

A Critical Review on *Shirisha* (*Albizia Lebbeck*) and Its Formulations with special reference to *Visha Chikitsa* (Management of Poisoning)

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Abstract

Ayurveda is a part of science of wholesome living. Majority of medicine mentioned in Ayurveda are plant based. Agadanta (Toxicology) is specialized branch of *Ayurveda* that highlights the different mode of poisoning & its management. While treating different cases of poisoning different modality of treatment are used. *Agada* (Antidote) is one of the modality which is prepared by the combination of different anti-poisonous herbs. *Shirisha* (*Albizia Lebbeck*) is one of the important herbs having a broad range of therapeutic effect. Apart from that in classical textbook it is mentioned as a *vishaghna*. So present review is aimed to compile up the updated data and highlight the *vishaghna* property on its pharmacological activity. After compiling the data it was found that near about 12 *Agadas* contain *Shirish* which is mostly used in cases of poisonous bite. Scientific researches show its anti-histaminic, anti-allergic, Antiulcer, hepatoprotective, anti-bacterial activity. on this basis it is concluded that our Acharyas' perception about *Shirish* as an anti-poisonous is very factual.

Keywords

Shirish, Albizia Lebbeck, Vishaghna, Agad, Anti-poisonous herb



Greentree Group

Received 05/10/16 Accepted 17/11/16 Published 10/01/17

INTRODUCTION

Ancient toxicological aspect is well described in one of the branch of Ayurveda, which is known as *Agadtantra*. In *Agadtantra* detailed description about *Visha*, its classification, mode of administration of poison its symptoms is well described. After explanation of all these contents some modalities is described in the treatment of *Visha*. Out of that one of the modalities is use of *Agadas* which act against *Visha*¹. These *Agadas* is anti-poisonous formulation which is prepared by combination of several drugs. Many *Agadas* are describe in Samhita including their indication & method of administration. Ancient sage of Ayurveda has illustrated many herbs as a *Vishghna*.

But one of the most important & commonly used herbs in many *Agadas* is *Shirisha*. (*Albizia Lebbeck*) It is a tall tree belonging to Mimosoideae family. It is grown all over India. *Acharya Bhavprakash* mentioned two types of *Shirish*. *Shweta* & *Krishna*. *Krishna* (*Albizia lebbeck*) variety is easily found but *Shweta Shirish* (*Albizia proccera*) is very rare². While describing its properties *Acharya* mentioned that it has *Madhur Rasa*, *Anushna Veerya* & *Tikta Vipak*. It is *Tridoshshamak*. Its action is *Shothhara* (anti-

inflammatory), *Vedanasthapan* (analgesic) *Va rnya* (complexion promoter), *Vrishya* (*Spermatogogue*), *Vishaghna* (antipoisonous) *Shirovirechana* (*Nasya*), *Chakshushya* (beneficial to eyes) *Stambhana* (antidiarrhoeal) *Raktashodh aka* (Blood purifier) & *Kaphaghna* (antitussive)³.

In Samhita *Acharya* mention *Shirisha* as a *Vishghna dravya*. But its action as an anti-poisonous agent is not proven so this review is a small attempt to explore its antipoisonous activity on literature based.

Chemical Constituent:-

The *Shirish* bark yields tanins of condensed type viz. D – catechin, isomers of leucocyanidin & melacacidin & a new leucoantho-cyanidin, lebecacidin. It also gives friedelin & β – sitosterol. Seeds contain crude protein, calcium, phosphorous, iron, niacin & ascorbic acid, amino acid & composition of proteins: arginine, histidin, leucin & isoleucin, lysin, methionine, phenylalanine, threonine, tyrosine & valine. The flowers contain lupeol, α - & β -amyrin & pigment similar to crocetin⁴.

Spider Poisoning: Application of the paste of <i>Shirisa</i> , <i>Katabhi</i> (Careya arborea), <i>Arjun</i> (Terminaliya Arjuna), <i>Shlesmantak</i> (Cordiya diachotoma)	Rat bite: Paste of Shirisa and <i>Inguda</i> (Balanites Aegyptiaca) should be taken with honey	Scorpion bite: Flowers of <i>Shirisha</i> , <i>Karanja</i> (Pongamia pinnata), <i>Kushtha</i> (Saussurea lappa), <i>Manshila</i> (As ₂ S ₂), <i>Kashmira</i> (Gmelina arborea) destroy the scorpion poison.
	Insect Bite: <i>Shiris</i> seeds mixed with <i>Pippali</i> (Piper longum) powder are impregnated thrice with Arka latex. This formulation destroys poisons of insects.	In the management of rat bite application of paste of <i>Shirish</i> , <i>Rajani</i> (<i>Rubi</i> acordifoliya), <i>Vakra</i> (<i>Pistic</i> aintegrammiya) <i>Kumkum</i> (crocus stivus), <i>Amrutavalli</i> (<i>Tinospora</i> cordifoliya)

