

A Critical Review on Brihat Kasturi Bhairav Rasa with Special Reference in Management of Jwara-A Herbomineral Formulation

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ABSTRACT

Introduction: *Brihat Kasturi Bhairav Rasa* is a *Kharaliya Rasayana* mentioned in *Bhaishajya Ratnavali* in *Jwaradhikara*. It consists of *Kasturi (Jantavya dravya)* as main ingredient & 17 other ingredients & *Arka patra swarasa* as *bhavana dravya*. A critical analysis is made to explore this unique *Jwarahara Yoga* of classics to unfold the Antiviral, Antipyretic, Antioxidant and Immunomodulatory potential of phytochemicals in the formulation.

AIM: To critically Review the formulation *Brihat Kasturi Bhairav Rasa* and variants of *Kasturi Bhairav Rasa*.

MATERIALS & METHODS: References of *Brihat Kasturi Bhairav Rasa* were collected from various available classical texts, some articles from various journals were also reviewed in this attempt.

OBSERVATIONS & RESULTS: *Swalpa Kasturi Bhairav Rasa, Madhyama Kasturi bhairav Rasa & Brihat Kasturi Bhairav Rasa* three different formulations with *Kasturi* as main ingredient is mentioned in various classics & AFI accepted *Brihat Kasturi Bhairav rasa* with many *bhasmas* in it with unique indications.

CONCLUSION: The review will definitely give new insights on the synergistic actions of phytochemicals in formulations to revalidate the clinical evidences and will throw lime light on repurposing of the documented novel drugs and combinations in classics to offer unique preventive strategies and therapeutic solutions to the present pandemic and emerging viral infections.

KEYWORDS: *Kasturi Bhairav Rasa, Kasturi (Jantavya dravya), Jwarahara Yoga, Immunomodulatory*

INTRODUCTION

Ayurveda is mother of all healing science. *Rasashastra* or the Ayurvedic alchemy is an important branch of Ayurvedic Pharmacology. This branch deals with the use of metals and minerals, gemstones & their processing. The minerals & metals are very effective & potent for immunization, Rejuvenation & the elimination of diseases. *Rasashastra* is the special science, which deals with the metallic, mineral & poisonous drugs. These drugs are pharmaceutically processed and rendered fit for internal administration. *Rasoushadis* are known for smaller dosage. They are palatable, provides quick results & cures difficult disease conditions.¹

Kasturi Bhairav Rasa is a brilliant formulation told in *Bhaishajya Ratnavali* in *Jwaradhikara* consisting *Kasturi* as its main ingredient, it takes care of ailments from fever & UTI to diabetes. It is potent *Kharaliya Rasayana*, *Kasturi* is *Mrigamada* which is obtained from animal origin (*Jantavya Dravya*). Hence its availability is difficult & very expensive. There are many references available for *Kasturi Bhairava rasa* in the classics. The AFI accepted the *bhaishajya Ratnavali*'s reference "" & *Swalpa Kasturui Bhairava rasa*". *Brihat Kasturi Bhairav Rasa* is first mentioned in *Rasa Ratnakar*. This formulation is made up by 18 ingredients and one

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Bhavana dravya i. e., *Arka Patra swarasa* and numerous therapeutic value.

Jwara is originated out of “*rudrakopa*” according to *Ayurveda* mythological history. *Jwara* is not just raised body temperature, but as per *Charaka*, ‘*Deha-indriya -Manah Santap*’ are the cardinal symptoms of *Jwara*. Hence it is most important among all other diseases. It diminishes the intelligence, strength, complexion & enthusiasm of the sufferer & produces exhaustion exertion & aversion to food. In *jwara* due to *shareerika doshas* or *manasika doshas vikriti* & *agni vikriti*, *ama* is produced & it vitiates *rasa dhatvagni* causing *avarodha* of *swedavaha srotas*, leading to increased temperature. *Jwara* is said to be the first disease that occurs to humans. According to *sushruta*², a person enters and departs from earth with *Jwara* only.

