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REVIEW ARTICLE ON ANTIPYRETIC DRUGS W.S.R. CHARKOKTA JWARAHAR MAHAKASHAY

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ABSTRACT

Various treatments have been used to suppress fever since antiquity. Due to hazards of antipyretic, analgesic drugs, importance of herbal medicine has increased. In ayurvedic classics, the Jwara is considered as it is most powerful, ahead of disease (Sarvarogagraj), unavoidable at time of birth and death and can be occur life threatening. Acharya charak had described jwarahar gana in Shadvirechanshatashriya adhyay In sutrasthan. He collected groups of 10 drugs on basis of their pharmacological action. This abstract aims at antipyretic action of drugs included in jwarahar Kashay.

KEYWORDS: Antipyretic, jwarahar, analgesic effect, PGE2.

INTRODUCTION

In Ayurveda jwara is mentioned very important disease. To understand how should be jwaraghna dravya acts, we should know that how jwar can occur in body. Its pathogenesis occurs through agnimandya.

Agni is main physiological factor normal health.

It is representative of pachak pitta.

Jwara is such a paradoxical condition in which agni's function decreases resulting in aam (endotoxin or pyrogen) and pitta gets activated.

Rasa (taste) is mainly a projected tool for prescribing in Ayurvedic therapeutics. Among six rasa, tikta rasa (bitter) is preffered to address two components involved in jwara i.e Agni and

Pitta.[1]

Jwar Samprapti

Prakupit dosh
|
aamashsay
|
Agnimandya
|
Rasavaha and strotasa avarodh
|
Pachakagni manda
|
Jwar

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.

According to Aacharya Wagbhatt, Ushma cannot occur without pitta and jwar can not occur without ushma.

Hence pittaviruddhadi chikitsa can be done in jwara. Main Feature of Jwara is "santapo Dehamanasah". Jwaraghna dravye acts in different ways.

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.

MATERAILS AND METHODS

A critical review of ayurvedic literature from a charaksanhita, on a jwarhar gana for their antipyretic action was done.

Scientific evidence that they drug have antipyretic action have collected here.

Jwarahar Kashay includes

1. Sariva	5. Draksha	9. Aamalak
2. Sharkara 3. Patha 4. Manjishtha	6. Pilu 7. Parushak 8. Abhaya	10. Bibhitak

1. SARIVA – Hemidesmus Indicus R.br. – Asclepiadaceae

It has madhur, tikta rasa, guru, snigdha guna, madhura vipaka and sheeta veerya.

According to Bhavprakash Nighantu, It is used in agnimandya, aruchi, aamdosh and jwara, atisaar and vishadosha.

It acts as agnimandyahar and aamdoshhar by tikta rasa. By snigdha guna it can used in vataj jwar.

Aacharya Charak has mentioned in Stanyashodhan Gana, so it can be used in Sutika jwara. It should be used in Vishaj Jwar as it has property of vishapaha.

Some study shows that it has analgesic, bacteriostatic, antiviral, antifungal, anti-inflammatory, antimicrobial activity.[2]

2. SHARKARA (Saccharum Officinarum. Linn.) - Graminae

It has Madhur rasa, Madhur vipak, sheeta veerya, snigdh and guru guna. It also has property balya, mutral.

So it can be used in raktpittaj jwar. It helps to Recovering Dhatukshaya. It is folk Remedy for cough, fever, diarrhoea and wounds.[3]

Some study shows trinpanchmula and its individual febrifugatic activity better than paracetamol.[4]

3. PATHA -Cissampelos Pariera Linn. – Menispermeaceae

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 Linn.[5]

4 MANJISHTA – RUBIA CORDIFOLIA. L – Menispermeceae.

It has Madhur, tikta, kashay rasa and katu vipak and ushna veerya. It is blood purifying herbs, It cools and detoxifies the blood.

It can be used in treatment of urinary infections, diarrhoea and chronic fever.

Some study shows analgesic and antiinflamatory activies observed in Rubia cordifolia extrct.[6] Due to blood purifying property, it helps to relieve fever.

5 DRAKSHA – Vitis vinifera Linn. – Vitaceae.

According to Bhavprakash Nighantu, It has Madhur rasa, Madhur vipak, sheet veerya and snigdh guna.

It has property like sara, srishtvinmutra, bruhaniya which helps to relieve symptom vibandha, dhatukshay in jwara.

