 0.01$, respectively) results on *Kanthodhwamsa* and significant ($P < 0.05$) results were shown by *Kantakari Avaleha* as well as *Vasa Avaleha* (S) [Table 4]. All drugs showed highly significant results ($P < 0.001$) on the symptoms *Aasinolabhet Sukham* and *Ronchi*, except *Bharangiguda Avaleha* II which was only significant ($P < 0.05$) [Tables 5 and 6]. Highly significant results ($P < 0.001$) were

Table 1: Effect of drugs on *Shwasakastata*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kamsaharitaki</i> (B)	06	50.00 \pm 9.13	30.00 \pm 5.00	<0.02
<i>Kamsaharitaki</i> (R)	19	57.89 \pm 4.70	22.36 \pm 4.64	<0.001
<i>Kantakari Avaleha</i>	14	3.00	1.00	<0.001
<i>Bharangiguda Avaleha</i> I	33	2.90 \pm 0.05	1.09 \pm 0.10	<0.001
<i>Bharangiguda Avaleha</i> II	33	2.75 \pm 0.07	1.45 \pm 0.09	<0.01
<i>Vasa Avaleha</i> (S)	11	2.09 \pm 0.31	0.54 \pm 0.21	<0.001
<i>Vasa Avaleha</i> (K)	17	2.47 \pm 0.28	0.88 \pm 0.18	<0.001

B - Bark, R - Root, S - Swarasa, K - Kwatha

Table 2: Effect of drugs on *Kasa*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kamsaharitaki</i> (B)	06	54.17 \pm 11.93	29.16 \pm 7.68	<0.02
<i>Kamsaharitaki</i> (R)	20	46.25 \pm 4.54	16.25 \pm 4.16	<0.001
<i>Kantakari Avaleha</i>	14	2.60	0.60	<0.001
<i>Bharangiguda Avaleha</i> I	28	2.43 \pm 0.12	0.61 \pm 0.12	<0.01
<i>Bharangiguda Avaleha</i> II	30	2.37 \pm 0.13	1.10 \pm 0.14	>0.05
<i>Vasa Avaleha</i> (S)	10	1.3 \pm 0.15	0.5 \pm 0.17	<0.001
<i>Vasa Avaleha</i> (K)	13	1.15 \pm 0.10	0.53 \pm 0.18	<0.001

Table 3: Effect of drugs on *Peenasa*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kamsaharitaki</i> (B)	03	50.00 \pm 14.43	33.33 \pm 8.33	-
<i>Kamsaharitaki</i> (R)	12	35.41 \pm 4.82	16.67 \pm 4.7	<0.02
<i>Kantakari Avaleha</i>	14	1.62	0.50	<0.001
<i>Bharangiguda Avaleha</i> I	30	2.27 \pm 0.13	0.73 \pm 0.12	<0.001
<i>Bharangiguda Avaleha</i> II	27	2.18 \pm 0.15	1.07 \pm 0.17	<0.05
<i>Vasa Avaleha</i> (S)	05	2 \pm 0.32	1.8 \pm 0.3	<0.01
<i>Vasa Avaleha</i> (K)	10	1.28 \pm 0.14	0.5 \pm 0.5	<0.01

obtained on *Lalatesweda* in *Kantakari Avaleha* treated group, whereas it was significant ($P < 0.05$) in *Bharangiguda Avaleha* I, *Vasa Avaleha* (S) and *Vasa Avaleha* (K) treated groups [Table 7].

Discussion

Acharya Kashyapa has given importance to this *Kalpana* and has described a separate chapter, namely, *Leha Adhyaya* in *Sutra Sthana*.^[31] Most of the *Avaleha* contains *Madhura Dravya*, *Ghrta* and *Prakshepa Dravya* as base ingredients. Here, the use of *Madhura Dravya* is of great importance because it reduces the *Tikta*, *Katu*, *Kashaya* taste of drug, ultimately making it more palatable, and it also nourishes all *Dhatus* along with *Oja*.^[32] *Ghrta* exhibits the property to pacify *Vata* as well as *Pitta* and also has the properties like *Agnidipana*, *Balakara*,