WHO’s Definition of health is “A state of complete physical, mental and social well-being, not merely the absence of disease and infirmity”³. One such disease is *jwara*, that causes *Santapa* (Pyrexia), *Aruchi* (Anorexia), *Trishna* (thirst), *Angamarda* (bodyaches), *Hrdivyadha* (distress in cardiac region)⁴. *Jwara sthana* is *sarvashareera* along with *Manas*, *Jwara* is characterized by excessive heat in the body as well as mind⁵ and line of treatment being focused on *langhana*⁶.

A *Uttama Vaidya* must have the knowledge on how the medicine is acting on the system based on his *yukti*, the contents of the formulation, and must know medicines pharmacokinetics and pharmacodynamics.

Hence here is an attempt made to discuss the formulation *Kasturi Bhairava Rasa* which is mainly indicated in all types of *Jwara*. Whereas the contents in this particular medicine suggest that it can also be given in other diseases.

Materials and Methods for Preparing *Kasturi Bhairav Rasa*:

The name of the formulation suggests it contains *Jantavya dravya Kasturi* in it, it also suggests it cures *Jwara* by the name *Kasturi Bhairava Ras* where *Bhairava* is *adhipati* of *Jwara*. And three variants of *Kasturi bhairava rasa* is *Brihat*, *Madhyama* And *Swalpa Kasturi Bhairava Rasa* based on the number of ingredients present in it. *Kasturi* is the common ingredient in all the three variants. Based on this, it can be said that this particular formulation will be working on *Jwaradhi vyadhis*.

Kasturi Bhairava Rasa is mentioned in different *rasa* classics like *Bhaishajya Ratnavali*, *Rasa Ratnakar*, *Rasda Sudhakar*, *Rasa Chandamshu*, *Rasendra sara Sangraha*, *Dhanwantari Nighantu*. There are 3 variants mentioned in the classics based on number of ingredients as *Swalpa Kasturi bhairava Rasa*, *Madhyama Kasturi bhairava Rasa* & *Brihat Kasturi Bhairava Rasa*. All the above 5 classics have mentioned *Brihat Kasturi Bhairava rasa*, whereas *Rasendra sara Sangraha*, *Rasa Sudhakar* and *Dhanwantari Nighantu* have explained *Madhyama Kasturi Bhairava Rasa* and *Swalpa Kasturi Bhairava rasa*.

Table No. 1 showing Method of preparation of 3 variants of *Kasturi Bhairava Rasa* ingredients and indications:

NAME OF FORMULATION	REFERENCE	MAIN INGREDIENT AND METHOD OF PREPARATION	DOSE, INDICATION
<i>Swalpa Kasturi Bhairava Rasa (Jwara Rogadhikar)</i>	<i>Rasendra Sara Sangraha, Rasarajasundara, Bhaishajya Ratnavali.</i>	<i>Hingula, Shuddha vatsanabha, Shuddha Tankana, Jatikosha, Jatiphala, Maricha, Pippali, Kasturi</i> all ingredients in equal quantity mixed and stored in air tight container.	Dose-2 Ratti Indication- <i>Sannipataja Jwara.</i>
<i>Madhyama Kasturi Bhairava Rasa</i>	<i>Rasendra Sara Sangraha, Rasarajasundara, Dhanwantari</i>	<i>Vanga Bhasma, Karpara (Jashada Bhasma), Kasturi, Swarna Bhasma, Rajata Bhasma</i> -all one tola each, <i>Kantha Bhasma-1 pala, Parada Bhasma, Hemasara, Jatipala, Lavanga-2 tola each.</i> All the ingredients are taken in a <i>khalwa yantra & mardana</i> is done to get the homogeneous mixture. <i>Bhavana</i> is done with <i>Dronipushpi Swarasa</i> and <i>Nagavalli Swarasa</i> for 7 days. Add 2 tola <i>Karpoora</i> and 2 tola <i>Trikatu</i> to this <i>bhavita dravya</i> . Prepare <i>vatis</i> of 3 ratti to 1 masha size each.	Dose-3 ratti to 1 masha Indications: <i>Vatolbana Sannipataja Jwara, Mahashwasha, Sleshma rogas, Tridosha janita Ghora sannipataja daruna, Nasta Garbha, Nasta Shukra, Vishama Jwara, Kasa,</i>

