

ATIVISHA AS A DRUG OF CHOICE IN PEDIATRIC AILMENTS

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ABSTRACT

Ayurveda aims at prolongation of healthy life in terms of mental, physical, spiritual and social health and prevention of diseases hence, maintaining the senility of a person. When we talk of *Ayurveda*, we need to give credit to those innumerable plants and herbs in nature's lap used for medicinal reasons that are serving its very purpose. Phytomedicine had its genesis in India from time immemorial. Today, a number of plants are used in different Indian system of medicine. The conventional medicine is also using a lot of plant derived chemicals as therapeutic agents but there is a need to further evaluate different uses of these medicinal plants which are concealed in *Ayurveda* treatise. The aim of this study is to collect and evaluate different medicinal properties of *Ativisha* with special reference to its importance in childhood ailments. It is a highly valuable drug and is mentioned in different Ayurvedic literatures like *Brihadtrayee*, *Laghutrayee*, *Chikitsasgrantha* and *Nighantus*. *Ativisha* is also referred as "*Sishubhaishjaya*" in classical texts, which means it is best remedy for children.

KEYWORDS: Ativisha, Brihadtrayee, Sishubhaishajaya, Aconitum heterophyllum.**INTRODUCTION**

Aconitum which is also recognized as aconite is a genus consisted of 250 species of angiosperm plants. These perennial herbs occur in mountainous parts of the Northern Hemisphere. They grow in the moisture-retentive but well-drained soils of mountain meadows.

Most species show lethal nature and should be handled with care. Amongst various species of genus *Aconitum*, *Aconitum heterophyllum* also known as "*Atees*", is widely distributed in the alpine and sub- alpine region of Himalayas, showing essential medicinal assets.

**Morphological Characters**

Roots are biennial, paired and have tubers. They are whitish or grey in color. Stems are known to be erect, simple and branched. They are 15–20 cm high, glabrous below and finely crisp pubescent in the upper part. Leaves are known to be heteromorphous and glabrous

possessing long petioles, and blades are orbicularcordate or ovate-cordate in outline with a usually narrow sinus (1–1.5 cm deep) and are usually 5- lobed.

Classification Kingdom-Plantae Order-Ranunculales Family –Ranunculaceae Genus – Aconitum Botanical name – *Aconitum heterophyllum* Wall. Distribution – Himalayan region Common name – *Ativisha*, *Ativish*, *Atees* herb, *Atees* plant

Name in other Languages

Sanskrit – *Ativisha*, *Shukalkanda*, *Bhangura*, *Ghunvallahba*, *Kashmira*, *Sishubhaishajaya*
Gujarati – *Ativish* Telugu – *Atibasha* Marathi – *Ativish*

Ayurvedic Properties Rasa – *Tikta*, *Katu* Guna – *Laghu*, *Ruksha* Virya – *Ushna*
Vipaka – *Katu*
Dosha karma – *Pacifies Vata*, *Pitta* and *Kaphadosha*

Synonyms

Ativisha, *Shuklakanda*, *Ghunavallahba*, *Aruna*, *Shringi*, *Vishwa*, *Sishubhaishajaya*, *Bhangura*, *Mahaushadha*, *Prativisha*, *Kashmira*, *Atisaraghni*, *Shofapaha*.

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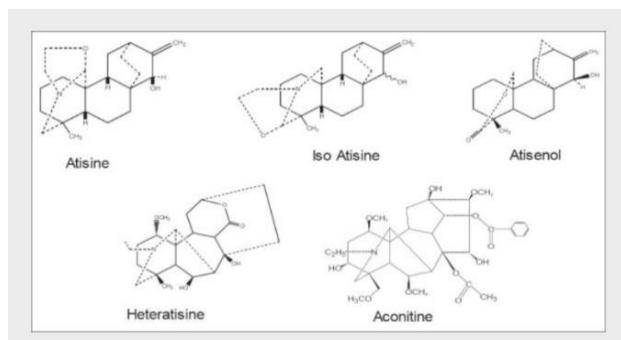
1. Roots 2. Tubers