Due to its sheetal guna, it relieves dah in jwara.

Acharya Charak has mentioned draksha in Virechanopag Gana. It acts as mild purgative which is useful in pittaj, raktpittaj jwara. Ripe grapes can be used in cancer, cholera, small pox.

Vitis vinifera is natural antioxidant.

It has hepatoprotective effect, Antimicrobial and antiviral effect, anti-inflammatory effect, and antioxidant effect.[7]

Grapes contains flavonoids and minerals as well as high levels of vitamin C, vitamin K and vitamin A which boosts immunity.[8]

Drinking of grape juice consistently reduces fever and fatigue and gives energy to body. It relieves indigestion which help to produce proper agni, indirectly which maintains bodytemperature.

6. PEELU - Salvadora Persica - Salvadoraceae.

According to Bhavpraksh Nighantu, It has tikta, Madhur rasa and katu vipak and ushna veerya.

It acts as tridoshhar and can be useful in vatkaphaj jwara.

It has great antiplaque, antipyretic, hepatoprotective, antiulcer and antioxidant Activity.[9] Salvodora persica L. contains wide range of chemical constituents which include Salvodorine, trimethylamine, benzalamides etc.

Phytoconstituents like trimethylamine and salvadorine have been reported to have antibacterial effect.[10]

7. PARUSHAK - Grewia Asiatica. L – Tiliaceae.

According to Bhavprakash Nighantu, It has kashay amla rasa, Madhur vipak and sheeta veerya. it acts as vatpittashamak. Due to its madhur vipak and sheeta veerya it reduces dhatukshaya in jwar and helps to relieve jwara.

Grewia asiatica fruit extract have analgesic, antipyretic and antinflammatory Activities.[11]

Grewia asiatica is potent analgesic and antipyretic agent. Grewia asitica has mechanism action of similar to NSAIDS.[12]

8. HARITAKI - Terminalia Chebula - Combreatace

It has amla varjit kashay rasa, Madhur vipak and ushna veerya. It is tridoshhar and used in jwara, Kushth.

Amalkyadi gana (Haritaki, aamalki, chitrak and pippali) has antipyretic effect due to inhibition of synthesis or release of PGE2 into the preoptic area to hypothalamus.[13]

9. Bibhitak - Terminalia bellerica - combretaceae.

According to Bhavprakash Nighantu, It has kashay rasa, Madhur vipak and ushna veerya but himasparsh.

Due to Madhur vipaka and Kashay rasa, it can be used kaphpittaj jwara.

It can be used in ras, asruk, maansa, medogat vyadhi. Hence it can be used in Dhatugat jwara.

It has mentioned in pittarogvinashanam.

Bibhitak has analgesic, antisalmonella activity, antimicrobial activity, antipyretic activity.[14]

10. 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.[15]

Aamalaki exhibits strong antioxidant activity. It has immunomodulatory Action and anti-inflammatory action.[16]

TRIPHALA - It is combination of Haritaki, Bibhitak, Aamalaki. It acts as deepan.

Hence used in agnimandya. It has good action in Vishamjwara. It also has property of kaphpittaghna. Therefore can be given kappittaj jwara. It is used to maintain tridosha.

Triphala is rich in vitamin C, which boost the immune system and potent antioxidant.

It is also rich in bioflavonoids which helps in healing. Triphala churna prevents bacterial and viral infection.

Triphala posses free radical scavenging, antioxidant, antiinflammaotry, antibacterial, antimutagenic, wound healing property.[17]

Pharmacologoical properties and chemical constituents of jwarahar mahakashay drugs.[18]

Name	Scientific Name	Family	Part Used	Pharmacological Properties Reported	Active Chemical Constituents
Sariva	Hemidemus Indicus R.br	Asclepiadaceae	Root	Antiinflammatory Antiulcer	Flavonoids, Tannin, Phytosterol
Sharkara	Saccharum Officinarum	Poeaceae	Granules	Antiinflammatory Analgesic	Flavonoids, Glycosides
Patha	Cissampeloes Pariera L.	Menispermaceae	Roots	Tumor Inhibitor	Alkaloids, Berberine, Cissamperine
Manjishta	Rubia Cordifolia L.	Rubiaceae	Fruits	Antiinflammatory Antibacterial	Glycosides, Anthraquinones, Rubiadin, trietherpenes