			<i>Shwasa, Kshaya, Gulma, Maha Shotha, Mahagada, Prameha & Raja yakshma</i>
<i>Brihat Kasturi Bhairava Rasa (Jwararogadhikara)</i>	<i>Bhaishajya Ratnavali, Rasa Ratnakar, Rasarajasundara, Rasa Chandamshu, Rasendra sara Sangraha, Dhanwantari</i>	<i>Kasturi, Karpura, Tamra Bhasma, Dhataki churna, Atmagupta Beeja Churna, Swarna Bhasma, Rajata Bhasma, Mukta Bhasma, Pravala Bhasma, Loha Bhasma, Pata Churna, Vidanga Churna, Mushta Churna, Shunti Churna, Sugandabala/Hrivera Churna, Shuddha Haratala, Abhraka Bhasma, Amalaki Swarasa, Bhavana Dravya -Arka patra Swarasa.</i> All the ingredients taken in <i>khalwa yantra</i> and homogeneous mixture is made, to this <i>Amalaki swarasa</i> is added & <i>Bhavana dravya Arka Patra swarasa</i> is added and <i>bhavana</i> is done and <i>vati</i> of 1 <i>ratti</i> is prepared and stored well.	Dose-1 <i>ratti</i> (125 mg) Indiactions- <i>Atisara, Grahani, Jwara, Prameha, Amatisara</i>

The formulation of *Brihat Kasturi Bhairava Rasa* is selected for this study is from *Bhaishajya Ratnavali-Jwaradhikara*. This formulation is made up by 18 ingredients and one *Bhavana dravya* i. e., *Arka Patra swarasa* and numerous therapeutic value.

Contents of the medicine: ⁵

This is a herbomineral preparation containing one *Jantavya dravya*, 8 mineral drugs calx, 9 herbal drugs, Ingredients as in Sl. No 3 in table no 1, which is given *Bhavana* with *Arka Patra Swarasa*.

Table no 2, Showing the ingredients and botanical name, useful part of *Brihat Kasturi Bhairava Rasa*

Sl. No	Name of the Drug	Botanical Name/Latin Name	Useful Part	Quantity
01	<i>Kasturi</i> (Musk)	<i>Moschus moschiferus</i>	Musk Pods	1 part
02	<i>Karpura</i> (Camphor)	<i>Cinnamomum Camphora</i>	Niryasa	1 part
03	<i>Tamra Bhasma</i> (Copper)	Calx of Copper	Calx	1 part
04	<i>Dhataki Churna</i> (Fire flame Bush)	<i>Woodfordia fruticosa</i>	Flower	1 part
05	<i>Atmagupta Beeja Choorna</i> (Velvet bean)	<i>Mucuna pruriens</i>	Seed (<i>Beeja</i>)	1 part
06	<i>Swarna Bhasma</i>	Aurum (Au)	<i>Bhasma</i>	1 part
07	<i>Rajata Bhasma</i>	Argentum (Ag)	<i>Bhasma</i>	1 part
08	<i>Mukta Bhasma</i>	<i>Pinctada Fucata</i>	<i>Bhasma</i>	1 part
09	<i>Pravala Bhasma</i>	<i>Corallium Rubrum</i>	<i>Bhasma</i>	1 part
10	<i>Loha Bhasma</i>	Ferrum (Fe)	<i>Bhasma</i>	1 part
11	<i>Pata Churna</i> (Velvet Leaf, Ice vine)	<i>Cissampelos pareria</i>	<i>Patra, Mula</i>	1 part
12	<i>Vidanga Churna</i> (False Black Pepper)	<i>Embelia ribes</i>	Fruit	1 part
13	<i>Musta Churna</i> (Nut Grass)	<i>Cyperus Rotandus</i>	Root	1 part
14	<i>Shunti Churna</i> (Ginger)	<i>Zingiber officinalis</i>	Rhizome	1 part
15	<i>Sugandabala/Hrivera Churna</i>	<i>Pavania Odorata</i>	Root	1 part
16	<i>Shuddha Haratala</i> (purified Orpiment)	Arsenic trisuphide	<i>Bhasma</i>	1 part
17	<i>Abhraka Bhasma</i> (Mica)	Biotite	<i>Bhasma</i>	1 part
18	<i>Amalaki swarasa</i> (Indian gooseberry)	<i>Emblica Officinalia</i>	Fruit	1 part
19	<i>Bhavana dravya-Arka Patra Swarasa</i>	<i>Calotropis Procera</i>	<i>Patra</i>	Q. S