Table 4 Different Formulations & Agad of Shirish For Internal/ External Use

S. No.	Formulation	Important Ingredients	Indications
1.	Shirisharishta	<i>Shirish</i> , <i>Priyang</i> (<i>Callicarpa macrophylla</i>), <i>Kushtha</i> , <i>Ela</i> (<i>Nagkesha</i> (<i>Mesua ferrea</i>), <i>Haridra</i> (<i>Curcuma longa</i>), <i>Daruharidra</i> (<i>Berberis Asiatica</i>), <i>Sunth</i> .	In all cases of poisoning ¹¹ .
2.	Shirishabejadi lepa	<i>Ark</i> , <i>Shirish</i> , <i>Pimpali</i> ,	Insect, snake, spider, Scorpion Bite ¹² .
3.	Shirishadya anjana	<i>Shirish</i> , <i>Pimpali</i> , <i>Marich</i> , <i>Saindhav</i> <i>lavan</i> , <i>Lahsun</i> (<i>Allium stiva</i>), <i>Manshil</i> , <i>Vacha</i>	In unconscious patient ¹³ .
4.	Kandarpsara taila	<i>Giloy</i> , <i>Nimb</i> , <i>Haridra</i> , <i>Shirish</i> , <i>Ark</i> , <i>Dhat</i> <i>ura</i> , <i>Snuhi</i> , <i>Kumari</i> , <i>Bramhi</i> , <i>Patol</i> , <i>Pimp</i> <i>ali</i> , <i>Chira-yata</i>	All types of <i>Kushtha</i> ¹⁴ .
5.	Dashanga lepa	<i>Shirish</i> , <i>Mulethi</i> , <i>Tagar</i> , <i>Lalchandan</i> , <i>Chhoti</i> <i>ilayachi</i> <i>Jatamansi</i> , <i>Haridra</i> , <i>Daruhardra</i> , <i>Kushtha</i> , <i>Netrabala</i>	Visarpa, <i>kushtha</i> , <i>Jwar</i> , <i>Shoth</i> ¹⁵ .
6.	Panchashirisa Agada	<i>Shirish</i> , <i>Panchang</i> , <i>Trikatu</i> ,	Insect bite ¹⁶ .
7.	Amrut Ghrut	<i>Apamarg</i> , <i>shirish</i> , <i>Shweta</i> , <i>Mahshweta</i> , <i>Kakmachi</i> , <i>Cow's urine</i>	Comatose patient ¹⁷ .
8.	Tanduliyak Agad	<i>Tanduliyak</i> , <i>Kashmarya</i> , <i>Kinihi</i> , <i>Girikar</i> <i>nika</i> , <i>Matulungi</i> , <i>Sita</i> , <i>Shelu</i>	Rajiman snake bite ¹⁸ .
9.	Ashtang Aga	<i>Vansh</i> , <i>Katuka</i> , <i>Patali</i> , <i>Nagar</i> , <i>Shirishbeej</i> , <i>Govedhuk</i> , <i>Vacha</i>	Ghonus Bite ¹⁹ .
10.	Sarvkarmik Agad	<i>Vansh</i> , <i>Amalki</i> , <i>Kapithha</i> , <i>Trikatu</i> , <i>Haimvati</i> , <i>K</i> <i>ushtha</i> , <i>Karanjabeej</i> , <i>Tagar</i> , <i>Shirisha</i> , <i>C</i>	Spider Bite ²⁰ .

		<i>ow's bile</i>	
11.	Rishabh Agad	<i>Twak, Ela ,Jatamansi, Kinihi, Patol,Patha, Padmak, Ashok, Bharangi, Vidang, Chandan, Yashtimadhu.</i>	Snake poison,insect poison ²¹ .

