



Review Article

A REVIEW ON THE PROBABLE MODE OF ACTION OF AGNIKUMARA RASA (B.R JWARADHIKARA) - AN AYURVEDIC HERBAL FORMULATION WITH MULTIFACETED ACTION

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ABSTRACT

In Ayurveda, *Agnimandya* (reduced digestive power) is considered as a root cause for all diseases. *Agnikumara rasa (B.R Jwaradhikara)* is a well-known Ayurvedic formulation used by Ayurvedic practitioners that increases *Agni* (digestive fire) and is indicated in various diseases with specific *Anupana* (adjuvant). There are 6 constituents in this formulation and is indicated in the management of vitiation of *Kapha* and *Vata* humor. On analysing the properties of the ingredients, it was found that it is predominant of *Katu rasa* (pungent taste), *Thikta rasa* (bitter taste), *Laghu* (light), *Ruksha* (dry), *Tikshna* (sharp) properties, *Ushna virya* (hot potency), *Katu vipaka* (pungent taste after bio-transformation). These therapeutic properties are responsible for pharmacological actions of the formulation. This review paper is an attempt to analyse the mode of action of this formulation which gives a deep insight about the usage of the formulation with a better understanding, so that the physician can use the formulation according to his logic in conditions other than indicated.

INTRODUCTION

Rasasastra is a science that deals with the knowledge of metals, minerals and toxic herbal drugs that can be effectively converted into medicines through various pharmaceutical processes. In *Rasasastra*, there are four types of preparations of medicines available and these are *Kharaliya*, *Parpati*, *Pottali* and *Kupipakwa* preparations^[1]. In *Kharaliya*, formulations are prepared by grinding in mortar known as *Khalwa*.

Agnikumara rasa^[2] is one such *Kharaliya* formulation widely used among Ayurvedic practitioners. Though many references of this formulation containing herbo-mineral and herbal ingredients are available, the one selected in this study is a herbal formulation. Though variation is observed among these, there is resemblance in almost all the formulations in perspective of levigation.

According to Ayurveda, *Agni* (digestive fire) has an important role in the maintenance of physiological functions of the body. *Agnikumara rasa* is primarily used in the management of *Agnimandya-janya rogas* (diseases caused by reduced digestive fire). Modern scientific world always demand explanations and logic behind the mode of action of various Ayurvedic procedures. This is a humble effort to explain the mode of action of this formulation, which is highly effective to correct the digestive imbalances with predictive result.

There are a total of 3 references of *Agnikumara rasa* available in *Bhaishajya Ratnavali*. These are in *Jwaradhikara*, *Grahaniroga adhikara* and *Agnimandhya adhikara*. Among these, the one containing 50% of *Shodhita Vatsanabha* and 12.5% each of *Maricha*, *Mustha*, *Vacha*, *Kustha* with *Ardraka swarasa* as *Bhavana drava* (liquid used for levigation), is reviewed in this paper. The pill is rolled in 125mg (1 *Rathi*). This formulation has various indications of *Jwara* (fever), *Kaphaja jwara* (a type of fever), *Sannipatha jwara* (a type of fever), *Pinasa* (catarrh), *Prathishaya* (common cold), *Grahani* (sprue), *Athisara- ama* and *Pakva* (types of diarrhoea), *Kasa-svasa* (cough-dyspnoea) along with various *Anupana* (adjuvant).

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MATERIALS AND METHODS

To study the properties and action of the formulation to explain its mode of action, it is necessary to study the therapeutic properties of the ingredients.

The *Rasa-panchaka* of the five ingredients along with *Bhavana dravya* is detailed in the Table 1.

Table1: *Rasa-panchaka* of the ingredients ^[3,4]