Any formulation which is being developed needs a few things to be concentrated like *Rasa Panchaka* which are very much important for its *Vyadhihara* property.

Table no 3: Showing Rasa Panchaka of Brihat Kasturi Bhairava Rasa

Sl. No	Dravya	Rasa	Guna	Veerya	Vipaka	Karma	Proven pharmacological activity
01	<i>Kasturi</i>	<i>Tikta, Kashaya</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vata Shamaka, Sheeta Shamaka, Durgandha Hara, Shukravardhaka, Alakshmi Hara, netrya</i>	Antidepressant activity, Cardiotonic, Nervin tonic.
02	<i>Karpoora</i>	<i>Tikta, Katu, Madhura</i>	<i>Laghu, Rooksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha pitta hara</i>	Anti spasmodic, Anti Inflammatory, Anti septic, Cough suppressant, Strong decongestant, Fungicide, Antiarthritic
03	<i>Dhataki</i>	<i>Kashaya</i>	<i>Laghu, Rooksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha Pitta hara, Sandhaneeya, Mutraviranjaniya, Pureeshsangreehniya</i>	Immunomodulatory action,
04	<i>Tamra Bhasma</i>	<i>Kashaya, Madhura, Tikta, Amla</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha pittahara,</i>	Antiacid, Expectorant, Mild Laxative, Digestive stimulant, Emmenagogue, Hematogenic, Lowers Bilirubin, Zinc antagonist.
05	<i>Atmagupta Beeja</i>	<i>Madhura, Tikta</i>	<i>Guru, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara, Balya, Vatasamshamana, Prabhava-Vrishya</i>	Aphrosidiac, Bulk enhancer
06	<i>Swarna Bhasma</i>	<i>Madhura, Kashaya</i>	<i>Laghu Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshaghna-visheshata pitta KshamakaVrishya, Balya, Rasayana, Hridya, Brihmana, Madhasmritiparam, Unmadahara</i>	Immunomodulator activity, Rejuvenatory action, Free radical scavenging activity, Anti cataleptic, Anti anxiety, Analgesic activity, Antioxidant
07	<i>Rajata Bhasma</i>	<i>Kashaya, Amla</i>	<i>Snigdha, Lekhana</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vata pittahara, Rasayana, Bhrama, Vrikshya, Medhya, Jwarghna</i>	Hypoglycemic effect, Anti fungal effect (Candida albicans), Antimicrobial Effect, Free radical scavenger, Anti depressant, Anti proliferative activity

