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A CONCEPTUAL REVIEW ON TAGAR (VALERIANA WALLICHII DC) AND IT'S MEDICINAL PROPERTIES

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ABSTRACT

Tagar (Valeriana wallichii DC) is a perennial herb, which belongs to Valerianaceae family. Tagar is widely used in indigenous system of medicine. In Ayurvedic text Acharyas mentioned Tagar as a potent herb to be used in various diseases like insomnia, poisoning and nervous disorders. Different parts of the plant root, rhizome, seed and flower have medicinal value. It is include as important ingredient in many Agad yoga. This herb is beneficial in treating in anxiety, epilepsy, insomnia, and hysteria. It has many pharmacological activities like anti-inflammatory, analgesic, antimicrobial, antipsychotic, anthelmintic. The active constituents essential oil, saponins, tannis, alkaloids, flavinoids, tannis are present in Tagar. The present article is an attempt of gathering information on review of different Ayurvedic texts and research article about Tagar.

KEYWORDS: Valeriana wallichii, Tagar, rhizome, sleep, chemical constituents.

INTRODUCTION

In recent years, herbal based product has increases demand, due to their less side effects. Similarly a herb known as Tagar (Valeriana wallichii DC) is used from hundreds of years. In Indian system of medicine the herb Tagar is very well know and beneficial in treating insomnia, nervous problem, snake bite, hysteria, anxiety, depression and hypertension.

Vernacular Names- Tagar (Valeriana wallichii DC) belongs to family Valerianaceae. Tagar is commonly known as "Tagar, Sugandhabal" in Hindi, "Indian Valerian" in English, "Mushkabal" in Malayalam, "Bala, Mushkbala" in Kashmiri, "Tagar Ganthoda, Tagar Gantho, Ghodawaj" in Gujrati, "Tagar, Ganthode" in Marathi, "Tagar Paduk" in Bengali.[1]

The herb Tagar act against Gara (compound poison) and it is a very good antidote for Kroda Visha.[2] Kutil is called because irregular shape of flowers.[3] Natam is called because it is one of the drugs among aromatic herbs.[4]

Synonyms

Tagara	A.N.[5], K.N.[6], D.N.[7], B.N.[8], R.N.[9]
Vakra	A.N., K.N., D.N., B.N., P.R.
Nata	A.N., K.N., D.N., B.N., R.N. P.R.
Kalanusari	A.N., K.N., D.N., B.N., R.N.
Kutila	K.N., D.N., B.N., R.N., P.R.
Nahusha	A.N., K.N., D.N., B.N., R.N.
Dheena, Anruja	D.N., P.R., M.N.[10]., K.N.
Dadruhasta, Parthiva, Kshathra Muneendudha	R.N.

A.N. - Astang Nighantu; **K.N. -** Kaiyyadeva Nighantu; **D.N**.- Dhanwantari Nighantu; **B.N. -** Bhavprkash Nighantu; **R.J.-** Raja Nighantu; **M.N.-** Madanpala Nighantu.

Classical References

Varga(Group)	**Literature**
Sheetprashamana	Charak Samhita[11]
Eladi Varga	Sushruta Samhita[12], Ashtanga Hrudaya[13]
Chandanadi Varga	Dhanvantri Nighantu[7], Shodhal Nighantu[14]
Aushadi Varga	Kaiyyadeva Nighanthu[6]
Karveeradi Varga	Raja Nighantu[9]
Karpuaradi Varga	Bhavaprakish Nighantu.[8], Madanpal Nighantu.[10], Saligrama Nighantu
Jatamansi Varga	Nighantu Adharsha
Karveeradi Varga	Priya Nighantu.[15]

Acharya Charaka has also mentioned Tagar in Tikta Skandh and Vamnopag. Charak has made plans for Tagar in Vaatroga, Vaatrakt, Rajayakshma, Unmaad, Kustha, and Urustambha. Sushruta also used tagar as raktasravak and Ropan dravya.[12]

Botanical description[16] - Tagar (Valeriana wallichii DC) is a slightly hairy perennial herb with 15-45 cm height. Its root stock is thick and horizontal.

Leaves- basal leaves of Tagar (valeriana wallichii) are often 2.5 to 7.5 cm in diameter, long stalked, deeply cordate-ovate, usually toothed or sinuate, sharp pointed. Stem leaves few, much smaller, entire or pinnate.

Flowers – white or tinged with pink in a terminal corymbs, 2.5 to7.5 cm wide, often unisexual, the male and female in different plants. Flowering occurs in March- April.