Pharmacological Activity

Anti asthamatic Activity:-

Clinical studies of stem bark decoction reported significant decrease in WBC, eosinophilic count, ESR, and 56% marked improvement in case of bronchial asthma²²

Decoction of the flower in the dose of 50mg/kg body weight has significant action against histamine induced bronchospasm. The activity could be due to smooth muscle relaxation²³

Antianaphylactic Activity

The bark decoction had a significant cromoglycate like action on the mast cellsof albino rats&appeared to also inhibit the early process of sensitization & synthesis of reaginic type of humoral antibodies.The studies indicated that the anti-anaphylactic activity of *A. lebbeck* due to cromoglycate action on the mast cells, is also due to inhibition of the synthesis antibodies and suppression of T-lymphocytes activity²⁴.

Analgesic & Anti inflammatory effect:

The extract of the bark of *Albizia lebbeck* obtained by cold extraction of mixture of equal proportions of petroleum ether, ethyl

acetate and methanol was prepared. In rat oedema was induced by carrageenan, the extract at the 400 mg/kg dose level showed 36.68% ($p<0.001$) inhibition of oedema volume at the end of 4hours. In the acetic acid-induced writhing test, the extract at the 200 and 400 mg/kg dose level showed 39.9 % and 52.4 % inhibition of writhing, respectively. In radiant heat tail-flick method the crude extract produced 40.74% ($p<0.001$) and 61.48% ($p<0.001$) elongation of tail flicking time 30 minutes after oral administration at the 200 and 400 mg/kg dose level, respectively²⁵.

Effect on Cardiovascular Activity:

It shows a positive ino-tropic effect on the frog heart, the action being mediated through the adreno receptor²⁶.

Anti Ulcer Property:

Alcohol extract of *A.lebbeck* when administered orally exhibits significant anti ulcer activity in ethanol-induced ulceration in rats. The saponin fraction of the plant is considered to be responsible for its anti ulcerogenic activity by protecting the gastric cells²⁷.

Anti-diarrheal effect:

A Lebeck possesses anti bacterial activity against infectious diarrhea. Aqueous, methanol & chloroform extracts of A. Lebeck exhibited activity against *E. coli* & *Salmonella* species. It also shows moderate activity against *V. cholera*, *A. hydrophilis* and *B. subtilis*²⁸.

Antimicrobial activity:

The Glycosides isolated from the stem bark exhibited antimicrobial activity against *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Trichophyton rubrum*²⁹.

DISCUSSION

While mentioning the source of poisoning Acharya categorized the poison in *Sthavar Visha* (vegetative poison) & *Jangama Visha* (animal poison). Acharya Charaka mentioned 24 remedial measures for the treatment of poisoning. One of the measures in treatment of poisoning is use of Agad that means antipoisonous formulation. *Albezzia lebeck* (Shirish) is one of the most important herb in all this anti-poisonous formulation. *Shirish* is used in many Agadas. Charaka mentioned *Shirish* under the division of Antipoisonous herb. All parts of the plants are recommended for the treatment of snake bite. Panchshirish Agad,

a preparation of five parts of *Shirish* recommended for the treatment of all type of poisoning. Amritaghrita, Tanduliya Agad, Ashtang Agad, Sarvakarmik Agad are some common preparation of *Shirish* which was used indifferent type of poisoning.

While studying the properties of *Shirish* it was seen that it is Tridoshshamak & it possess qualities like *Shothhara* (Anti-inflammatory),

Vedanasthapa (analgesic), *Varny* (complexion enhancer), *Vishaghn* (anti-

poisonous), *Shirovirechana* (Raktashodhaka (blood purifier)). Pharmacodynamics of *shirish* shows that it possesses *Kashay Tikta Rasa*. *Tikt rasa* itself antitoxic in nature & *Kashay ras* help in the healing procedure in bite cases. In the cases of poisoning specially in insect bite, snake bite, rat bite symptoms are pain, inflammation & oedema. Phytochemical screening of successive extracts of *Albizzia lebeck* leaves shows presence of carbohydrates, alkaloids, tannin, flavanoids and saponins. Main attraction of phytochemical screening is presence of tannins, saponin and flavanoids where absence of proteins and amino acids³⁰

After several experimental model & clinical trial multi dimensional activity of *Shirish*

like analgesic, anti inflammatory ,anti allergic, anti bacterial, antifungal, anti protozoal, anticonvulsant ,anti anaphylactic, antioxidative is proved .

CONCLUSION

As Shirish contain many alkaloids, flavnoids, tannin, saponin & many of its action proved on scientific basis it can concluded that it is a very promising plant in various activities, therefore ancient Aacharyas have mentioned it as Vishaghna plant.

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