Review Article

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UNRAVELLING THE PHARMACOLOGICAL EFFECTS OF NAVAKARSHIKA KASHAYA IN VATARAKTA: A SYSTEMATIC REVIEW OF MECHANISMS AND THERAPEUTIC POTENTIAL

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ABSTRACT

Navkarshika Kashaya (decoction) is classical Ayurvedic formulation mentioned in Chakradatta chapter 23rd for the management of Vatarakta (Gout). This Kashaya is combination of nine drugs in equal amount, which are Aamlaki (*Emblica officinalis*), Haritaki (*Terminalia chebula*), Vibhitaki (*Terminalia bellirica*), Nimba (*Azadirachta indica*), Manjishtha (*Rubia cordifolia*), Vacha (*Acorus calamus*), Kutaki (*Picrorhiza kurroa*), Guduchi (*Tinospora cordifolia*), Daruharidra (*Berberis aristata*). To study the pharmacological evidence of Navkarshika Kashaya (decoction) with their components Ayurveda classical textbook, Research literature published in online journals of Google Scholar, PubMed, were search extensively. The key words used were pharmacological evidence or study of Navkarshika Kashaya. As per the observation the component of Navkarshika Kashaya shows several properties such as Anti-inflammatory, Analgesic, Antioxidant, Hepatoprotective, Immunomodulator. The drug Navakarshika Kashaya has a therapeutic potential to be used as an anti-inflammatory and analgesic agent, drug for Vatarakta (gout).

Keywords: Navkarshika Kashaya, Anti-inflammatory, Analgesic, Vatarakta

INTRODUCTION

The art of healing known as Ayurveda offers different methods to maintain health and prevent disease. The increasing number of patients seeking alternative and herbal therapies is due to the numerous side effects, recurrence of disease, and high cost of modern medicines. In developing countries, there is a growing need for herbal medicines for primary healthcare due to their affordability, cultural acceptability, compatibility with the human body, and minimal side effects. About 75-80% of the global population, particularly in developing nations, still relies on herbal medicine for primary healthcare[1]. "Kwatha" is a term used in Ayurvedic medicine to refer to a type of herbal decoction. It involves boiling herbs in water to extract their medicinal properties, resulting in a concentrated liquid that is typically used for therapeutic purposes. Navakarshika Kashaya is classically mentioned in Chakradatta[2] (chapter 23rd Vatarakta Chikitsa Adhyaya) and consist of Haritaki (*Terminalia chebula*), Vibhitaki (*Terminalia bellirica*), Amalaki (*Emblica officinalis*), Nimba (*Azadirachta indica*), Manjishtha (*Rubia cordifolia*), Vacha (*Acorus calamus*), Kutaki (*Picrorhiza kurroa*), Guduchi (*Tinospora cordifolia*), Daruharidra (*Berberis aristata*). Furthermore, the researchers aim to carry out a clinical study to assess the efficacy of Navakarshika Kashaya in treating Vatarakta (gout). As a result, prior to commencing the clinical investigation, a thorough review of existing literature was undertaken. The objective of this article is to critically evaluate the medication to explore any possible therapeutic advantages and adverse effects.

Navakarshika kashaya

The drug was selected from Chakradatta chapter 23rd. It contains 9 herbs in equal parts. It.is a poly herbal preparation which is mainly indicated in Kushta, Vatarakta, Kapala kushta, Pama, Raktamandala and other skin diseases. The primary causatives implicated in the creation of the disease here are exacerbated Vata Dosha and Rakta Dhatu whereas the contents of Navakarshika Kashaya are pacifying Vata and Rakta Dosha and Amapachna, Rejuvenate properties. Guduchi, Vacha, Haritaki, Vibhitaki and Amalaki they all are Rasayan. Rasayana have potent antioxidant property, which decrease the oxidative stress from free radicle damaging joint tissue and hence contribute to symptoms of gout such as pain and swelling. Manjistha and Nimba has Rakta Shodaka properties which corrects the vitiated Rakta Dhatu. Daruharidra has Vedna Sthapak and Shothara properties. Kutki has Rechaka property thereby helps in correcting vitiated Vata Dosha.