08	<i>Mukta Bhasma</i>	<i>Madhura</i>	<i>Laghu, Sheeta</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Kapha pittahara, Medhya, Netrya, Varnya, Agnipushtikara, Deepana, Pachana, Vrushya, Ayushya</i>	Aphrosidiac, GERD, Acid peptic disorders.
09	<i>Pravala Bhasma</i>	<i>Madhura, Amla, Kashaya</i>	<i>Laghu, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshahara, Kapha vatahara, Ratri swedharaparam, Kantikara, Mangalakara, Balya</i>	Diabetic neuropathy, Hyperhydrosis
10	<i>Loha Bhasma</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Guru, Rooksha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Kapha pittahara</i>	Anti inflammatory, Hematonic
11	<i>Patha</i>	<i>Tikta, Katu</i>	<i>Laghu, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshaghna, Vajikara, Graahi, Asthisandhanaka, Raktashodaka, Sthanya shodhana.</i>	Aphrosidiac, Bone setting
12	<i>Lavanga</i>	<i>Katu, Tikta</i>	<i>Laghu, Rooksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata kaphahara, Vatanulomana, Deepana</i>	Antihelminthic
13	<i>Mustha</i>	<i>Katu, Tikta, Kashaya</i>	<i>Laghu, Rooksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kaphapittahara, Deepana, Grahi, Pachana, Tvachya, Lekhana</i>	Irritable bowel syndrome, Insomnia, Rheumatid arthritis
14	<i>Shunti</i>	<i>Katu</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kapha vatahara, Vatanulomana, Deepana, Hridya, Pachana</i>	Appetizer, Anti inflammatory
15	<i>Sugandabala</i>	<i>Tikta</i>	<i>Laghu, Rooksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha pittahara, Deepana, Pachana</i>	Menorrhagia, Anti diarrhoeal
16	<i>Shuddha Haratala</i>	<i>Katu, kashaya, Tikta</i>	<i>Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata kaphahara, Tridoshaghna</i>	Skin tonic, Anti pyretyic
17	<i>Abhraka Bhasma</i>	<i>Kashaya, Madhura</i>	<i>Slakshna</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshahara</i>	Reduces risk of hypertension, Cardiac diseases, IUGR, Osteoporosis, Aphrosidiac, Nervin tonic
18	<i>Amalaki Swarasa</i>	<i>Lavana varjita pancha rasa</i>	<i>Laghu, Rooksha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshaghna, Cakshusya, Vayasthapana, Vajikara, Rasayana</i>	Diabetes Mellitus Type2, Immunomodulatory, Anti oxidant
19	<i>Arka Patra Swarasa</i>	<i>Tikta, Katu</i>	<i>Laghu, Snigdha, Sara</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata kaphahara, Deepana, Bhedana, Ropana</i>	Wound healing

Method of preparation:¹

All the 17 ingredients in Table no 3 are taken in a *khalva yantra* and *mardana* is done to form a homogeneous mixture.

To this mixture *amalaki swarasa* & *arka patra swarasa* is added and *bhavana* is done.

Prepare vati s of 1 *ratti* each and dry in shadow & then store in glassware

Indication-Various diseases related with *Rasavaha Srotas*, *Shukravaha srotas*, etc. are included in the indications. All the references of have mentioned *Kasturi Bhairava Rasa* in *Jwara adhikara*. *Kasturi Bhairava Rasa* is a Rejuvenating formulation having multidimensional action. It is indicated in all types of *jwara*, *Vishama Jwara*, *Dwandwaja Jwara*, *Bhoutika Jwara*, *Kaamadi sambhav Jwara*, *Abhicharaja*, *Dakhinyadi Graha Sambhava Jwara* is also cured by this formulation. *Anupana Vishesha karma* is attributed to this formulation with particular *anupana* it has particular indication.

Anupana Vishesha: *Bilwa churna* [Aegle marmelos], *Jeeraka churna* & *Madhu* is taken as *anupana* in case of *Amatisara*, *Grahani*, *Jwaratisra* – diarrhea due to impaired digestion and metabolism

Taken in *Musta Kashaya* [Cyperus rotendus] for *grahani*.

Taken in *Dashamoola* – group of 10 roots, for *atisara* (diarrhea) and *Jwara* (fever).

Taken in *Shunti* – ginger [Zingiber officinale] in case of all types of *Jwara*.

Taken in *Amalaki* [Embelica officinale] fruit or *Guduchi* [Tinospora cordifolia] *kashaya* for *prameha* (diabetes)

Or in other appropriate decoctions or *arishtas* for desired effect.

Dose: 1 *ratti*

MODE OF ACTION: Almost all ingredients of this yoga has *jwarahara* properties, *Amapachana Karma* & *Agni deepana* Qualities are inherent.

