



Review article

Role of *Jwaraghani gutika* in the management of *Jwara*

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ABSTRACT

In Ayurved, *Jwara* is not merely the concept of raised body temperature, as said in *Charaka Samhita*, 'Deha- Indriya- Manah- Santap' is the cardinal symptom of *Jwara*. This can be defined as the state where the body, mind as well as sense organs suffer from the high temperature. *Jwara* is considered as a king of all diseases because every person in this world comes with *Jwara* and depart with it. Acharya Charaka while illustrating diseases give first preference to *Jwara* both in *Nidansthana* and *Chikitsasthana*. It takes away the life of all living beings, causes a disturbance in the body, sense organs and minds and diminishes intellect, strength, completion, pleasure and enthusiasm. *Jwara Vyadhi* is discussed in details in all the *Ayurvedic Samhita Granthas*. *Rasa dravyas* are widely practiced in the treatment of *Jwara* due to its easy availability and high efficacy. There is a wide spectrum of *Jwarahara dravyas* mentioned in *Rasashastra* and *Jwaraghani gutika* is one of them. It is one of such herbo-mineral preparations which have been used from ancient time for the treatment of *Sarwa Jwara*. It is firstly illustrated by *Rasa Prakash Sudhakar* (12th century AD) in *Jwara Rogadikar*. Herein, this article reviews the role of *Jwaraghani gutika* used in *Jwarachikitsa* as per Ayurvedic classics.

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INTRODUCTION

In Ayurveda, there are three types of *Chikitsa* (treatment) i.e., *Asuri*, *Daiwi* and *Manushi*. *Rasaushadhi* comes under *Daiwichikitsa* (Mishra, 1987). *Rasaushadhis* are used as the quick saviour of ailments. The innate qualities of *Rasaushadhis* like quick action, lesser dose, tastelessness, prolonged shelf-life, better palatability made these drugs elevated for occupying a superior position in the field of therapy. It can even be administered in the treatment of *krucha saadhya vyadhi*.

The details of *Jwara* (fever) with its etiological factors, types, pathogenesis and treatment are mentioned in *Ayurvedic Samhitas*. According to the description of *Ayurvedic* classics, *Jwara* is *Rogaraat* means king among all the diseases. It manifests mainly due to *Agnimandya* (weakened digestive fire), the main *Dosha* involved is *Pitta* and main *Dushya* is *Rasadhatu*. Its *Pratyatma lakshana* (main complaint) is *Santapa* (raising temperature). The first treatment suggested for *Jwara* is *Langhana* (fasting) for the *Pachana* of *Amadosha*. *Jwara* can be taken as fever or pyrexia in modern parlance since it is also characterized by the rise in the body

temperature. According to modern parameters, it manifests mainly due to infections which cause prostaglandin synthesis through cyclooxygenase 1 and 2 pathways. The line of treatment is first to reduce elevated body temperature. In the modern system of medicine, antipyretic drugs are used to treat pyrexia. Nowadays, NSAIDs are the most frequently used antipyretics. These are effective but have many side effects. In view of these agents, people are looking for more safer and effective natural medicines.

Samprapti (pathology)

According to classics, due to improper indulgence in the food and activities causes some disturbances to occur in the *Doshas*. This aggravation may be of singular *Dosha*, twin *Doshas* or all of three *Doshas* depending upon causative factor and its severity. The vitiated *Doshas* mainly *Pitta* by its own etiological factors causes *Jatharagnimandya* which will lead to the production of *Ama* (undigested food toxin). This *Ama* replaces *Agni* from the *Amashaya* (stomach). This replaced *Agni* is added to *Rasadhatu*. Along with *Rasadhatu*, it

spreads throughout the body resulting in the obstruction of various *Srotasa* (body channels) and later on an elevation in body temperature.

Samprapti ghataka (factors involved in pathology)

According to Kasthuri (2006), the factors involved in the pathology of *Jwara* are as following.

1. *Dosha*: Pitta predominant Vata Kapha
2. *Dushya*: Rasadhātu
3. *Agni*: Jatharagni
4. *Adhistan*: Twak, Sarvashareera
5. *Srotas*: Rasavaha, Swedvaha, Annavaha
6. *Srotodushti*: Sanga (obstruction)
7. *Udbhava sthana*: Amashaya
8. *Rogamarga*: Abhyantara

Jwara Pradhana Lakshana (symptoms)

The symptoms of *Jwara* are obstruction of sweating, increased body temperature and mild body pain which occurs at the same time (Acharya, 2012). Besides, mental distress, indigestion, loss of appetite, heaviness in body parts, congestion in eyes, lethargy, lacrimation, oversleep, uneasiness and debility are the other symptoms of *Jwara*.