Table 1: Composition of Navakarshika Kashaya

Drug	Latin name	Part used	Part
Haritaki	*Terminalia chebula*	Fruit	1 Part
Vibhitaki	*Terminalia bellirica*	Fruit	1 Part
Amalaki	*Emblica officinalis*	Fruit	1 Part
Nimba	*Azadirachta indica*	Stem bark	1 Part
Manjishtha	*Rubia cordifolia*	Root bark	1 Part
Vacha	*Acorus calamus*	Root bark	1 Part
Kutaki	*Picrorhiza kurroa*	Root bark	1 Part
Guduchi	*Tinospora cordifolia*	Stem bark	1 Part
Daruharidra	*Berberis aristata*	Root bark	1 Part

Table 2: Botanical details of Drugs

Ingredient	Botanical Name	Classical names	English name	Family
Haritaki	*Terminalia chebula*	Abhaya, Bhishakpriya, Pathya	Black myrobalam	Combretaceae
Vibhitaki	*Terminalia bellirica*	Aksh, Kalidrum, bhootvas	Belleric myrobalans	Combretaceae
Amalaki	*Emblica officinalis*	Amlaki, Dhatriphala, Amrita, Shreephala	Indian gooseberry	Euphorbiaceae
Nimba	*Azadirachta indica*	Neem, Nimba	Margosa tree	Meliaceae
Manjishtha	*Rubia cordifolia*	Vikasa, Smanga	Indian Maddar	Rubiaceae
Vacha	*Acorus calamus*	Vach, Urragantha, Jalaja	Sweet flag	Areaceae
Kutaki	*Picrorhiza kurroa*	Tikta, Kanturohini Kandruha, Matsyashakla	Picrorhiza	Scrophulariaceae
Guduchi	*Tinospora cordifolia*	Amritvalrii, Amrita, Madhuparni	Gulancha tinospora	Menispermaceae
Daruharidra	*Berberis aristata*	Daruhaldi, Panchpacha, Darvi	Indian barberry	Berberidaceae

Table 3: Rasapanchaka of Navakarshika Kashaya[3]

Drug	Rasa	Guna	Virya	Vipaka	Dosha-Karma
Haritaki	Kashayapradhan (Pancharasa)	Laghu Ruksha	Ushna	Madhur	Tridhoshara, Rasayana, Deepan, Rechaka Vatanulomak
Vibhitaki	Kashaya	Laghu Ruksha	Ushna	Madhur	Tridoshar, Shothahara, Vednasthapaka
Amalaki	Amlapradhan (Pancharasa)	Guru Ruksha Sheeta	Sheeta	Madhur	Tridhoshara Rasayana, Dahaprashamana
Nimba	Tikta Kashya	Laghu	Sheeta	Katu	Kaphapittashamak, Raktashodhaka
Manjishtha	Tikta Madhur Kashaya	Guru Ruksha	Ushna	Katu	Pittaghna Kaphaghna, Raktashodhaka
Vacha	Katu Tikta	Laghu Tikshna	Ushna	Katu	Vataghna Kaphshamaka Shothara
Kutaki	Tikta	Laghu Ruksha	Sheeta	Katu	Kaphapittaghna Rechaka
Guduchi	Tikta kashaya	Guru Snigdha	Ushna	Madhur	Tridoshara Raktashodhaka, Dahaprashamana
Daruharidra	Tikta Kashaya	Laghu Ruksha	Ushna	Katu	Kaphapittaghna, Vednasthapaka

Table 4: Pharmacological activities of Navakarshika Kashaya[4]

Drug	Pharmacological activities
Haritaki	Antimicrobial activities, antispasmodic, anthelmintic, purgative, vitiligo etc.
Vibhitaki	Vitiligo, antibacterial, bronchodilator, antispasmodic, antistress, Purgative antifungal.
Amalaki	Antimicrobial, anti-inflammatory, antioxidant, immunomodulatory, spasmolytic.
Nimba	Antimicrobial activities, anti-inflammatory.
Manjishtha	Antimicrobial, anti-inflammatory, antioxidant, hypoglycaemic, anticancer etc.
Vacha	anti-inflammatory, antispasmodic, anticonvulsant.
Kutaki	Antimicrobial, anti-inflammatory, antioxidant, antipyretic
Guduchi	Antimicrobial, anti-inflammatory, antioxidant, immunomodulatory, hepatoprotective, antipyretic, analgesic.
Daruharidra	Antimicrobial, anti-inflammatory

DISCUSSION

Navakarshik Kashaya is a poly herbal preparation mentioned in Ayurvedic Samhitas for diseases like Kustha (different types of skin diseases) and Vatarakta (gout). Most of the drugs in this formulation are Katu, Tikta and kashaya Ras Pradhan so these are helpful in correction of abnormality in Jathraagni as well as Dhatvaagni, which leads to Pacchan of Ama (undigested metabolites) and clear the of obstruction in Shrotas. Whereas Kashaya Rasa has Rakta and Pitta shamaka properties which reduces Daha (burning sensation)[5].

Daruharidra – It has Vedna Sthapak, Shothara and Raktashodhaka properties which help to reduce Ruka, Shotha and Daha symptoms of Vatarakta.