- Most of the drug in this yoga are *katu*, *Tikta*, *Kashaya rasa pradhana* & *Laghu rooksha*, *Tikshna Guna* with *sheeta veerya* & *Katu vipaka* properties which has *Tridoshara karma* grossly *Kapha vatahara Karma*, Hence brings back *Sthanachuta pitta* to its *Swasthana* by pacifying *prakupita Kapha* and *vata dosha*.
- The drugs in the Formulation as their Action on *Swedavaha srotas*, due to *vyavayi* & *teekshna guna* it cures *Srotovarodha* hence does *sroto vishodana* quickly and reduces *jwara* by *sweda nirharana*.

- It also acts as *agnideeptikara* and does *amadoshapachana* & *nirharana* ‘Ama’ which is culprit to cause any disease basically.

DISCUSSION: As per *Ayurveda* root cause of all diseases is due to *Mandagni* (weak digestive fire) and *Ama* (undigested material). *Ama* released various types of toxins which further suggest infective in origin. *Atisar* arises mainly due to *Ama*. *Kasturi Bhairav Rasa* mainly acts on *Agni*.

It is said to be the first disease that occurs to humans. According to *Aacharya Sushruta*⁷, a person enters and departs from earth with *Jwara* only. *Jwara* is classified into many types based on the combination of *doshas*, They are 8⁸, *Sannipataja Jwara* are again of 13 types⁹. All these *jwara* are having same *poorvaroop*a but different *chikitsa sootras*. *Acharyas* opine that all these kinds of *jwara* are curable only when they are in their *Tarunavastha*.

Brihat Kasturi Bhairava Rasa is a *Kharaleeya Rasayana* which is explained in *Bhaishajya Ratnavali Jwara Rogadhikara*¹⁰.

The *dravyas* used in this preparation are having *Jwaraghna* properties which have been proved in different studies individually and also a *Rasoushadis* like *Swarna bhasma*, *Rajata Bhasma*, *Tamra Bhasma*, *Abhraka Bhasma* because of their *Rasibhavanti* properties²¹ will enter into the *srotas* and will directly work on the Hypothalamus which controls the body temperature and will help in reducing fever.

In the same way these *dravyas* will also help in different ailments pertaining to respiratory tract where again *dravyas* help in curing different ailments like pneumonia, Bronchitis and other URTI.

When it comes to *Sirobhaaga*, all *dravyas* will act according to their *gunas* i. e., *laghu*, *teekshna*, *vyavayi*, *yogavahi*, by which it can be claimed that they will enter into *srotas* and start their action in curing different ailments like *Jwara*, etc., also because of their action on CNS which has been in different studies.

As we reviewed the properties of this both drugs mainly acts on *Annavaha Srotas*, *Swedavaha Srotas*, *Jatharagni*, *Dhatvaagni*. *Atisar* is mainly of *Annavaha* and *Purishvaha Srotas Vyadhi*^(11, 12, 13) *Jwara* is *Annavaha* and *Sweda Vaha Srotas Vyadhi* (disease) hence *Anand Bhairav Rasa* acts on this diseases specifically. Every formulation having its different *Anupana* because of which the *Roghanta* also get differs.

In fact, *Jwarahara Yogas* of classics are designed in a unique way that the anti-inflammatory, anti-viral, antipyretic, antioxidant, immunomodulatory

potentials of drugs act in synergy to enhance the body's overall natural resistance to the disease-causing agent rather than directly neutralizing the agent itself.⁽¹⁴⁾

A thorough analysis of classics reveals that the fundamental principle of combating any form of *Jwara* is digesting the *ama*, preserving the *agni*, relieving *Shrotorodha* (Obstructive pathology occurring in channels) and inducing sweat which in turn brings down the temperature.

Analysis of Antipyretic activity The essential elements of the fever physiologic pathway are release of pyrogenic cytokines by inflammatory cells in response to some exogenous pyrogen (e. g. infection), induction of cyclooxygenase (COX) 2 activation of the arachidonic acid cascade, and enhanced biosynthesis of prostaglandin E₂ (PGE₂) by hypothalamic vascular endothelial cells¹⁵. Through its effect on thermoregulatory neurons located in the preoptic area of the anterior hypothalamus, PGE₂ acts to raise the hypothalamic thermal set point and thereby induce peripheral and thermogenic mechanisms to increase core temperature. Antipyretic agents might interrupt the fever response at any step along this pathway¹⁶.