Distribution- The plant occurs abundantly on open slopes, grassland, forest and shrubberies in the temperate Himalaya from Kashmir to Bhutan at an altitude of 1300-3800m and in the Khasi hills between 1250-1800m. It is propagated by seeds.[17]

Part used- Moola (rhizomes)[18]

Figure - Tagar (Valeriana wallichii DC).

Macroscopic determination of Tagar Valeriana wallichii rhizome

Rhizome, of about 4-8 cm long and 4-10 mm thick pieces, dull yellowish-brown. Sub-cylindrica1 and dorsiventrally somewhat flattened, rough, slightly curved and unbranched, upper surface marked with raised encircling leaf scars, under surface bearing numerous, small, circular prominent, root scars and a few stout rootlets, crown bearing remains of aerial stems with scale leaves, fracture short and horny, stolons connecting rhizomes stout, 1-5 mm long and 2-4 mm thick, yellowish-grey in colour, longitudinally wrinkled, usually with nodes and internodes and bearing adventitious roots, occasionally thin stolons 1-2 mm thick, root, yellowish-brown, 3-5 cm long and 1 mm thick, odour, strong and reminiscent of isovaleric acid, taste, bitter and somewhat camphoraceous.[19]

Microscopic determination of tagar Valeriana wallichii rhizome-

Rhizome - transverse section of rhizome shows cork, consisting of 4-14 layers of lignified, cells occasionally containing oil globules, cortex parenchymatous containing numerous starch grain oil globules and yellowish-brown substance, outer 2 or 3 layers of cortex, collenchymatous occasional root traces appear as paler strands, endodermis single layered, pericycle, pareachymatous .and within it 12-18 collateral vascular bundles, separated by dark medullary ray present, pith large, parenchymatous, lacunar, containing starch grams, starch occurs as single or occasional compound grains of two components, individual grains being 7-30 μ mostly, 10-25 μ in diameter, calcium oxalate crystals absent.[20]

Chemical (active) Constituents

The major known active principles of this herb are valepotriates, dihydrovaltrate, isovalerinate, 6-methylpigenim, hesperidins and sesquiterpeoids. Rhizomes and roots of Tagar (Valeriana wallichii) contains volatile oil, which is composed of alkaloids, boryl isovalerianate, chatinine, formate, glucoside, isovalerenic acid, 1- camphene, 1-pinene, resin, terpineol and valerianine.[21] The rhizome having some important compounds, such as citric acid, malic acid, maliol, succinic acid and tartaric acid have been isolated.

The volatile components of rhizome of Valeriana wallichii consists of sesquiterpenes (89.3%) kanokonyl acetate (42.4%) γ-curcumene (10.7%) ar-curcumene (7.2%) (Z)-β farnesene (3.2%), xanthor rhizol (4.1%), 7-epi-α-selinene (2.2%), valeranone (2.0%) and curcuphenol (1.4%). Other active constituents of Valeriana wallichii are sesquiterpenes, 6-methyl apigenin and hesperdinoids.[22]

Pharmacological activity- Tagar (Valeriana wallichii) is widely used medicinal herb in many parts of the world including India in the management of various conditions. The main activities of the herb are analgesic and anti inflammatory, myorelaxant and antispasmodic, anti-psychotic activity, antimicrobial activity, hypnotic activity, anthelminitic, cytotoxic and antioxidant activity.[23]

Analgesic activity-Essential oil and alcohol extract of Valeriana wallichii exerted good peripheral analgesic action via inhibition of prostaglandin synthesis on acetic acid induced writhing.

Anti inflammatory activity-By using in vitro lipoxygenase inhibition assay with methanolic extract and ethyl acetate fractions of Valeriana wallichii anti inflammatory activity was carried out. Carrageen induced hind paw edema test on the acute and chronic phase inflammation models in male wistar rats showed good activity in vitro and in vivo anti inflammatory activity of ethyl acetate fraction showed good activity.[24]

Antihypertensive - The hypotensive effects of Valeriana wallichii are mediated possibly through k_{atp} channel activation.[25]

Anti-psychotic activity- Petroleum ether extract evaluated ambulatory activity plus maze, spontaneous locomotor activity and sodium thiopental induced sleep in mice.[26] The essential oil of Valeriana wallichii exerted antidepressant activity using forced swim test in mice at a dose of 10, 20 and 40 mg/kg p. o. of the plant. The aqueous extract of Valeriana wallichii markedly attenuated ischemia-reperfusion induced cerebral injury in mice.[27]