Description in Classical text

Acharya Charak has included *ativisha* in *lekhaniya mahakashaya*, *arshoghna mahakashaya*, *tiktaskanda*. It is the best herb for digestion, carminative action, absorbing and have *tridosha* balancing properties. *Sushruta* has mentioned in *pippalyadigana*, *vachadigana*, *mustadigana* and *shiro virechanadravya*. In *Ashtang Hridaya*, the drug *ativisha* is mentioned in *vatsakadigana* under the name of *ghunapriya* (A.H.Su.15/33), *Vachaharidradigana* (A.H.Su.15/35), *Mustadigana* (A.H.Su.15/40) and stated as *Tiktaskandhasdravya*.

According to *varnabheda*, in *Raja Nighantu* its three types are mentioned as *Shukla*, *Krishna* and *Arunavarna*, all having same *rasa*, *veerya* and *vipaka*. *Atees* is having *katu* and *tikta* *rasa* and is *ushna* and pacifies *kapha* and *pitjanya* disorders and fever. It is also effective in *Amatisaar* and *kasa* (cough), disorders related to poison (*visha-vikaar*) and has anti-emetic property.

KaidevNighantu – *Ativisha* is having *ushna*, *laghu* properties with *tikta rasa* and has carminative and digestive actions. It pacifies disorders related to *kapha* and *pitta doshas*, effective in diarrheal disorders related to toxins (*visha-vikaar*), cough, vomiting and in worm infestations.



Chemical Constituents

- Atidine
- Atisenol
- Atisine
- Banzolheteratisine
- F-Dihydroatisine
- Heteratisine
- Heterophylline

Pharmacology

As per the Ayurvedic pharmacology, *ativisha* has *tikta* (bitter) and *katu* (pungent) taste, *laghu* (light) and *ruksha* (dry) properties, *ushnaveerya* (hot potency) and *katuvipaka* (attains pungency after digestion). In terms of actions, it is *kapha-pittahara* (reduces *kapha* and *pitta doshas*), *dipana* (increases digestive fire), *pachana* (digests undigested material), *grahi* (prevents water loss from the body), *shothahara* (anti-inflammatory), *vishaghana* (anti poisonous), *krimihar* (anthelmintic), *arshoghna* (antihemorrhoid), *jwarahara* (anti-pyretic),

Kasahara (anti-tussive) and *atisaraghna* (anti-diarrheal).

Anti-Bacterial Activity: The new aconitine type norditerpenoid alkaloids 6dehydroacetylsepaconitine and 13hydroxylappaconitine, isolated from the tubers of *A. heterophyllum* along with the known alkaloids lycocotinine, delphatine and lappaconitine, were screened for antibacterial activity against different bacterial strains. They showed antibacterial activity against gram negative (diarrhea causing) bacteria *Escherichia coli*, *Shigella flexineri*, *Pseudomonas aeruginosa* and *Salmonella typhi*. This report strengthens the prescription of *Ativisha* as *Krimihara* (antimicrobial/anthelmintic). These tests were however not carried out using the plant extracts.

Anti-Inflammatory and Anti-Pyretic Action: In order to assess the anti-inflammatory activity of *A. heterophyllum*, Verma et al. employed the widely used cotton pellet induced granuloma method. Their investigations showed that *A. heterophyllum* tuber (ethanolic extract) has significant anti-inflammatory activity, thereby providing scientific evidence for a traditional medicinal claim as *shotha/shophahara karma* (anti-inflammatory action). The antipyretic effects of roots of *A. heterophyllum* in the form of aqueous, chloroform and hexane extracts were examined using the method of yeast induced pyrexia, with aspirin as a standard antipyretic agent for comparison. These studies, by *Ikrum*, showed that the extracts were nontoxic (up to 1.6 g/kg) and had no significant antipyretic activity. However, in Ayurveda *A. heterophyllum* is administered as a powder (*churna*) and *kashaya* (decoction) for controlling fever.

