



Review Article

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CONSIDERATION OF VISHAGHNA (ANTI-TOXIC) ASSETS OF ALANGIUM SALVIFOLIUM (LINN. F.): A REVIEW

Sanjeev Kumar¹, Chandra Shekhar^{2*}

¹Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

²Department of Rasa Shastra & Bhaishajya Kalpana, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India

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*Corresponding author

E-mail: chandu4ubhu@gmail.com

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ABSTRACT

In Ayurvedic treatise Ankol is described as a good detoxifying agent in case of Alarka visha (dog bite), Mushak visha (rat bite), Sarpa visha (snake bite) and Luta visha (spider bite) along with other therapeutic potential like anti helminthes, purgative, laxative, emetic, anti protozoal, anti diabetic and for anti ulcer activity. In the present review an attempt is made to highlight the pharmacognostical, phytochemical as well as therapeutic uses with special reference to its Vishaghna (Antitoxic) property in Brihatrayee, different Chikitsa granths, Kosha and Nighantus reports on *Alangium salvifolium* (Linn. f.), and calls for better-designed clinical trials to further elucidate its possible therapeutic effects on antitoxic effect.

Key words: Ankol, *Alangium salvifolium*, Vishaghna, Brihatrayee, Nighantu.

INTRODUCTION

Although Ayurveda does not rule out any substance from being used as a potential source of medicine, presently about 1000 single drugs and 8000 compound formulations of recognised merit are in trend. All the main classical works on Ayurveda, such as Charaka samhita, Susruta samhita, Astanga Sangraha and Astanga Hridaya deal with drugs, their composition and action in addition to the other aspects of the medical system. Some of the Ayurvedic books known as Kosha & Nighantu granthas like Amarkosha, Dhanvantari nighantu, Kaiyadeva nighantu, Bhavaprakash nighantu, Raj nighantu etc. deal mainly with single drugs, describing their habitat, characteristics and therapeutic action. In case of individual drugs, on account of various ecological factors, the same plant has varying properties depending upon the region, the climatic conditions of its growth. etc¹. Visha means the Dravya which causes Visshaad (sorrow or depression)². And the drugs which act against these toxic substances are specified as Vishghna³. Although Ankol is not described under the category of Vishaghna Mahakashaya Dravya by Acharya Charaka but its anti poisonous action is well described in Brihatryee especially in the Kalpa sthan of Sushuta samhita and Uttar sthana of Astanga Hridayam. Nighantus, which are recognized as the ancient treasure of knowledge related to the collection and thoroughly description of rare and endangered plant species also described the various properties of Ankol along with its Visha-har (anti poisonous) effect (Table 3 & 4).

AYURVEDIC PERSPECTIVE ON ANKOL

A. salvifolium, a plant of great medicinal value is abundantly found in dry regions in plains, low hills and on roadsides throughout India especially in the dry regions and dense forest of south India. It belongs to Alangiaceae family. The plant is commonly known Ankol, Dhera or Gudhapatra in Hindi and Sage leaved Alangium in English. Ankol is a medium-sized tree

of 10-20 feet height with a maximum girth of 1.2m, rough light brown bark⁴. Branchlets grey- or purple-brown, often with strong spines up to 1.2 cm. long, pubescent or glabrous. Leaves are rectangular- lanceolate shaped with velvety at their dorsal surface. Leaves are variable with an average 3–23 cm. long and 1.4–9 cm. wide, petiole up to 1.5 cm. long; lateral nerves 3–9, venation openly reticulate, prominent below^{5,6}. Flowers are cream with a slight orange tinge, 5–10-merous, 13–31 mm long, 1–17 in almost sessile inflorescences, pedicels 2–8 mm long. The pedicels and cylindrical buds are velvety with golden-brown hair. Calyx tube urceolate like and petals is ligulate, densely pubescent outside, internally pubescent or glabrous. Stamens are narrow and long while style is glabrous, slightly dilated from above with capitate or conical, somewhat lobed stigma⁷.

