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Shirisha in Agada Tantra

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ABSTRACT

Visha Chikitsa, as the *Agada Tantra* is popularly known deals with various methods of cleaning the poisons out of the body as well as recommend antidotes for particular poisons. In present time excess use of pseudo drugs, which results in higher incidence of adverse reaction, has motivated humans to return to nature for safer treatment or remedies. In this review we have taken *Albizia lebeck* aka *Shirish* which is an important medicinal tree. Present review aimed to compile the data to highlight the *Vishaghna* property of *Shirisha* and effort is made to collect scientific evidences and researches. A herbal drug commonly known as *Shirish* (*Albizia lebeck*) is very useful for the therapeutic property and useful in various disease treatment. *Shirish* does not need recognition in the world of Ayurveda. *Shirish* known as a best anti toxic drug. It is used in *Kushtha*, *Kandu*, *Visarapa*, *Kasa*, *Shavas*, *Pama*, *Vrana*, *Shotha*, *Sarpdandh* *Mushak* *Visha*, *Sheetpitta*, *Rakta Dushti*, *Vishamjwara*, *Vishadushti*, *Suryavart*, *Ardhaavbhedak*, *Netrabhishyanda*.

Key words: *Agad Tantra*, *Shirish*, *Vishghana*, *Agada*, *Ayurveda*.

INTRODUCTION

Ayurveda totally depends upon *Chikitsa Chatushpada*. *Bhishag* (physician), *Upasthatha* (Medical Attendant), *Rogi* (patient) and *Dravya* (medicine).

According to *Acharya Charak*, the *Oushadi* to be administered to the patient should possess the following four ideal qualities.

Bahuta (It should be available in abundant quantity), *Yogyatam* (It should be effective), *Aanekvidha Kalpana* (Various pharmaceutical forms or multiple use), *Sampat* (Richness in efficacy or potency)^[1] and *Shirish* fulfilled all these four qualities. *Acharya Charak* also quote the *Shirish* “*Visghananaam Srestho*”.

All parts of *Shirish* are extensively used as a general and universal antidote in traditional medicine like *Panch Shirish Agada*, *Mahagandhahasti Agada* etc.^[2]

Taxonomy^[3]

- Botanical Name - *Albizzia lebeck*.
- Classical Name - *Shirisha*
- English Name - *lebeck*
- Genus - *Albizzia*
- Species - *A. lebeck*
- Family - *Fabacea*

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Vernacular Names^[4]

- English name - lebbeck, lebbek tree, flea tree, frywood, koko and woman
- Telugu name - Dirisena chettu
- Hindi name - *Siris*
- Tamil name - Vegiai
- Kannada name - bage mara
- Malayalam name - Vaga
- Punjabi name - Siri, Shari
- Gujarati name - Sarsado
- Bengali name - Sirosh
- Marathi name -Siras
- Sanskrit** Synonyms: *Kapitana*, *Mrudupushpa* (Flowers are soft), *Shukapirya*, *Shukapushpa* (flower resembles bird beak), *Bhandi*, *Bhandira*.

Citations from Sanskrit Literature^[5]

The delicacy, nicety and the sensitivity of the *Shirisha* flowers are compared with *Sita*. Similarly, in *Kumarasambhava* of *Kalidasa*, *Soukumaryta* of Goddess *Parvati* is exemplified by the *Shirisha* flowers. Its flowers are so delicate and are having pleasant smell. As *Gandha* is the property of *Pruthvi Mahabhuta*, *Shirisha* can purify the polluted air by its fragrance. Further study is needed in this context. *Shirisha* was also used for beautification in lieu of ear ornaments. *Shirisha* flowers were also extensively used in Astrological practices to predict the good crop of *Priyangu* and *Kanguni*.

Classification^[6-12]

- Charaka Samhita* : *Vishaghna*, *Vedana Sthapana*, *Shirovirechana*, *Kashaya Skanda*
- Sushruta Samhita* : *Salsaradi Gana*
- Vagbhata* : *Asanadi Gana*
- Amarkosh* : *Vanausadhi Varga*
- Sausurat Nighantu* : *Slasaradi Gana*
- Ashtanga Nighantu* : *Asandi Varga*

- Dhanvantri Nighantu* : *Amaradi varga*

Parts Used - Stem Bark, Seeds, Leaves, Flowers, Bark.