Immuno-Modulatory Action: The immunomodulatory activity of ethanolic extract of *A. heterophyllum* tubers along with other medicines of the *Ayurveda* and *Unani* systems of medicine were investigated on delayed type hypersensitivity (DTH), humoral responses to sheep red blood cells, skin allograft rejection and phagocytic activity of the reticuloendothelial system in mice. It was found that the extract appeared to enhance the phagocytic function and to inhibit the humoral component of the immune system. The results obtained from these preliminary studies show that, *A. heterophyllum* has immunomodulatory activity, which could possibly lead to new immunomodulating agents of herbal origin.

Action on Nervous System: Hamet showed that, *A. heterophyllum* has the ability to make the sympathetic nervous system more sensitive to physiological stimuli. He found that while *atisine* had a hypotensive effect at every tested dose, the plant extract as a whole, showed hypertensive properties. Hypertension produced by high doses of aqueous extract was attributed to the excitement of the sympathetic nervous system. Two new diterpenoid alkaloids heterophyllinines A and B, isolated from the roots of *A. heterophyllum* were about 13 times more selective in inhibiting the enzyme butyrylcholinesterase

than acetylcholinesterase. These enzymes are involved in the transmission of nerve impulses.

Anti-Hyperlipidemic Activity: The methanolic extract of tubers of *A. heterophyllum* had a hypolipidemic effect on diet induced obese rats. It was observed that the pharmacological effect was due to two factors;

(i) Inhibition of Hydroxymethylglutarate Coenzyme A reductase (HMGR) and (ii) activation of Lecithincholesterol acyltransferase. This resulted in lowering of total cholesterol, lowdensity lipoprotein cholesterol (LDLc), triglycerides and apolipoprotein B in blood serum, decrease in intestinal fat absorption and increase of high density lipoprotein cholesterol (HDLc) and apolipoprotein A, supporting the classification of *ativisha* as a *lekhaneya* (scrapping) agent. It is worth mentioning here that, two common classes of compounds used in modern medicine to control hyperlipidemia are statins and fibrates. The former act on HMGR and the latter regulate HDLLDL ratios. *A. heterophyllum* is active at both levels and hence could prove to be a valuable anti hyperlipidemic agent.

Special use in pediatrics ailments: The drug holds a special position in Kaumarbhritya specialty, it is also referred as “*Sishubhaishjaya*” (best remedy for children) due to its common use in treatment of various diseases in children like fevers, diarrhea, indigestion, inflammation, helminthiasis and hyperlipidemia. *Sudarshana churna*, *Balchaturbhadra churna*, *Rasnerandadi kwatha* and *Panchatiktakaguggulu ghrita* are some of the popular multi-drug formulations used in *kaumarbhritya* in which *ativisha* is one of the main ingredients.

Ativisha happens to be an important drug both individually and as a part of some essential preparations covering a wide array of common pediatric ailments.

मधुनाऽतिविषाशृङ्गीपिपलीलेहयेच्छिशुम् ।

एकां वाऽतिविषां कासज्वरच्छर्दिरुपद्रुतम् ॥ (अ.ह.उ.2:57)

Acc to this verse *ativisha*, *kakrashringi* and *pippali* should be powdered together and given with honey for licking in vomiting or *ativisha* alone can also be given to a child having cough, fever and vomiting.

Balchaturbhadraavleha

वनकृष्णाऽरुणाशृङ्गीचूर्णं क्षौद्रेण संयुतम् ।

शिशोर्ज्वरातिसारघ्नं कासं श्वासं वमि हरेत् ॥ (भा.प्र.म.ख. 71:151)

This *avleha* having *musta*, *pippali*, *ativisha* and *kakrashringi* as its main constituents. The powdered form of this *avleha* is given with honey for licking to the children suffering from fever, diarrhea, cough, dyspnea and vomiting.