Anti toxic potential of Ankol

Drugs which act against toxic substances are called as Vishghna. Some Vishghna drugs act by Dravya prabhava (virtue of their own nature), some drugs act by Guna prabhava (by virtue of their qualities), and some drugs act by Dravya Guna prabhava (virtue of their nature as well as qualities). After searching out of the literatures on Ankol, it was found that various parts (flower, flower bud, root, seed, bark etc.) of this plant have anti poisonous effects and in the treatment of various types of poisoning especially snake bite, spider bite, rat bite, dog bite, teeth poisoning, collyrium poisoning, etc. Various dosage forms of *A. salvifolium* have been used in different perspectives i.e. Kalka (paste) form, Curna (powder) form, Kwath (decoction) form, Swaras (juice) form. If the twig for cleansing teeth is poisoned then on local application of paste of Ankol root, curna and honey on inflamed area subsided the swelling and pain⁸. In case of poisoned collyrium, there is sliminess due to lachrymation, burning sensation, pain, blurring of vision then the flower of Ankol in the form of collyrium is used⁹. This plant is used as anti toxic either single as a whole or in the

combination of different others plant with similar properties. It is one of the content of Drakshadiagada which is used in the treatment of Mandali snake poisoning¹⁰. On the appearance of symptoms like headache, inflammatory swelling, hiccup in rat- bite and thirst, fever, stiffness of neck, swelling in back, anosmia, pricking abdominal pain in Chhachhunder (mole) bite, decoction of Ankol along with other emetic drugs is given to the victims¹¹. Since manifested Doshas are treated as toxic/harmful to our body and responsible for the generation of various diseases¹². In that condition Ankol is used as purificatory agent. Acharya Vagbhatta has suggested that when there is great increase of Doshas, then ant poisonous, purificatory therapy is given i.e. aggravated Kapha dosha should be removed by producing vomiting by making the patient drink the powder of

Ankol along with other drugs mixed with rice-wash¹³. In case of Aukhu visha (Mice bite poisoning), vomiting is produced to the victim by administering the decoction of Ankol which destroys the poisoning of mice¹⁴. Application of Ankol by both externally and internally is described. The root of the plant is made into paste form with goat's urine or cow' urine and used for drinking and external application which destroys the poisoning of varieties of rats¹⁵. In Alarka-visha (dog bite poisoning) Consumption of juice of Ankol root mixed with Ghrita, destroys the toxicity¹⁶ (Table 1). Acharya Sharangadhara has mentioned that the paste of Ankol root with rice-wash and honey act as ant poisonous agent¹⁷. Due to pungent and astringent in taste, penetrating action, hot in potency, demulcent and purgative in nature, Ankol is used as an anti poisonous drug¹⁸ (Table 2).

Table 1: Important therapeutic action of Ankol in Brihatrayee

S. N.	References	Parts used	Indications	Formulations
1	C.Ci.23/245	-	Gara Vishnashaka	-
2	S.Su.36/12	-	Vrana Shodhak Kashaya	Kashaya
3	S.Ci.7/17	Flower	Sharkara Shamanam	Churna
4	S.Ci.17/36	Seed, Flower bud	Nadi vrana Shodhan	Churna
5	S.Ci.19/14	-	Kaphaj Vriddhi nashaka	Tail
6	S.Ka.1/50	Root	Savish Datun cikitsa me Pratisaranartha	Churna
7	S.Ka.1/72	Flower	Savish Anjana Cikitsa	Anjana
8	S.Ka.5/77	Root	Mandali Sarpa Dansha Cikitsa	Agada (Curna)
9	S.Ka.7/15	-	Mushaka Dansha Cikitsa	Kashaya se Vaman
10	S.Ka.7/18	Seed	Chhachhunder Dansha Cikitsa	Curna
11	S.Ka.7/34	-	Mushaka Dansha Cikitsa	Kwath se Vaman
12	S. U.21/14	Fruit	Karna vedana har	Tail puran
13	A.H.Su.6/120	Fruit	Rakta pitta prasadak	Curna
14	A.H.Ci.11/27	Fruit	Sharkara patan	Curna
15	A.H.Ci.13/34	-	Kaphaj Vriddhi hara	Tail
16	A.H.U.6/20	Seed	Grahnomaad	Ghrit
17	A.H.U.37/75	Fruit	Vishanashak	Vamanarth
18	A.H.U.37/76	Root	Immediate poisoning	Vamanarth
19	A.H.U.38/21	Bark	Visha har	Kashaya
20	A.H.U.38/29	Root	Akhu Vishnashak	Lepa
21	A.H.U.38/30	Root	Visha Har	Panartha
22	A.H.U.38/36	Root	Alark vish cikitsa	Swaras