Dose:^[13]

Powder – 3 to 6 grams per day, Water decoction – 50 to 100ml, Fresh juice – 10 to 20ml

Distribution & Habitat:

The genus *Albizia* comprises almost 150 species. *Albizia lebbeck Benth* is a large, erect, unarmed, deciduous spreading tree. Throughout India, usually planted, tropical and subtropical regions of Asia and Africa. It is native to deciduous forests in Asia from eastern Pakistan through India and Sri Lanka to Burma. (Kumar et al. 2007)^[14]

Plant Description

A medium to large sized upright, unarmed, tree grows about 20 m in height with a spreading crown. Stem: Branches with grey to dark brown, rough, irregularly cracked, bark young shoots hairless. Flower: White to greenish-yellow, fragrant, borne in globose umbellate heads, 2-3.8 cm in diameter, peduncles 3.8-7.5 cm long, solitary or 2-4 together. Leaves: Abruptly bipinnate, with glabrous or downy rachises, a large gland near the base of the main petiole, pinnae 4-8, 7-12 cm long, leaflets 5-9 pairs, short-stalked, rigidly subcoriaceous, oblique, 2.5-3.8 cm long. Fruit: Pods 10-30 cm long, 2-4.5 cm wide, linear oblong, bluntly pointed, thin, green turning yellow-brown on maturity, smooth, shining reticulately veined. Seeds: 4-12, pale brown, ellipsoid, oblong compressed. Fruiting: December-February. Flowering: April-June

Properties^[15]**Rasa Pancaka**

- Rasa* : *Madhura*, *Tikta*, *Kasaya*,
- Guna* : *Grahi*, *Laghu*, *Tikshna*
- Virya* : *Anushna*
- Vipaka* : *Katu*
- Bija* : *Shukra Stambhaka*
- Doshaghna* : *Tridoshghna*

- *Rogagnata* : *Twakroga*, *Shwasa*, *Shotha*, *Agrya* *Aushadha* for *Visha Chikitsa*.

Chemical Constituents

- Leaf - Saponins tanins and two new tri-O-glycoside flavonols, kaempferol and quercetin 3-O- α -rhamnopyranosyl (1'6)^[16]
- *Beeja* (The beans) - Albiginc acid it's a triterpenoid sapogenin.^[17]
- *Chaal* (Plant bark) - Two saponin known as libbekenin A & B, Three Saponin albizia saponins A, B and C [15-17] Condensed tannins (7-11%) & dcatechin, libbecacidin, isomers of leucocyanidin, friedellin-3-one, acacic acid; Echinocystic acid and β - sitosterol, a saponin - libbekenin C - on acid hydrolysis yielded echinocystic acid, 5glucose and rhamnose. friedelan -3-one (friedelin) and γ -sitosterol from bark.^[18]
- *Sara* (Heart wood) - Me7lanoxetin, d-pinitol, okanin & leucopelargonidin, a stereoisomer (-) melacacidin (7,8,3',4'- tetrahydroxyflavan-3,4-diol), and libbecacidin in addition to melacacidin and melanoxetin, two new compounds – (-)2,3-cis-3,4-cis-3, Ω -methylmelacacidin as its methyl ether and 3'-O-methylmelonoxetin-isolated.^[19]
- *Moola* (Tap Root) - Saponin are characterized as echynocystic acid-3-O-L-rhamnopyranosyl (1 \rightarrow 5)- β -D-xylofuranolsyl (1 \rightarrow 4)- β -Dglucopyranoside.^[20]

Medicinal Uses

- Usage in poisoning - Its flower is squeezed and juice is extracted. It is triturated with black pepper and sugar and is used for nasal instillation, and for oral intake in snake bites.^[21]
- Worm infestation - After enema, intake of *Shirish* and *Careya arborea* (Wild guava) juice mixed with honey is useful in worm infestation.^[22]
- Topical application of paste prepared from *Albizia lebbbeck* (Lebbeck tree) seed and *Piper longum* powder triturated with *Calotropis procera* latex is useful in snakebite, spider sting, insect poisoning, rat poisoning and scorpion sting.^[23]

- Snake poisoning - Snuff and collyrium of white variety of *Piper nigrum* (Black pepper) powder triturated with *Albizia lebbbeck* (Lebbeck tree) flower juice is useful in snake poisoning.^[24]
- Topical application of paste or powder prepared from an equal quantity of *Cassia fistula* leaves, *Cordia myxa* bark, *Albizia lebbbeck* flower and *Solanum nigrum* is useful in erysipelas.^[25]
- Rat poisoning - Intake of powder prepared from *Albizia lebbbeck* (Lebbeck tree) extract, flower, fruit and bark along with honey is useful in emaciation, insomnia and pericarditis caused due to rat poisoning.^[26]
- *Ksharagad Paana* - *Nasya*, *Abhyanga*, *Lepa* of *Twak* of *Shirish* is used in *Jangama*, *Sthavara*, *Sarva Vishanashaka*.^[27]
- *Parama Agad* - *Twak* is used in *Sthavara*, *Jangama* as *Paana*, *Nasya*, *Anjana*.^[28]
- *Mahagandhahasti Agad* - *Panchanga* is used for *Mushika Dansh*, *Luta Dansh*, *Sarpa Dansh*, *Mula* and *Kanda Visha* in the form of *Paana*.^[29]
- *Dhoomagad* - *Pushpa* is highly significant in the cases of *Keeta Dansh*. In *Mashaka Damsha*, *Dhoom* to fumigate the home.^[30]
- *Sarvakarmika Agad* - In *Luta Visha*, *Beeja* is used as *Paana*, *Nasya*, *Anjana*, *Lepa*.^[31]
- Folk Medicine: Folk remedial claims of *Shirish* according to Hartwell (1967–1971) is the tree is used for boils, cough, eye ailments, flu, and lung ailments, for abdominal tumor, in bowel enemas. It is reported as an astringent, pectoral, rejuvenant, and tonic. The seed oil is effective in leprosy. Seed powder is useful in scrofulous swellings. Indians use the flowers in the condition of abnormally frequent and involuntary no orgasmic emission of semen.^[32]