Antimicrobial activity- By gas chromatography-mass spectrometry the essential of Valeriana wallichii and components of valerian were tested against pine wood nematode Bursaphelenchus xylophilus.[28] Chloroform fraction and hexane fraction showed good activity against S. aureus and B. subtilus. Different root extracts like water, methanol and chloroform of Valeriana wallichii showed antileshmanial activity against L.major amastigotes.[29]

Hypnotic activity-In man, Sleep quality improves in the aqueous extract of valeriana wallichii. Brain monoamine level in rates and sleep quality were improved by the aqueous root extract of valeriana wallichii.[30]

Ayurvedic properties and pharmacological effects

Rasapnchak.[31]

Rasa	**Tikta, Katu, Kashaya**
Guna	**Laghu, snigdha**
Vipaka	**Katu**
Veerya	**Ushna**
Doshagnta	**Tridoshahara**

Karma (action) - Manodoshhara, apasmar roga nasaka, Vishghna, shothahara, netraroghara, raktadoshahara.[32]

Rogaghnata (therapeutic indication)[33][34][35]

- **Apasmar-** Epilepsy
- **Visha-** Poisoning, toxic Conditions.
- **Raktadosha-** blood impurity and helps to treat skin diseases.
- **Shiroakshiroga-** headache, eye disorders.
- **Madaroga-**Intoxication.
- **Bhuta-**Psychiatric disorders, anti microbial

THERAPEUTIC USES

- Root of Tagar (Valeriana wallichii) is triturated with buttermilk and given internally will cure various Vataja shiroroga. (Rajamartanda Nighantu).[36]
- Tagar (Valeriana wallichii) is triturated with buttermilk to prepare a paste. Consuming this paste will relieve Vatavyaadi immediately. (Chakradatt Vatvyadi 22/55)[37]
- The paste prepared by Tagar powder is useful in asthibhagna (bone fracture), aamvata. Its paste alleviates the pain.[38]
- Its paste promotes the healing of wounds. Hot infusion of Tagar also used for wound wash.
- The cold infusion or decoction of the root is given to treat fever.

Dose - 12-24 ratti[39] (1.5 to 3gm.)

Ayurvedic formulations (Containing Tagar)

Pippalyasava[40] **-** It is used to treat digestive complaints, respiratory disorders, anemia and piles.

Dashang lepa[41] **-** used to treat many skin ailments and rheumatoid arthritis.

Devadarvarishta[42] - It is used to treat skin diseases, Vata roga, digestive disorders, piles, urinary disorders.

Nalikerasavam[43] **-** Use for sexual disorders, complexion and beauty.

Vilvadi gulika[44] - It is useful to treat snake, insects, scorpion bites and psychological conditions.

Himasagara tail[45] **–** It Used for treatment of locomotor problems, muscle wasting, sleep distrbances.

Puga Khanda[46] - It is use in gastritis, vomiting, abdominal pain and bleeding disorders.

Tagara in various Agada Yoga in Visha Chikitsa

The herb Tagar is called due to it is act against Gara (compound poison) and it is a very good antidote for Kroda Visha. In Ayurveda texts, Tagar is an ingredient of many agad yoga.

Caraka Samhita[47]

In the chapter **Visha pratisheda Adhyaya**, about 13 agad yoga contains Tagar is an ingredients. Some important agad yoga are, Mritasanjeevana Agada, Mahagandhahastinamagad etc.

In Sushrut samhita[48]- Chandanadi Agada, Ajeya Ghrita, Ajita Agada, Taakshrya Agada, Saarvakarmika Agada, KsharaAgada, Kalyanaka ghrita, Mahasugandhi Agada, Shirisha tagaradi Agada.

Ashtanga Hrudaya[49]- Chandrodaya Agada, DooshiVishari Agada, Shirishadilepa, Sind-huravaraadi Agada.

Bhaishajya Ratnavali[50]- Kushtadi Agada, Ajita Agada, Shikari ghrita.

CONCLUSION

Tagar (Valeriana wallichii) is a hairy perennial herb, which is belongs to family Valerianaceae. It is highly beneficial herb since long years. It has been observed that many Ayurvedic text and Acharyas used it in many diseases mainly epilepsy, skin diseases, bleeding disorders. Its local application is also useful in bone fracture, joint affected with Rheumatoid arthritis, Wounds healing. Tagar has beneficial effects on brain, mind, heart, stomach liver and spleen. Many pharmacological activity and chemical constituents are found in Valeriana wallichii. Tagar is a good antidote of visha (poison) such as insects, scorpion, and snake bites.

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