Table 2. *Jwaraghani gutika* herbal contents and their antipyretic activity

| Drug | Latin name (Family) | Action | Antipyretic activity | |
|-------------------------------------|--|--|--------------------------|--|
| | | | Ayurveda | Modern |
| <i>Elva</i> | <i>Aloe barbadensis</i> (Liliaceae) | <i>Bhedi, Pittanirhara, Rajapravartaka, Jwaranut</i> | <i>Jwarahara</i> | Leaf extract showed anti-inflammatory and analgesic effect (Haque et al., 2012) |
| <i>Akarkara</i> | <i>Anacyclus pyrethrum</i> (Asteraceae) | <i>Vatahara, Pittahara, Sukrala, Vajikara, Svedakara, Dipana, Balakaraka</i> | – | Root extract showed anti-pyretic activity (Priya et al., 2014) |
| <i>Haritaki</i> | <i>Terminalia chebula</i> (Combretaceae) | <i>Chaksusya, Dipana, Medhya, Rasayan, Anulomana, Sarvadosaprasmana, Yogwahi</i> | <i>Vishama Jwarghana</i> | Fruit extract showed analgesic and antipyretic activities (Lahon et al., 2012) |
| <i>Pippali</i> | <i>Piper longum</i> (Piperaceae) | <i>Dipana, Hridya, Tridosahara, Rasayan, Rechana</i> | <i>Jwarahara</i> | Piperine isolated from the plant showed analgesic and antipyretic activity (Sabina et al., 2013) |
| <i>Indravaruni fruit & root</i> | <i>Citrullus colocynthis</i> (Cucurbitaceae) | <i>Krimighna, Vamak, Visahara, Rechana, Slesmahara, Kaphahara, Pittahara</i> | <i>Jwarghana</i> | Fruit extract showed antipyretic and anti-inflammatory activity (Reddy et al., 2012) |

Source for mineral & herbal contents of drug: API (2001).

DISCUSSION AND CONCLUSION

In *Rasatantrasara* and *Sidhaprayogasangraha*, there are forty *Rasa yogas* mentioned for *Jwara rogaadhikar*, and *Jwaraghani gutika* is one of them. It is mentioned in many other texts such as *Rasa Prakash Sudhakar*, *Yogratnakar*, *Bhava Prakash nighantu*, *Brihat Rasa Raj Sundar*, *Raskaamdhenu*,

Jwara Chikitsa (treatment)

The line of treatment in *Taruna Jwara* is *Pachana* (digestion) of *Avipakva Doshas* (Acharya, 2009). In addition, *Langhana* (fasting), *Swedan* (fomentation), *Kala* (time or passage of 8th day), *Yavagu* (medicated gruels) and *Tikta rasa* (drugs having a bitter taste) are the other important aspects for the line of treatment.

Drug profile

The complete profile of the drug (*Jwaraghani gutika*) for *Jwara* is given in Table 1 and 2. The mode of application of the drug is oral at the doses of 1 g twice a day (BD) with *Anupana* of *Guduchi Swaras* (*Tinospora cordifolia* juice).

Table 1. Mineral content and action of the drug

| Drug | Mineral | Action |
|-----------------------|---------|---|
| <i>Sudha Parad</i> | Mercury | <i>Yogwahi, Rasayan, Tridosaghana, Krimighana, Sarvarogajit</i> |
| <i>Sudha Gandhaka</i> | Sulphur | <i>Dipan, Pachan, Rasayan, Vishahar, Krimihar</i> |

Sarangdhar Samhita as well as in *Ayurvedic Formulary of India*. In *Jwaraghani gutika*, Acharya Sarangdhara mentioned seven drugs, where *Parad* (mercury) and *Gandhak* (sulphur) are two main *Ras dravyas* (Acharya, 2005).

The name *Rasashastra* itself signifies *Parad* which was used therapeutically from *Samhita Kala*. *Gandhak* increases the potency and decreases the

toxic effect of *Parad*, which signifies its importance in *Rasashastra*. The herbal ingredients of *Jwaraghani gutika* viz. *Elva*, *Pippali* and *Indravaruni* fruit and root known for their antipyretic activity as per classics and also proved by the researchers (Table 2).

Among all the ingredients of *Jwaraghani gutika*, *Pippali* and *Indravaruni* have antipyretic activity marked out in Ayurvedic classics which also has scientific evidence. Piperine, an active constituent of *Pippali* (*Piper longum*) has antipyretic activity produced by a significant reduction in rectal temperature that may be due to inhibitory effect in prostaglandin secretion.

Similarly, a significant antipyretic activity of *Indravaruni* fruit extract may be due to its flavonoids contents. As flavonoids have been known for their anti-inflammatory, antibacterial and antiviral activities by inhibiting cyclooxygenase enzymes (mediate the synthesis of PGE2) activities and thereby prevent the synthesis of PGE2 (ultimate mediator of febrile response) (Agarawal, 2011).

An ethanol extract of the roots of *Indravaruni* has potentially reduced the expression levels of pro-inflammatory cytokines viz. TNF- α , PGE2 & COX-2. As pyrexia is a part of inflammatory response so this mechanism of action of *Indravaruni* root extract also leads to antipyretic effect. Again, the flavonoids present in the fruit extract of *Haritaki* are responsible for their antipyretic activity. *Elva* has established *Jwaranut* action that was evident from the study done on different extracts of musabbar resulting in significant activity against all the pathogenic bacteria (Haque et al., 2012). The ethanol extract of *Akarkara* root has strong antipyretic and broad-spectrum antibacterial activity (Priya et al., 2014).

Parad (mercury) and *Gandhaka* (sulphur) itself have the antimicrobial property that may also assist the antipyretic activity of *Jwaraghani gutika*. So, all these ingredients are responsible for moulding *Jwaraghani gutika* into a potent antipyretic drug. *Anupana* is also mentioned for *Jwaraghani gutika*, which is *Guduchi swaras*. The role of *anupana* is to increase the bioavailability and to prevent the adverse effects of a drug. The studies have also proved the antipyretic activity of *Guduchi* (Ikram et al., 1987).

Acharya Charaka also mentioned that the juice of *Guduchi* (*Tinospora cordifolia*) is extremely useful in the treatment of irregular fever. The dose, *anupana* and *pathya-apathya* should be kept in mind while administering the *Rasa* to avoid complications.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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