Drug Latin name Family	Rasa (taste)	Guna (property)	Veerya potency)	Vipaka (bio-transformed taste)	Karma (Action)
<i>Vacha</i> <i>Acorus calamus</i> Linn. Araceae	<i>Katu-Thikta</i> (pungent – bitter)	<i>Laghu-Tikshna</i> (light- sharp)	<i>Ushna</i> (hot)	<i>Katu</i> (pungent)	Alleviates <i>Kapha-vata</i> , <i>Dipana</i> (carminative), <i>Pachana</i> (digestive), <i>Jwaraghna</i> (relieves fever), relieves <i>Atisara</i> (diarrhoea), <i>Udarasula</i> (abdominal pain), <i>Adhmana</i> (bloating)
<i>Kushta</i> <i>Saussurea lappa</i> C.B. Clarke Asteraceae	<i>Katu-Thikta-Madhura</i> (pungent-bitter-sweet)	<i>Laghu-Ruksha-Tikshna</i> (light-dry-sharp)	<i>Ushna</i> (hot)	<i>Katu</i> (pungent)	Alleviates <i>Kapha-vata kasahara</i> (relieves cough), <i>Vishaghna</i> (removes toxins), <i>Sothahara</i> (anti-inflammatory)
<i>Maricha</i> (<i>Suska</i>), <i>Piper nigrum</i> Linn. Piperaceae	<i>Katu</i> (pungent)	<i>Laghu- Ruksha-Tikshna</i> (light-dry-sharp)	<i>Ushna</i> (hot)	<i>Katu</i> (pungent)	Alleviates <i>Kapha-vata, dipana</i> (carminative), <i>Swasa-Sulahara</i> (dyspnoea & pain), <i>Krimijith</i> (antimicrobial), <i>Chedana</i> (scraping)
<i>Shodhita Vatsanabha</i> <i>Aconitum ferox</i> Wall. Ranunculaceae	<i>Katu-Thikta-Kashaya</i> (pungent-bitter-astringent)	<i>Laghu-Ruksha-Tikshna, Vyavayi, Yogavahi, Ashukari, Sukshma</i> (light-dry-sharp-spreading, synergistic action, fast acting, fineness)	<i>Ushna</i> (hot)		Relieves <i>Tridosas, Dipana</i> (carminative), <i>Jwarahara</i> (relieves fever), <i>Vivida jwara vegajith</i> , <i>Seethe poorna dahantha jwara</i> (different types of fever), <i>Phuppusha Sothahara</i> (pneumonia), <i>Swasa-Kasa vidunana</i> (relieves cough and dyspnoea)
<i>Mushta</i> <i>Cyperus rotundus</i> Linn. Cyperaceae	<i>Katu-Thikta-Kashaya</i> (pungent-bitter-astringent)	<i>Laghu-Ruksha</i> (light and dry)	<i>Sitha</i> (cold)	<i>Katu</i> (Pungent)	Relieves <i>Pithakapha, Dipana</i> (carminative), <i>Pachana</i> (digestive), <i>Grahi</i> (<i>Jwaraghna</i> (relieves fever), relieves <i>Atisara</i> (diarrhoea) & <i>Grahani</i> (sprue), <i>Jantujith</i> (antimicrobial),
<i>Ardraka</i> <i>Zingiber officinale</i> Roscoe Zingiberaceae	<i>Katu</i> (pungent)	<i>Guru- Ruksha-Tikshna</i> (heavy-dry-sharp)	<i>Ushna</i> (hot)	<i>Madhura</i> (sweet)	Relieves <i>Kaphavata, Dipana</i> (carminative), <i>Pachana</i> (digestive) <i>Bhedana</i> (loosens/ breaks) <i>Jihwa-kanta vishodana</i> (cleans the tongue and throat), <i>Anaha-sulahara</i> (bloating and analgesic)

RESULTS

Analysis of *Rasa-panchaka*

Of the 6 ingredients of *Agnikumara rasa*, all are having *Katu rasa* (pungent taste), 4 having *Thikta rasa* (bitter taste), 2 having *Kashaya rasa* (astringent taste), 1 *Madhura rasa* (sweet taste). Five are *Laghu* (light), *Ruksha* (dry) and *Tikshna* (sharp). One with *Guru* (heavy). The major ingredient possess *Vyavayi* (spreading), *Vikasi* (opening channels), *Ashukari* (quick action), *Yogavahi* (synergistic action) and *Sukshma* (minute) properties. Five with *Ushna virya* (hot potency) and one with *Sitha virya* (cold potency). Five are having *Katu vipaka* (bio-transformed taste) and one with *Madhura vipaka* (bio-transformed taste). Four are *Kapha-Vatahara* (alleviates *Kapha-vata* humor), one is *Pitha-Kaphahara* (alleviates *Pitha-kapha* humor) and one is *Tridosa hara* (alleviates *tridosha*).

On Analysis, the *Rasa-panchaka* of the formulation could be summarised as follows

Rasa – *Katu-Thikta –Kashaya*

Guna – *Laghu, Ruksha & Tikshna*

Virya – *Ushna*

Vipaka- *Katu*

Doshaghna – *Kapha-Vatahara*

Dose – 2 Ratti (250 mg)

Dosage – *Vati* (pills)

Time of Administration: It depends on the condition in which medicine is prescribed, as it is indicated in various diseases.