C.Ci.- Charak Chikitsa sthan, S.Su.-Sushruta samhita Sutra sthan, S.Ci.- Sushruta samhita Chikitsa sthan, S.Ka. - Sushruta samhita Kalpasthan, S. U.- Sushruta samhita Uttar tantra, A.H.Su.- Asthang Hridayam Sutra sthan, A.H.Ci.- Asthang Hridayam Chikitsa sthan, A.H.U.- Asthang Hridayam Uttar sthan

Table 2: Therapeutic importance of Ankol in different others Ayurvedic texts

S N	References	Parts used	Indications	Formulations
1	Sha.M.Kh.5/23	Root bark	Atisar & Visha nashak	Kalka
2	Bha.P.6/139-141	Root bark	Visha nashak	Curna
3	Bha.P. 2/96	Root	Atisar har	Vatak/ Gutika
4	Y.R. Purvardha (Atisar Ci)	Root	Atisar nashak	Kalka
5	Y.R. Uttarardha (Prameha Ci.)	Flower bud	Prameha har	Curna
6	Vrind Madhav 3/111-113	Root	Atisar cikitsa	Vatak/ Gutika
7	Vangsen 10/205	Root	Atisar cikitsa	Vatak/ Gutika
8	B.R. 7/98	Root	Atisar cikitsa	Vatak/ Gutika

Sha.M.Kh.- Sharangadhara Samhita Madhyam Khand, Bha.P- Bhava Prakash, Y.R.- Yoga Ratnakar, B.R.- Bhaishajya Ratnavali

Table 3: Classification of Ankol in different Nighantus

Sr. No.	Nighantu	Varga
1	Shankar Nighantu	-
2	Hridayadeepak	Dwinag varga
3	Priya Nighantu	Haritkyadi varga
4	Saraswati Nighantu	Mahavriksha varga
5	Dhanvantari Nighantu	Guduchyadi varga
6	Bhavaprakash Nighantu	Guduchyadi varga
7	Shodhala Nighantu	Guduchyadi varga
8	Raj Nighantu	Prabhadradi varga
9	Kaideva Nighantu	Aushadhi varga
10	Saushruta Nighantu	-
11	Astanga Nighantu	-

Table 4: Varga, Synonyms and Pharmacodynamic properties of Ankol in different Nighantus

S.N.	Nighantu	Synonyms	Rasa	Guna	Virya	Vipaka	Karma
1	¹⁹ Shankar Nighantu	-	-	-	-	-	-
2	²⁰ Hridaya Deepak	-	-	-	-	-	Vata Pittaghna Kapka Pittaghna
3	²¹ Priya Nighantu	Ankot, Deergha keel, Talakotak	Katu, Tikta	Tikshna	Ushna	-	Rechan
4	²² Saraswati Nighantu	Snehabeej, Peetasar, Kokal, Ganghapushp, Gudpatrika	-	-	-	-	-
5	²³ Dhanvantari Nighantu	Rechi, Deerghakeelak, Peetsar, Tamrapushpa, Nikochaka	-	Snigdha, Tikshna	Ushna	Mridu	Vataghna, Kukur-Akhu-Jantu visha nashaka, Parad shodhanartha
6	²⁴ Bhavaprakash Nighantu	Deerghakol, Nikochaka	Katu, Kashaya	Snigdha, Tikshna	Ushna	Laghu	Krimi, Shula, Shotha, Mushak, Sarpa Visha, Visharpa, Grahabadha nashaka,
7	²⁵ Shodhala Nighantu	Rechi, Deerghakeelak, Peetsar, Tamrapushpa, Nikochaka, Kotar, Mallika	-	-	-	-	Visha-Shopha-Shwas har, Rechak- grahi, KP har
8	²⁶ Raj Nighantu	Gudpatra,, Guptasneha, Peetsar, Madan, Tamraphala, Keel, Ganghpusha, Vigyan-tail-garbha	Katu	Snigdha	-	-	Lutavisha, KP har, Rechaka
9	²⁷ Kaideva Nighantu	Guptasneha, Peetsar, Ganghpusha, Rechi, Nikochak, Deerghkeelak, Bhusita, Rudmallika	Tikta	Tikshna	Ushna	Mridu	Vaman-rechan, Visarpa-Kukur-Akhu visha nashak, Shula-shopha-graha nashak
10	²⁸ Soushruta Nighantu	Kirilla, Surat, Ganghpusha, Rechi, Tamrapushpa, Peetsar Deerghkeelak	-	-	-	-	-
11	²⁹ Astanga Nighantu	Peetsar, Nikochak, Girikola	-	-	-	-	-

