Overview of Pentatropis capensis (Asclepiadaceae)- An Extra Pharmacopoeial Plant

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ABSTRACT

Plants are a rich source of many natural products. In India, most of which have been extensively used for traditional human health care systems viz. Ayurveda, Unani and Siddha. Most of these pharmacopoeial unidentified drugs are practiced by the folklore people to cure many diseases. Pentatropis capensis is one such plant which is used as nasal drops to alleviate headache, running nose and body ache by folklore practitioners in the name of Kukka bachchataay\textsuperscript{1}. Pentatropis capensis has cooling and alterative properties. ‘The Wealth of India’ confirmed its the analgesic, antifungal, anti-septic, Keratolytic properties and effective for skin diseases. Similarly, antifungal, anti-Septic and anti-ketolytic properties of Pentatropis capensis have been mentioned in ‘Compendium of Indian Medicinal Plants’. In ‘Flora of Saurashtra’ the use of ground material and infusion of root was found. It described its use by folk people in fevers, hydrocele and also on rheumatism. In ‘Medicinal Plants of Gujarat’ Pentatropis capensis is described as alternative, antifungal, antiseptic, and coolant and further mentioned it uses in skin diseases. Dr. Koppula Hemadri in ‘A Treatise on Tribal Medicine’ has described the tribal use of Pentatropis capensis. Tribal people heat the leaves in gentle fire and extracted juices and used as nasal drops to alleviate headache, running nose and body pain.

Keywords: Pentatropis capensis, Kukka bachchataay, Medicinal plant.

INTRODUCTION

Pentatropis capensis is one such plant which is used by folklore practitioners in the name of Kukka bachchataay\textsuperscript{2}. In Ayurveda it is considered as Kākanāsā Siddha system of medicine accepted Pentatropis capensis as Uppilankodi and used in the preparation of gold and silver parpams (bhasma)\textsuperscript{3}. Kākanāsā has been used in the indigenous system of medicine since long time. Caraka has included Kākanāsā in Madhura skandha. Kākanāsā has been used in preparation of Chyavanprash, Trayousanadi ghṛta and in the treatment of Apsamara, yoni roga. Susruta has mentioned it only Anuvasan vasti with other drugs only to two places. Astanga Hrdaya mentioned oil preparation in Guhya Roga Pratisedha, preparation of Chyavanprash and Anuvasan vasti karma. Various lexicons has been described as emetic, rasayanā, bālya, paśitapaha, analgesic and anti-inflammatory and useful in the treatment of sotha, Raktavikara, Shvitra, kustha and in gulma. Kirtikar and Basu have been depicted in ‘Indian Medicinal Plants’.

Vedic Period: (6000 ) - there is no description or reference regarding the drug Kākanāsā.

Samhita Period:

Acharya Charaka mentioned the drug Kākanāsā in Madhura Skandha (VimanaShhana-8), as an ingredient of Chyavanprash (Ca-chi-11/62-64) and Trayousanadi ghṛta in kasa chikitsa, Yoniroga Chikitsa (Ca. Chi-30/50), Kustha Chikitsa(Ca-Chi-7/123), Apsamara Chikitsa (Ca. chi-10/37), Anuvasan Vasti (Ca.Si.-4/5, 9, Ca.Sid-10/37) along with other drugs\textsuperscript{4}.

Susruta Samhita (2ndB.C.) Susruta has mentioned Kākanāsā in Anuvasanottara Vastichikitsa(Su Chi-37/20, 23) with other drugs and second preparation is used in the manner of Anuvasan-basti in cases of gulma and retention of stool and urine with a distension of abdomen and also acts as an invigorating and constructive tonic, improves digestion, increases strength and creates fresh semen\textsuperscript{5}.

Astanga Samgraha (6thcentury A.D.) It mentioned Kākanāsā in enema(basti) preparation (AS. KA. 4/36), which is beneficial in excess bouts and in medicated oil preparation (AS. UT.-39/33) which intake orally to cure all type vataja and pittaja disorders and for embryo production, and in Chyavanprash avaleha (AS. UT..49/39-47) which is a well rasayana.
Astanga Hridaya (7th century A.D.) The drug Kākanāsā is mentioned in Gvaghya Roga Pratisedha (AH.UT.-34/42), as an ingredient for restoration of conceptionand in Rasayana vidhi (A.H.U.S. - 39/34) as an ingredient of Chyavanaprash. Further reference found in Kalpa - Siddhi sthana, Anuvasa vasti for all type of arthritic problems also in putrayanuvasan vasti and this special type of vasti helps to give birth of male child Vangsam In Basti Karmādhikāra (VS. BK. - 93-95) to eradicate all type of rheumatoid complaints by Anuvasa vasti manner and in Jivantadya Yamaka (V. S. B. 96-98). The vasti of this preparation used for the alleviation of pain in joints (brimhana), gives strength, semen and appetite and to eradicate the problems of micturation, semen and menstruation. Further reference found in Kshayaja kasa nidana (VS. KK.-159-165), Vrīhat Vasakadāya Ghrta and indicated in all type of cough, helpful for emaciated people, clears voice and purifies blood [6].