Experimental details of *Albizzia lebbbeck*^[33]

1. Hepatoprotective activity

In paracetamol induced hepatotoxicity *Shirish* leaves in ethanolic extract proof the remarkable hepatoprotection.

In CCL4 induced study *Shirish* Bark in Ethanolic extract have Hepatoprotective activity of the test extract were found be significant.

2. Anti asthmatic activity

Clinical trials with the bark have showed significant relief in case of bronchial asthma.

3. Anti allergic activity

Research studies have demonstrated that histamine signalling related H1R and histadine decarboxylase (HDC) genes are allergic disease sensitive genes and there expression level effect severity of the allergic symptoms. Therefore, compounds that supress histamine signalling should be promising *Dravya* as antiallergic drugs. The same study investigated the effect of extract of bark of *A. lebbeck* on rats. Administration of *Shirish* extract significantly decreased allergy symptoms.

4. Analgesic & Anti-Inflammatory Activity of *Albizzia lebbeck* was proved (Achinto et al.2009)
5. Antiulcer properties of 70% ethanolic extract of leaves of *Albizzia lebbeck*. Anti inflammatory activity of 70% ethanolic extract of *Albizzia lebbeck* leaves was reported (Shirode et al. 2008).
6. Methanolic extract of bark of *Albizzia lebbeck* possess anti-inflammatory activity. (Pramanick et al. 2005).
7. The leaves of *Albizzia lebbeck* possess nootropic activity in mice (Kasture et al. 1996)
8. V.P. reported that the Saponins of the leaves *Albizzia lebbeck* possess nootropic & anxiolytic activity. (Une et al., 2001).
9. The leaves of *Albizzia lebbeck* possess anticonvulsant activity. (Kasture et al., 2000).
10. Methanolic pod extract of *Albizzia lebbeck* (L) Benth possess antifertility activity in male rats. (Gupta et al., 2004)
11. The seed extract of *Albizzia lebbeck* Benth. Possess anti diarrhoeal activity. (Ganguly et al., 2002) The effect of extract is studied for antioxidant activity.^[34]

12. Phytochemical screening of successive extracts of *Albizzia lebbeck* leaves shows presence of carbohydrates, alkaloids, tannin, flavonoids, terpenoids, coumarins, glycosides, phenolics, and saponins.^[35]

DISCUSSION

From all the above details *Shirish* is a wonderful plants in Ayurveda. It can be cultivated easily with enough water supply. It is *Agray* in *Visha Chikitsa* because of its *Prabhav* properties. *Shirish* shows that it possesses *Kashaya, Tikta Rasa. Tikta Rasa* itself is antitoxic in nature. *Shirish* shows Pharmacological activity headings as Anti-asthmatic activity, Anti-diarrheal activity, Antimicrobial, Anti-inflammatory activity, analgesic, Anti-ulcer activity. Phytochemical screening of successive extracts of *Albizzia lebbeck* leaves shows presence of carbohydrates, alkaloids, tannin, flavonoids and saponins. All this function is proved in laboratories but antitoxic effect of *Shirish* is time tested. Still there is a huge scope to explore this drug on different parameters. Its availability and easy plantation methods is the next economical point for research on this drug for cheap and effective formulations for the masses. In the present review attempt is being made to established the traditional as well as contemporary, scientific and experimental researches which are done to reveal the antitoxic effect of *Shirisha*.

CONCLUSION

This review highlights the major goal of *Vishaghna Shirish* and their significant role. *Acharyas* mentioned *Shirish* in different *Varga, Agad, Yogas*. Different study shows the hepatic protection, antimicrobial, analgesic, anti-inflammatory, anti-diarrhoeal, immuno-modulatory, anti-asthmatic, anticonvulsant, anti-allergic, and antioxidant activity of the drug. Therefore, exploration of different Ayurvedic herbs can be carried out through experimental studies with their proper documentation. It will be helpful in enhancing the use of herbal drugs like *Shirisha* (*Albizzia lebbeck*) in general practice and making it globally accepted by humans.

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