The antipyretic activity of various drugs may be attributed to the high content of flavonoids in drugs like *Amrita* (*Tinospora cordifolia*), *Amalaki* (*Phyllanthus embelica*), etc. by inhibiting prostaglandin synthesis in hypothalamus. A study reported that Quercetin may inhibit fever causing inflammatory mediators¹⁷.

In a nutshell, the antipyretic action of drugs may be interpreted as follows. β -Sitosterol block the pathway of phospholipase and inhibit the production of arachidonic acid. Flavonoids and its related compounds block the action of Cyclooxygenase pathway and inhibit the production prostaglandins (PGE₂) thus reducing the fever¹⁸.

Analysis of Antiviral activity

There are several mechanisms which govern the antiviral activity of phytochemicals. Inhibition of viral attachment 6-Shogaols, 6-Gingerol, Allicin of Ginger blocks viral attachment and internalization. Tinosporin of Heart Leaved Moonseed inhibit the virus from establishing infection to target the t helper cells¹⁹

Therefore *jwaraghna dravye* should act on *rasavaha* and *swedavaha strotas*. It should acts as *agnideepan*. Therefore *snigdha*, *ushana*, *laghu dravye* can be used in *jwar* but as for *doshprakop*, *Madhur*, *tikta rasa dravye* can be used in *Jwara*. many *jwaraghna dravya* has mentioned in *Ayurveda*

Some acts as *santaphar*, some by doing *aampachan*, some by doing *dahaprashman*. Some drug reduces temp, some does vasodilation, some acts on hypothalamus, or some makes sweating and reduces fever.

PATHA -Cissampelos Pariera Linn. – Menispermaceae It has *tikta rasa*, *ushna veerya*, *katu vipak*. According to *Bhavprakash Nighantu*, It acts as *vatkaphahar*. It can be used in fever, vomiting and diarrhoea. Due to its *tikta rasa* and *ushn veerya*, it acts as *aamdoshhar* and *jwaraghna*. Being febrifuge and refrigerant, it can be used in fever and its related burning disorder. Some study shows antipyretic and analgesic effect observed in Cissampelos Pariera Linn²⁰.

AAMALAKI - *Emblica Officinalis* - Euphorbiaceae. It has *rasayana* property. It means it increases *dhatubal* and can be used in chronic fever. It has antipyretic and analgesic activity. This is due to presence of tannin alkaloids, phenolic compounds, carbohydrates and amino acids^[21] *Aamalaki* exhibits strong antioxidant activity. It has immunomodulatory Action and antiinflammatory action.^[22]

Since flavonoids well known for their ability to inhibit pain perception and to exhibit antiinflammatory properties due to their inhibitory effects of chemical mediator of inflammation. Flavonoids and its related compound also exhibit inhibition of arachidonic acid Peroxidation which results in reducing prostaglandin levels thus reducing the fever^[23] Antioxidant activity of Flavonoids - Flavonoids represent a large group of Low molecular weight compounds with high antioxidant properties. Their specific Chemical structure allows them to reduce oxidative stress through numerous mechanism. Flavonoids could act both preventive antioxidant and chain breaking antioxidants^[24]

CONCLUSION: *Brihat Kasturi Bhairava Rasa* is first mentioned in *Rasa Ratnakar*. is very potent formulation which is widely open to work for further research which is now widely used in different types of *jwara*, *amaatisara*, *shosha*. *Kasturi* is very expensive and difficult to procure hence alternative to it can be researched by the researchers for further use without harming ecological balance. The review will give new insights on the synergistic actions of phytochemicals in formulations to revalidate the clinical evidences and will throw lime light on repurposing of the documented novel drugs and combinations in classics to offer unique preventive strategies and therapeutic solutions to the present pandemic and emerging viral infections.

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