Table 4: Effect of drugs on *Kanthoddhwansa*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kantakari Avaleha</i>	14	2.00	0.75	<0.05
<i>Bharangiguda Avaleha I</i>	19	1.74 \pm 0.15	0.37 \pm 0.14	<0.001
<i>Bharangiguda Avaleha II</i>	17	1.58 \pm 0.15	0.70 \pm 0.17	<0.01
<i>Vasa Avaleha (S)</i>	05	1.6 \pm 0.25	0.80 \pm 0.20	<0.05
<i>Vasa Avaleha (K)</i>	07	1.43 \pm 0.20	0.85 \pm 0.34	<0.01

Table 5: Effect on *Aasinolabhete Sukham*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kamsaharitaki (B)</i>	07	57.14 \pm 7.14	25.00 \pm 5.45	<0.01
<i>Kamsaharitaki (R)</i>	23	54.34 \pm 3.73	23.91 \pm 4.3	<0.001
<i>Bharangiguda Avaleha I</i>	32	2.12 \pm 0.12	0.84 \pm 0.09	<0.001
<i>Bharangiguda Avaleha II</i>	30	2.43 \pm 0.12	1.53 \pm 0.14	<0.05
<i>Vasa Avaleha (S)</i>	11	1.64 \pm 0.20	0.54 \pm 0.21	<0.001
<i>Vasa Avaleha (K)</i>	11	1.54 \pm 0.2	0.54 \pm 0.20	<0.001

Table 6: Effect of drugs on *Ronchi*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kamsaharitaki (B)</i>	02	37.50 \pm 12.50	12.50 \pm 12.50	-
<i>Kamsaharitaki (R)</i>	09	30.55 \pm 3.67	5.55 \pm 3.67	<0.001
<i>Kantakari Avaleha</i>	14	2.42	0.71	<0.001
<i>Bharangiguda Avaleha I</i>	29	2.69 \pm 0.11	1.00 \pm 0.13	<0.001
<i>Bharangiguda Avaleha II</i>	26	2.61 \pm 0.11	1.38 \pm 0.16	<0.05
<i>Vasa Avaleha (S)</i>	11	1.64 \pm 0.21	0.64 \pm 0.21	<0.001
<i>Vasa Avaleha (K)</i>	13	1.31 \pm 0.13	0.53 \pm 0.14	<0.001

Table 7: Effect on *Lalatesweda*

Groups	n	Mean \pm SEM		P
		BT	AT	
<i>Kantakari Avaleha</i>	14	1.62	0.50	<0.001
<i>Bharangiguda Avaleha I</i>	18	1.72 \pm 0.18	0.50 \pm 0.17	<0.05
<i>Bharangiguda Avaleha II</i>	31	1.77 \pm 0.12	1.09 \pm 0.12	>0.05
<i>Vasa Avaleha (S)</i>	05	1.80 \pm 0.38	0.60 \pm 0.24	<0.05
<i>Vasa Avaleha (K)</i>	06	1.33 \pm 0.21	0.50 \pm 0.22	<0.05

Vrishya,^[33] etc. *Prakshepa Dravyas* serve specific functions, e.g. *Pippali* (*Piper longum*) acts as a bioavailability enhancer^[34] and is antibacterial.^[35] They also act as flavoring agents because most of the *Prakshepa Dravyas* have aroma, which improves the acceptability of a product. However, the quantity of *Prakshepa Dravyas* should be just sufficient to suggest the desired flavor and should not leave an intense taste in mouth. Regarding *Avaleha*, two more points are to be kept in consideration. These are mode of administration, i.e. licking, and high percentage of

sugar in the medicament. Both these factors facilitate the oral absorption. Due to its mode of administration, i.e. licking, it produces soothing effect in throat, relieving local irritation.