Anupana: Disease-specific *Anupana* mentioned. It is tabulated below

Table 2: Disease-specific *Anupana* of *Agnikumara rasa* [2]

Diseases	<i>Anupana</i> used
<i>Amajwara</i>	<i>Sunti / Madhupishti</i>
<i>Kapha jwara</i>	<i>Ardraka rasa / Nirgundi rasa</i>
<i>Pinasa, Prathishaya</i>	<i>Ardraka rasa</i>
<i>Agnimandya</i>	<i>Lavanga</i>
<i>Shopha</i>	<i>Dasamoola</i>
<i>Grahani</i>	<i>Sunti</i>
<i>Atisara</i>	<i>Mustha</i>
<i>Sama –atisara</i>	<i>Dhanya - Sunti</i>
<i>Pakva- atisara</i>	<i>Kudaja + Madhu</i>
<i>Sannipatha jwara</i>	<i>Pippali + Ardraka</i>
<i>Kasa</i>	<i>Kantakari rasa</i>
<i>Swasa</i>	<i>Tila thaila + Guda</i>

Sahapana (media administered along with medicine): Along with different formulations specific to the disease condition can be used like for promoting *Agni* along with *Gandharvahastadi kashaya*, *Abhayarishta*, for relieving *Jwara* with *Amritharishta*, *Amruthotharam kasaya*, for curing *Shopha* with *Punarnavadi Kashaya*, etc as per the logic of the physician.

Contraindications: As the formulation contains a major quantity of *Shodhita Vatsanabha*, the formulation could be contraindicated in those who are contraindicated with *Vatsanabha* intake. Persons with severe hyperacidity or gastric ulcers and affected with kidney diseases are contraindicated^[5].

Therapeutic indications of *Agnikumara rasa*

Ama-jwara, Kapha-jwara, Sannipatha-jwara, Pinasa-Prathisyaya, Kasa-Swasa, Agnimanthya, Grahani - Atisara and Shopha.

DISCUSSION

Indication in the management of *Kaphaja-Amaja* and *Sannipatha Jwara* (caused due to vitiation of *Kapha, Ama* and *Tridosha*)

The *Yoga* (formulation) has ingredients with *Katu-Tiktha-Kashaya rasa* (pungent-bitter-astringent taste), *Laghu-Ruksha guna* (light-dry properties), *Ushna virya* (hot potency) and *Dipana-pachana* (carminative-digestive) property that helps to increase the *Agni* (digestive fire) and remove *Ama* (by product of impaired digestion), which is the root cause of all diseases including *Jwara* (fever). The major ingredient *Shoditha Vatsanabha* (purified *Aconitum ferox*) in addition to *Jwaraghna* (relieves fever) property, being a *Visha dravya*^[6] it possess *Vikasi* (opening channels), *Yogavahi* (catalysing action), *Ashukari* (quick in action), *Vyavayi* (spreading) and *Sukshma* (fineness) properties that may augment the *Jwarahara* property of other ingredients and remove the obstructions in

the channel. In *Amajwara* (a type of fever), *Shunti* (dried *Zingiber officinale*) and *Madhu* (honey) are the *Anupana* (adjuvant) mentioned, this may be because *Dipana –Pachana* property of *Shunti* that may increase the *Agni* and relieve *Ama* and *Madhu* having *Chedana karma* (scraping action) that may remove the obstruction in the channel. In *Kapha-jwara*, *Ardraka* (fresh *Zingiber officinale*) which is *Dipana-pachana* increase *Agni* and melt the *Kapha*; *Nirgundi swarasa* (juice of *Vitex nigundo* Linn.) that has *Sleshmahara karma* (alleviates *Kapha* humor) are used. *Pippali* (*Piper longum* Linn) is used in addition to *Ardraka swarasa* in *Sannipatha jwara* as it may act as a good catalyst for *Jwarahara karma*.

Modern pharmacology: Aconite used is known to lower fever and used in inflammatory conditions^[7]. *Piper nigrum* has immuno-modulatory activity, anti-pyretic action because of piperine constituent and is also a bioavailability enhancer^[8]. *Acorus calamus* possess antimicrobial activity^[9]. *Cyperus rotundus* has anti-pyretic activity^[10]. Gingerol, the chemical constituent of *Zingiber officinale* can reduce the risk of both bacterial and viral infections^{[11][12]}.

Probable mode of action in respiratory conditions
***Pinasa* (catarrh), *Prathisyaya* (common cold), *Kasa* (cough) and *Swasa* (dyspnoea)**