Vrinda Madhava or Siddha Yagyavrindha madhava mentioned Kannānēśā in Rajakshāmdikār (V.M.-10/34-48), in the preparation of Chyavanprash and it is a well-known rasayana [7].

Cakradatta (11th century) CakrapaniDatta, in his commentary, mentioned Kannānēśā in Rajakshāmdikāra (C.D.-10/46-59), in formulation of Chyavanprash [8].

Sarangadhara Samhita (13th century A.D.) Sarangadhara mentioned Kannānēśā in Chyavanaprashaavedha Kalpaṇa (Sh. Mad. Ksh. - 811), the commentator Adhamalla, mentioned as “Kakanakasakouadodi ilī Loke” Another reference of Kannānēśā found in Uttara kanda, bastidhikar (Sh. Ut. Ksh. -5/47-49), in the formulation of Guduchyadi taila and indicated in all type of rheumatoid disorders [9].

Bhavaprakasa Samhita (16th century A.D.) In this samhita, Bhava Mishra mentioned Kannānēśā, in oil enema preparation(Bh. Pk.5/130-132) and it used to cure all diseases caused by aggravation of vata.Vrīhat Nighantu Ratnakara The author mentioned Kannānēśā under sathoraga chikitsa, in the preparation of Panchamuladi taila, in any type of sotha caused by vata and kapha [10].

Nighantu Period

Dhanvantari Nighantu (10th Century A.D.) Mahendra Bhogika had mentioned this drug under ‘Karavirdi varga’ - as wound disinfecting agent and helpful in defects of fat metabolism. It is having bitter, pungent taste and hot in potency [11]. Dhanvantari Nighantu (10th Century A.D.) Mahendra Bhogika had mentioned this drug under ‘Karavirdi varga’. It is having bitter, pungent taste and hot in potency. Amaṭam Kasa (11th century A.D.) Amaṭam Kasa has mentioned Kākanāsā in the gradient zone of manakkudy estuary, and also mentioned in all type of arthritical problems also in putrayanuvasan vasti and this special type of vasti helps to give birth of male child Vangsam In Basti Karmādhikāra (VS. BK. - 93-95) to eradicate all type of rheumatoid complaints by Anuvasa vasti manner and in Jivantadya Yamaka (V. S. B. 96-98). The vasti of this preparation used for the alleviation of pain in joints (brimhana), gives strength, semen and appetite and to eradicate the problems of micturation, semen and menstruation. Further reference found in Kshayaja kasa nidana (VS. KK.-159-165), Vrīhat Vasakadāya Ghrta and indicated in all type of cough, helpful for emaciated people, clears voice and purifies blood [6].

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The previous studies on Pentatropis capensis has been shorted out and explained below.

A study on medicinally important agro weeds of north eastern coastal Tamil Nadu has indicated the use of Pentatropis capensis in acidity and fever [27].

An Ethnobotanical study in the Pudukottai District shows a high degree of Ethno botanical innovation and the use of plant sources for medicine by the rural communities reflects many species of the family Fabaceae and Asclepiadaceae are frequently used whereas Pentatropis capensis also used by this people in constipation, colic, and diarrheal problems [28]. Assessment of bioactivity of Indian medicinal plants using brine shrimp (Artemia salina) lethality assay shows 3000 μg/ml extract of P. capensis lethal cooling agent [29]. PhD thesis on “A Contribution to Ethnobotany of Mehsana District, North Gujarat” by Modhwadia Avdabhai Rambhai illustrated about 490 plants of Mehsana district. He pointed out the medicinal use of whole plant of Pentatropis capensis (Local Name: Singroti) in curing of skin diseases and mentioned the properties as anti-fungal, antiseptic [30]. The quarterly newsletter of envison Indian estuaries, mangroves, coral reefs and lagoons carried out on the diversity of fauna of the mangrove afforested area situated in the gradient zone of manakkudy estuary, explains Pentatropis capensis (Local name: Chhaghel lata) medicinally Issues noted as alternative, refrigerant [31]. The phytochemical screening of whole plant extracts shows presence of carbohydrate, flavonoids, tannins, glycosides as major constituents. The antibacterial and antioxidant activity also evaluated of whole plant extract. It was effective against bacterial organism [32]. In Sastra University, the pharmacognostical work on Pentatropis capensis, highlighted the botanical parameters, microscopic standards, phytochemical screening, fluorescence analysis, quantification of inorganic and biochemical standards to establish the identity of P. capensis in its crude form [33]. The Analgesic and Anti-inflammatory activities have been found from ethanol extract of Pentatropis capensis (K. Chandrasekaran et al., IJBS 2011) [34,35].