Name	Scientific Name	Family	Part Used	Pharmacological Properties Reported	Active Chemical Constituents
Draksha	Vitis Vinifera L.	Vitaceae	Fruits	Antiulcer, Hepatoprotective	Flavonoids, Glucose, Fructose, glycosides
Peelu	Salvadora Perisca L.	Tiliaceae	Fruits	Antiulcer Antimicrobial	Tannin, Salvadain, Glucose, Fructose
Parushak	Grewia asiatica L.	Salvadoraceae	Fruits	Antiulcer, Antimalerial	Flavonoids, Tannins, Glucose, Glycosides
Haritaki	Terminalia Chebula Retz.	Combretaceae	Fruits	Antimicrobial, Purgative	Tannin, triterpenes Glycosides, Chebulic Acid

Name	Scientific Name	Family	Part Used	Pharmacological Properties Repoprted	Active Chemical Constituents
Bibhitak	Terminalia Bellerica Roxb.	Combretaceae	Fruits	Hepatoprotective Antihistaminic	Gallic acid, glycosides, chebulic acid, triterpenoids
Aamla	Emblica Officinalis Garten.	Euphorbiaceae	Fruits	Antiinflamatory, Hepatoprotective	Vit. C, Elagic Acid, Polyphenol, Glucose, phyllumbin

DISCUSSION

Pathology of Fever and Its Treatment

Exogeneous pyrogenes, infectious agents, toxins, tumors

|

Monocytes, macrophages, endothelial cells other immune cells

|

PGE2

|

Anterior Hypothalamus

|

Elevated thermoregulatory set point

\ /

Heat conservations (Vasoconstrictions, Behavior Changes)

Heat production (Invountary muscle contractions)

\ /

Causes Fever

(Treatement of Fever)

/ \

Antipyretics NSAIDS

Fever is complex physiologic response triggered by infections or aseptic stimuli. Elevations in body temp occur when concentrations of prostaglandins (PGE2) Increase within certain areas of the brain.

Antipyretic works inhibiting the enzyme cyclooxygenase and reducing the levels of (PGE2) within the hypothalamus.

Antipyretic and anti-inflammatory effects of salicylates are primarily due to the blockage of prostaglandins synthesis at centres in the hypothalamus and peripheral target sites. They also prevent the sensitization pain receptors to Both mechanical and chemical stimuli.[19]

The phytochemical test on jwarahar mahakashay preparation were strongly indicative of the presence of flavonoids, glycosides and sugars.

Since flavonoids well known for their ability to inhibit pain perception and to exhibit antiinflamatory properties due to their inhibitory effects of chemical mediator of inflammation.

Flavonoids and its related compound also exhibit inhibition of archnoidacid Peroxidation which results in reducing prostaglandin levels thus reducing the fever.[20]

Antioxiant 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.[21]

Since flavonoids exhibit several biological effect such as as anti-inflammatory, antimicrobial, antihepatotoxic and antiulcer activities. it also h has antioxidant property.[22] From above discussion, we can say that flavonoids are useful in chronic diseases. It treat the disease as well boosts immunity.

It is likely that antipyretic action of jwarhar mahakashay Prepaeration is primarily related to presence of flavonoids.

CONCLUSION

Ayurvedic concepts of antipyretic drugs and analgesic activities -The cause of pain in body due to vitatation in body. Pain was expressed in terms of shool, vedana, ruja, arti. Drug

indicated in this condition acts as analgesic and relieves pain. Elevations in body temp is higher than normal temperature is fever. Drugs indicated in such condition act as antipyretics.

Aacharya Charak has mentioned angamarda gana, vedanasthapan gana and shoolprashman gan which relives pain. Aacharya Charak also mentioned jwarghna gana for reducing fever. With dravyes mentioned in jwaraghna Gana, we can also use drugs from angamardaprashman, vedanasthapan in Fever.

Thus ten drugs mentioned in charkokt jwarahar mahakashay have antipyretic and analgesic properties. Various experiments have done on this group of ten drugs and study has proven that they have significant efficacy in various types of pyrexia. It can comparable in strength to some existing chemical antipyretics such as asperin. But as compare to NSAIDs, this polyherbal drugs can be given in long term treatment. This polyherbal drugs doesnot exhibit ulcerogenicity or toxicity even in High doses.[21]

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