The majority of ingredients have *Katu rasa* (pungent taste), which increase appetite and improves digestion and brings about *Srotoshodhana* (cleanses the body channels). *Laghu* (light) and *Ruksha* (dry) properties of the drugs pacify *Kapha* vitiation. *Ushna virya* (hot potency), *Tikshna* (sharp) and *Sukshma* (penetrating) properties help to remove obstruction by *Kapha* humor and thus allow normal movement of *Apana vata* (a sub-classification of *Vata*). Most of the ingredients possess *Katu vipaka* (pungent biotransformation taste) that pacifies vitiated *Vata* and *Kapha* humor. In addition, as the formulation is *Agnivriithikara* (increases the digestive fire) and is having a major ingredient of *Vatsanabha* which is used to treat fever, cough and respiratory tract infections^[13-14], this could be suitable for respiratory conditions like *Pinasa*, *Prathisyaya*, *Swasa* and *Kasa*. The *Anupana* (adjuvant), *Ardraka swarasa* (juice of *Zingiber officinale*) being *Dipana* (carminative), *Vibandhagna* (removes the obstruction) and having *Ushna virya* (hot potency) relieves *Kapha* humor thereby cures *Pinasa* and *Prathisyaya*. *Kantakari swarasa* (Juice of *Solanum xanthocarpum* Schard & Wendl) is *kasaghna* (relieves cough). In *Swasa* as per its treatment^[15], here all the ingredients are *Kaphavata hara* (alleviates *Kapha-Vata* humors) and *Ushna virya* (hot potency). The *Anupana*, *Tila thaila* (oil of *Sesamum indicum*) being *Tikshna* (sharp), *Vyavayi* (spreading), *Sukshma* (fineness) helps to spread the medicine at its site of action. Both *Guda*

(jaggery) and *Tila thaila* (sesamum oil) does not increase *Kapha* humor.

Modern pharmacology: Piperine of *Piper nigrum* has anti-asthmatic activity and is a immuno-modulator^[8]. *Mushta* tubers relieve cough and bronchitis. *Maricha* has anti-asthmatic action. *Vacha* used in bronchitis.

Probable mode of action in digestive disorders like
***Agnimandya* (reduced digestive fire), *Grahani* (sprue), *Atisara* (diarrhoea)**

In all the three conditions, namely *Agnimandya*, *Grahani* and *Atisara*, the root cause is destruction of digestive fire. As the name of the formulation suggests, this is a medicine that increases the *Agni* (digestive fire) and eradicates the diseases generated as a result of it. In addition, the ingredients possess *Dipana-pachana* (carminative-digestive) properties which increase the digestive fire and can destroy *Ama* (byproduct of impaired digestion).

Modern Pharmacology: *Piper nigrum* has digestive stimulant action as dietary Piperine enhances digestion by stimulating the pancreatic enzymes. Also, the Aqueous black pepper extract was found to have anti-diarrheal, anti-motility and anti-secretory activity in mice^[8]. *Acorus calamus* possess antidiarrheal activity^[9]. The rhizome of *Cyperus rotundus* possess anti-diarrhoeal activity.^[16]

Probable mode of action in *Shopha* (inflammatory condition)

All the ingredients having *Katu rasa* (pungent taste) which has a *Shophahara* (anti-inflammatory) property and also the *Laghu* (light), *Ruksha* (dry) predominant properties of the ingredients help to digest *Ama* (byproduct of impaired digestion) and reduce *Shopha* (inflammation). Also major of the ingredients are *Shophahara* (anti-inflammatory)

Modern Pharmacology: *Acorus calamus* and *Cyperus rotundus* have anti-inflammatory activity^{[9][10]}. Shogaol, the constituent of *Zingiber officinale* was found to down-regulate inflammatory iNOS and COX-2 gene expression^[17].

Agnikumara rasa is a herbal formulation mentioned in *Bhaishajya Ratnavali Jwaradhikara*. The formulation with *Katu-Thikta rasa* (pungent and astringent taste), *Laghu* (light), *Ruksha* (dry) *Tikshna* (sharp) properties, *Ushna virya* (hot potency), *Katu vipaka* (pungent biotransformation) and that alleviates *Kapha-Vata* humor help to increase the digestive fire, whose impairment is considered in Ayurveda as the root cause of all diseases. The ingredients with *Dipana-pachana* (carminative- digestive) property makes it suitable in digestive disorders including *Agnimandya* (decreased digestive power), *Grahani* (sprue) and to relieve *Shopha* (inflammation). The formulation with *Jwarahara* (relieves fever) drugs and with the major ingredient of *Vatsanabha* (*Aconitum ferox*) makes it

suitable for respiratory conditions like *Swasa* (dyspnoea) and *Kasa* (cough). *Suddha Vatsanabha* (purified *Aconitum ferox* Wall) when used as an ingredient in any of the compound formulations, it exhibits synergistic action (*Yogavahi*) and helps in effective cure of all the diseases in which the compound formulation is indicated^[18].

CONCLUSION

Thus, *Agnikumara rasa* (B.R Jwaradhikara) with various indications in digestive and respiratory conditions is considered as a formulation with multifaceted therapeutic action. Further studies are encouraged for the clinical validation of its therapeutic action.

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