In the treatment of Diarrhea

नागरातिविषामुस्ताबालकेन्द्रयवैः शृतम् ।

कुमारं पाययेत् प्रायः सर्वातिसारनाशनम् ॥ (चक्र.बा.रो. 64 पृ.396)

Decoction made of *shunthi*, *ativisha*, *musta*, *sugandhabala* and *indrayava* is best for all types of *Atisaar*(diarrhea) in children.

Balchaturbhadrachurna

घनकृष्णारुणाशृङ्गीचूर्णं क्षौद्रेण संयुतम् ।

शिशोर्ज्वरातिसारघ्नं श्वासकासवमीहरम् ॥ (भै र 71:39)

It is a most common used classical formulation for a number of childhood diseases, having ingredients *nagarmotha*, *pippali*, *ativisha* and *kakrashringi*, given with honey to manage fever, diarrhea, or fever along with diarrhea, *kasa* (cough) and *swasa* (dyspnea) and vomiting in children.

In the treatment of Sushka Kasa (dry cough)

पौष्करातिविषाशृङ्गीमागधीधन्वयासकैः ।

कृतं चूर्णं तु सक्षौद्रं शिशुनां पंचकासजित् ॥ (यो.र.बा.चि.पृ.442)

Pushkarmoola, *Ativisha*, *Kakrashringi*, *Pippali* and *Yavasa* all taken in equal quantities and given in powdered form with honey to children suffering from five types of *kasa* mentioned in classical texts.

मुस्तकातिविषावासाकणाशृङ्गीरसं लिहन् ।

मधुना मुच्युते बालः कासैः पंचछिरुच्छितैः ॥ (यो.र.बा.चि.पृ 442)

Nagarmotha, *ativisha*, *vasa*, *pippali* and *kakrashringi* all taken in equal quantities and made into a decoction or *rasa* and after cooling it, honey is added and given. It relieves all five types of *kasa* in children.

In the treatment of Kasa and Swasa

पौष्करातिविषाशृङ्गीमागधीधन्वयासकैः ।

कृतंचूर्णतु सक्षौद्रशिशुनां श्वासकासजित् ॥ (रावणकृ.कु.त.पृ.154)

Equal quantities of powdered form of *pushkarmoola*, *ativisha*, *karkatshringi*, *magadhi*, *dhaniya* and *yavasa*, given with honey relieves all types of *swasa* and *kasa*.

In the treatment of Ksheeralasak

माद्रीपाठातिक्ताघनामयान् ॥ (अ.ह.उ. 2:23–24)

Decoction made of *ativisha*, *patha*, *kutaki*, *musta* and *kutha* is used as a *shaman chikitsa* in treatment of *ksheeralsaka* (gastroenteritis) in children.

In dhatri ksheer dosha chikitsa

Apart from that, in the diseases occurring in children from having vitiated mother's milk the treatment that is mentioned in texts, involving *shodhana* of breast milk, for that, *kwatha* made from *musta*, *patha*, *ativisha*, *kustha* and *kutaki* is also mentioned by Acharya *Vagbhatta* as :-
तत्र धात्री बालं च पूर्वमेवाशु वरमयेत् । विहितससर्गयोश्च
मुस्तापाठातिविषाकुष्ठकटुकानां क्वाथं पानाय दद्यात् ॥ (अ.सं.उ. 2:20)

CONCLUSION

Ativisha is highly recommended and proved to be a milestone drug in many diseases of children. It is a keen stimulant to digestive system as an appetizer, digestant and astringent. It works well in digestive disorders like anorexia, dyspepsia, piles, diarrhea, worms and vomiting. Talking about the respiratory disorders commonly found in children like dry cough and dyspnea, *ativisha* alone and in combination with other drugs has proved to be a miraculous remedy. Due to its widespread use in respiratory disorders, digestive disorders, actions on nervous system, having anti-pyretic, anti-bacterial, anti-helminthic actions and immune-modulating traits it is surely a drug of great interest in pediatric ailments well deserving the title of *shishubhaishijya*. Hence, owing to its multi-tasking qualities and a multi-disciplinary medical approach especially in the field of *Kaumarbhritya*, we can very well entitle it as “a drug of choice”.

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