Kākanāsā Karma Vivecana (Evam- Gunam)
Action on Dosa:

Almost all the texts have clearly mentioned its action on kapha and vata. Kākanāsā alleviates kapha due to its katu, tikta and kasaya rasa, ushna virya and ushna guna. Because of Ushna Virya and ushna guna it alleviates provoked vata.

Action on Dhatu:

The drug is generally used as ingredient of Chyavanprash in Rajayaksa chikitsa. It shows that it nourishes all the dhatu including rasa, rakta etc. That’s why it develops the immunity

Action on Mała:

The agneya guna helps to increase blood circulation at renal tubules and irritate kidney to increase quantity of micturition.

Karma: (Evam- Prabhavam)

1) Vaman: Kākanāsā by its kasaya rasa and ushna virya helps to increase agni and vayu mahabhuta in the body. It has tendency to cause vomiting by upward direction.

2) Sula Prasamana: Kākanāsā by its ushna virya and snigdha guna normalises the disarrange vayu which responsible for sula.

3) Sotha hora: Due to ushna virya Kākanāsā pacifies mainly vata and simultaneously normalise pitta and kapha. By normalizing dosas, it remedies sotha.

Therapeutic Uses: (Asmin -vyadhaya)

Official Parts: The medicinally useful-Mula, Patra, Beeja, Panchanga

Dose Fixation: (Anaya-ca-Matraya Yuktam)

Maharshi Kasypa has stated doses in Ka Khi. 3/101. As a controversial drug and rarely referred in ancient texts, the optimum dose of Kākanāsā is unavailable. In Ayurvedic Pharmacopoeia optimum dose 2-5 g should be accepted. (According to ‘The Ayurvedic Pharmacopoeia of India’, Part-I, Vol. – III, I.S.M. and H. New Delhi).

Compounds or Preparations of Kākanāsā In Ayurvedic Classics

(Evam- Upasamskrtam):

Caraka Samhita ( c.s.): Yoga Rogadhikara Ref., Chyavanprash avaleha, in Rasayanay. (Ca chi-1-1/62-64), Trasayanadhi Ghrta, in Kasa chikitsa (Ca. Chi-30/50)

Astanga Samgraha: ( A.h. ) Yoga Rogadhikara Ref., Chyavanprash avaleha, Rasayanay (As. Us- 49/40), Jivantsyada Yamaq, Siddhi nasty (As. Ka- 5/48)

Vangsen: Yoga Rogadhikara Ref., Guduchyadi Taila (VS. BK.. 93-95), Jivantsyada Yamak (V. S. B. 96-8), Vrihat Vasakadaya Ghrta (VS. KK.- 159-165)


Vapaka-Madhura Raja.Nighantu. Amla Bhavaprakash Nighantu

Method of Propagation: As a dehiscent fruit, seed are removed naturally from the mature and ruptured fruit and due to containing of coma seeds are distributed to a large area.

CONCLUSION

From the literature review it can be clearly affirmed that Kākanāsā having Madhura rasa,valya, vamak, garbha sthapak, Vata hara, Kasa hara, sotha hara, manasonda hara & rasayana property and that’s why it also useful in Rajakshā (tuberculosis), kasa (cough), swasa (Dyspnoea), Jwara (fever), Shosa (consumption), Hridroga (heart disease), Vatarakta (gout) and also a potent aphrodisiac, tonic, clears voice and purifies blood. It also indicated in Kustharaoga (skin diseases), Apasmara (epilepsy), all type of vataja disorders or rheumatoid complaints, Sotha (Inflammation), Raktovikar (bleeding disorder), Shivita (vitiligo), Arsha (Piles), sula (colic pain), karna sula (earache), and paliitya (greyness of hair). The medicated oil enema of Kākanāsā with other drugs helpful in Yoni roga (Vaginal problem), vataja vikara, gulma, vishtambha (constipation), Aanaha (abdominal distension), in excess bouts, digestive problems, beneficial for stoutening and subdues vata and pitta, helps in conception, eradicate the problems of semen and menstruation. The analgesic activity shows significant increase in basal reaction time (K. Chandrasekharan et al, 2011). The methanolic extract of the plant showed significant effect on hydrogen peroxide radical scavenging activity (Mohan Gandhi et al, 2012).

REFERENCES

1. Dr. Koppula Hemadri; A Treatise on Tribal Medicine; Sri Sri Printers, Vijayawada, 2011.
2. Dr. Koppula Hemadri; A Treatise on Tribal Medicine; Sri Sri Printers, Vijayawada, 2011.

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