RECENT PERSPECTIVE ON ANKOL

Although various parts of *A. salvifolium* have been evaluated for its diverse medicinal properties as laxative, antiepileptic activity³⁰, astringent, antiulcer³¹, pungent, purgative, anthelmintic³², emetic, antiprotozoa, hypoglycemic^{33, 34}, skin diseases like leprosy, scabies^{35, 36} and as contraceptives for pigs and cattle rearing by the tribes in the Malayalies^{37, 38, 39}, helicobactericidal activity⁴⁰ even though the plant has shown excellent result against poison, insect and toxins. A mixture of mature fruits of *A. salvifolium* with honey and sweet flag (*Acorus calamus* L.) are used to manage pests on agricultural crops⁴¹. Root barks of *A. salvifolium* externally used for as an antidote against snake/ scorpion⁴², rabbits, rats, bite and dogs. Phytochemical and anti-inflammatory evaluation of *A. salvifolium* root extract has been done by Yesupadam *et al*⁴³ in 2011.

DISCUSSION

23rd Chapter of Charaka Chikitsa sthana is entitled as Visha-chikitsa itself. It deals with symptoms and Ayurvedic treatment of poisoning due to snake bite, scorpion bite, food poisoning etc. In our Ancient Ayurvedic texts, Acharyas have described in a very elaborative way to how to manage a case of poisoning. Regarding that they explained a general principle of management of poisoning in the form of Vishavega manifestation (aggravation and alleviation of a poison). Different stages of two types of poison manifestation i.e. Sthavara-visha (inanimate poison) vega and Jangama-visha

(animate poison) vega and their management accordingly are explained concurrently in a very impressive way by Acharya Charaka⁴⁴. But Sushruta samhita, Ashtang Sangraha and Ashtang Hridaya have described Sthavara-visha-vega with its manifestation and treatment at one place and Jangama-visha-vega its manifestation and treatment in Sarpa-visha (snake poison) at another place⁴⁵. Root bark of *A. salvifolium* is reported to contain alangine A and alangine B, alanginine, ankoline, emetine, cephaeline, alangicine, stigmasterol and β -sitosterol etc. Out of these chemical constituents present in Ankol as alangine- A and alangine- B⁴⁶, emetine, cephaeline, and β -sitosterol⁴⁷ have been assessed for the ant poisonous activity and antidote for cobra- bite poisoning⁴⁸. The methanol extract of *Alangium salvifolium* flowers, containing steroids and flavonoids, showed good antibacterial activity against both gram positive and gram negative bacteria. Seed alkaloids include N-methylcephaeline, emetine, cephaeline and psychotrine which have anti toxic property⁴⁷ and in accidental poisoning⁴⁹. *Emetine*: the extract caused vomiting in many patients and also used as anti - amoebic, psychotrine as antiplasmodial activities^{50, 51}. Stigma of this plant contents myristic acid, E-cis-fused neohopane derivatives, alangidiol and its isomer; N-benzoyl-L-Ph-alaninol etc. Which are may be responsible for therapeutic and anti poisonous activity of the *A. salvifolium*⁵².

CONCLUSION

Chemical constituents give the strong evidence to this work as Alangine A, & Alangine B as antihelmintic, Pyrexia and antidote for cobra- bite poisoning. Cephaeline, in the form of

syrup of ipecac was once commonly recommended as an emergency treatment for accidental poisoning. In human beings, the effects of poisons are manifested in 8 different stages. Thus, details of 2 categories of poisons along the therapeutic effect of *Alangium salvifolium* to cure the ailments caused by these poisons are described here by different Ayurvedic scriptures ie. Brihatrayee, Kosha and Nighantus.

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