Although there are some *Samskaras* like *Toyagni sannikarsha*, *Manthana*, *Kala*, and *Bhajana* in the preparation of *Avaleha*, the quality of any dosage form depends upon the raw material taken for the preparation^[36] as *Kamsa Haritaki Avaleha* is prepared with the *Kwatha* of *Dashmula* drugs which exhibit *Shwasahar* property,^[37] whereas *Kantakari*,^[38] *Bharangi*^[39] and *Vasa*^[40] also have the quality to conquer the disease *Shwasa*. So, before starting the treatment, a physician may select one of the drugs depending upon the *Rogi* and *Roga Prakriti*.^[41] In all the studies, except the one by Pandya *et al.*,^[21] comparison has been done and all the scholars have prepared their respective *Avaleha* by taking two different liquid media,^[20,24,25] where interesting results were found, and the *Avaleha* which was prepared by following classical indication (i.e. *Dashmula Kwatha* by taking root bark of drugs and *Bharangiguda Avaleha I* by textual reference) have shown good results. *Vasa Avaleha*, either prepared from *Swarasa* or *Kwatha*, also proved good in clinical trial. The other probable reason for the interesting results may be due to the “*Brimhana*” (Nutrient and Energy supplementing) properties of the trial drugs, which is very essential in the treatment of *Shwasa Roga*.^[42]

Probable mode of action

The genesis of *Shwasa* first involves only vitiation of *Vata Dosha* all over the body. This vitiated *Vata* which is in *Urahasthana* in turn creates *Rukshta*, *Sankocha* and *Kharata* in *Pranavaha Srotas*. Vitiated *Vata* affects the normal *Kapha* in *Urahasthana*, which results in *Vilomata* of *Pranavayu* through obstruction to its natural *Gati* by *Kapha*. Sometimes, *Kapha* gets vitiated independently or through *Rasadhatwagnimandya* its *Mala*, i.e. *Kapha* gets located in *Urahsthana* and causes obstruction to normal motion of *Vayu* which ends up with *Vilomata* of *Vayu*. In the third type, both *Vata* and *Kapha* get vitiated independently along with the production of *Amavisha*. This contributes to the manifestation of *Shwasa*. Almost all the classics have used *Dashamula* in treating the disease *Shwasa*, and the chief therapeutic indication of *Bharangi* is *Shwasa* and *Kasa*. Acharya Vagbhatta proclaims it to be *Agrya Aushadhi* for the disease *Shwasa*. *Bharangi* having *Katu Tikta Rasa*, *Ushna Virya*, *Katu Vipaka* and *Kapha-Vataghna* properties and *Dashamula* with *Ushna Virya* and *Katu Vipaka* seem to quite naturally antagonize the *Shwasa Roga*, which is *Kapha-Vata Pradhana* disease. *Vasa Avaleha* has predominately *Madhura Rasa*, along with *Tikta*, *Katu*, *Kashaya Rasa*. *Sheet Veerya* and *Katu Vipaka* contribute to the pharmacodynamics of *Vasa Avaleha*. Also, *Guda* (Jaggery) has *Laghu*, *Pathya*, *Sara* and *Hridya* properties which are useful to overcome the *Rukshata* of all these drugs. It has *Madhura Vipaka* which shows *Srishta Vita Mutra* action, i.e. *Vatanulomana* action. *Guda* also provides nourishment to all *Dhatus* as it has *Balya* property which is necessary while dealing with this disease.

Conclusion

To conclude, the formulations prepared by following textual references have shown good results on most of the symptoms of the disease. So, depending upon the availability of the raw drugs, *Rogi*, and *Roga Prakriti*, these can be used.

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हिन्दी सारांश

विभिन्न प्रकार के अवलेहों का श्वास रोग में प्रभाव

अंकित गुप्ता, पी. के. प्रजापति

अवलेह सामान्यतः विभिन्न प्रकार के रोगों एवं उनकी रोकथाम के लिये प्रयोग किये जाते हैं। इस कल्पना पर बहुत सारे अनुसंधान किये जा चुके हैं। प्रस्तुत अध्ययन में आई.पी.जी.टी. एण्ड आर.ए., जामनगर के रस शास्त्र विभाग में किये गये विभिन्न प्रकार के अवलेह एवं उनके श्वास पर प्रभाव की समीक्षा की गई है। इसमें यह पाया गया कि सभी अवलेहों का श्वास कष्टता पर अति महत्वपूर्ण प्रभाव है।