Guduchi – It is Tridosh shamaka. Due Snigdha Guna and Ushna Virya it is Vatashamak. Tikta – Kashaya Rasa helps in Pitta-Kapha Shamana. In Agreya Prakarana Acharya Charak mentioned its Vatahara and Rakta Prashamana properties, thus it helps in correction of vitiated Vata and Rakta in Vatarakta Vyadhi[6].

Haritaki, Vibhitaki, Amalaki and Guduchi have Madhur Vipaka which is responsible for Vata Shaman as well as Mutra Virechan karma. Thus, helping in excretion of excess uric acid present in blood. Virechana is considered one of the best treatments for Vatarakta and Triphala and Kutki in Navakarshik Kashaya is responsible for Virechana Karma[7].

Guduchi, Vacha, Haritaki, Vibhitaki and Amalaki they all are Rasayan. Rasayana have potent antioxidant property, which decrease the oxidative stress from free radicle damaging joint tissue and hence contribute to symptoms of gout such as pain and swelling. According to Bhavprakash Guduchi possesses Mutrajanana properties, which increase the uric acid excretion through kidney and hence decrease joints edema.

Nimba – It has Tikta Rasa predominance which purifies blood and cures Raktjanya Vyadhi, as Rakta Dhatu is vitiated in this disease.

Manjistha- It has Rakta Shodaka properties which corrects the vitiated Rakta Dhatu. Its Varnya property helps in Vaivarnyata[8]. It also has Vaidna Sthapaka and Shothaghana property[9].

Vacha - It has Laghu, Ruksha and Tikshna Guna, which helps in Shrotoshodana. It is Vatahara (Alleviates Vata), Mala Mutravisodhani (Clears stool and urine)[10]. It has Deepan, Pachana and Vatanulomaka property hence it helps in suppression of vitiated Vata dosha causing Vatarakta[11].

Modern point of view

Amalaki - Its fruit is enriched in tannins Emblicanin A and B, Vitamin C, which has good antioxidant properties therefore help in inflammation and act as analgesics, relieving Toda (~pricking pain), tenderness, and Sandhi Shula (~pain in joints) in gouty patients[12].

Vibhitaki and **Guduchi** have nephroprotective properties and thereby reduces the chances of uric acid stone development in patients with Gout[13].

Haritki - The biologically active compounds such as chebulagic acid, gallic acid and ellagic acid present in T. chebula, which helps in suppression of inflammatory process by decrease NO

production and potent antioxidant Malonic acid which suppress TNF alpha, IL-6, macrophages and support the joints[14-16].

Daruharudra - Berberine alkaloid present in Daruharidra use as formulations for, rheumatism, eye care, wounds, skin diseases, jaundice and diabetes[17].

Kutaki - Kutki has anti-inflammatory and anti-arthritic properties, Apocynin, which is found in the root of Kutki is a potent NADPH (nicotinamide adenine dinucleotide phosphate), oxidase inhibitor and has anti-inflammatory and antioxidant properties[18].

Manjistha - Manjistha contains alizarin and purpurin, which have anti-inflammatory, antioxidant, anticancer, hemostatic, antibacterial properties. It has anti-inflammatory action due to the presence of rubimallin. It also interfered with the lipoxygenase enzyme pathway, which catalyzes the synthesis of different inflammatory mediators such as leukotrienes, which are involved in arthritis, asthma, and other inflammatory illnesses, as well as cumene hydroperoxides[19].

Vacha - This herbal medicine has anti-inflammatory activity. Eugenol present in rhizome of Vacha has analgesic properties. Methanolic extract of Acorus calamus also showed analgesic effect[20].

Neem - It also plays role as anti-inflammatory via regulation of proinflammatory enzyme activities including cyclooxygenase (COX), and lipoxygenase (LOX) enzyme. Nimbidin present in Neem suppresses the functions of macrophages and neutrophils relevant to inflammation[21].

Guduchi - It contains alkaloid Berberin, steroid β-Sitosterol and Diterpenoid lactone which have anti-inflammatory property. Tinosporaside and sesquiterpenoid glycoside chemicals in Guduchi known for its antioxidant activity, helping to neutralize free radicals and reduce oxidative stress[22].

CONCLUSION

Navakarshik Kashaya contains nine herbal drugs that possess properties that can lower the blood uric acid level and subside symptoms like inflammation, joint pain, and stiffness found in cases of gout. Most of the drugs in this formulation are Katu, Tikta and Kashaya Ras Pradhan so these are helpful in correction of abnormality in Jathraagni as well as Dhatvaagni, which leads to Pacchan of Ama (undigested metabolites) and clear the of obstruction in Shrotas. Whereas Kashaya Rasa has Rakta and Pitta Shamaka properties which reduces Daha (burning sensation). Metabolic disease has been reported as reactive O2 species mediated, Rasayana by its antioxidant property reduce the oxidative stress and improve metabolic process, thereby it prevents the metabolic disease.

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