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Exploring the pharmacological efficacy of Ativisha *(Aconitum heterophyllum)* in traditional and modern medicine

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Abstract

This critical review investigates the therapeutic significance of *Ativisha* (*Aconitum heterophyllum* Wall ex Royle) as documented in Ayurvedic classical texts and explores its contemporary relevance. *Ativisha* has long been recognized in Ayurveda for its potent pharmacological properties, particularly in the treatment of digestive disorders, fevers, and respiratory ailments. This review provides an in-depth analysis of *Ativisha*'s mentions in key Ayurvedic scriptures, such as the *Charaka Samhita* and *Sushruta Samhita*, focusing on its pharmacodynamics, *guna* (qualities), *karma* (actions), and *rasayana* (rejuvenative) benefits. Additionally, the paper highlights its cultural significance and therapeutic uses in traditional medicine.

In the Methods section, a comprehensive literature review was conducted, examining classical Ayurvedic texts and contemporary scientific studies to evaluate the pharmacological actions of *Ativisha*. Results from these sources reveal its efficacy as an antipyretic, anti-inflammatory, and digestive stimulant. However, safety concerns regarding its toxic alkaloid content necessitate further scientific scrutiny.

The Discussion emphasizes the need for integrating Ayurvedic wisdom with modern research methodologies to validate the therapeutic efficacy and safety of *Ativisha*. By aligning traditional knowledge with evidence-based approaches, this review advocates for the inclusion of *Ativisha* in contemporary healthcare while promoting a balanced and holistic approach to wellness.

Key words : *Ativisha,* Classical texts, *Nighantus,* Therapeutic applications

Ativisha (*Aconitum heterophyllum* Wall.), a well-known medicinal herb in Ayurveda, has been valued for centuries due to its diverse therapeutic benefits. This

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perennial plant, predominantly found in the high-altitude regions of the Himalayas, has played a significant role not only in medicine but also in traditional healing practices across various cultures. Classical Ayurvedic texts, such as the Charaka Samhita and Sushruta Samhita, have extensively described the medicinal uses of Ativisha, particularly in the treatment of conditions like fever, digestive disorders, and respiratory illnesses.

Despite its historical prominence, modern scientific exploration of Ativisha has been relatively sparse compared to other medicinal herbs. This review aims to critically analyze references to Ativisha in classical Ayurvedic literature and assess its relevance in contemporary healthcare. By investigating its pharmacological actions and safety considerations, this discussion emphasizes the potential of Ativisha as a valuable component of modern herbal medicine. Ultimately, this article advocates for renewed interest in Ativisha, promoting its integration into modern healthcare systems to support a more holistic approach to wellness.

Synonyms :

Aconitum heterophyllum Wall ex. Royle, commonly known as Ativisha, is recognized for its ability to counteract the effects of poisons, despite being part of a toxic genus. It is referred to as Shuklakanda because of its white tuber. The term Ghunavallabha highlights its susceptibility to pests, while Aruna denotes the reddish-brown hue of its rhizome. Shringi refers to the horn-like projections present on the rhizome. Known as Vishwa, it is characterized by its capacity to penetrate all body parts, attributed to its Sukshma guna. Shishubhaishajya emphasizes its frequent use as a treatment for children's ailments. Bhangura indicates its fragile rhizome, and Mahaushadha signifies its effectiveness in addressing a variety of health issues. Prativisha serves as an antidote for numerous poisons. The name Kashmira reflects its growth in the high-altitude regions, such as Kashmir. Atisaraghni underscores its role in managing diarrhea, while Shofapaha indicates its ability to alleviate swelling or edema.[12,15]

Table-1. Synonyms of Ativisha in Brihatrayee and Nighantus Therapeutic

S. no.	Synonyms	C. S.	Su. S.	A. H.	So. Ni.	A. Ni.	Dh. Ni.	Bh. Ni.	Ra. Ni	Rv. Ni.	Mh. Ni.	P. Ni
1.	Ativisha	+	+	+	+	+	+	+	+	-	+	+
2.	Ardra	-	-	-	-	-	+	-	-	-	-	-
3.	Aruna	-	-	-	-	-	-	+	+	-	+	+
4.	Atisarghni	-	-	-	-	-	+	-	-	-	-	-
5.	Balarognashini	-	-	-	-	-	+	-	-	-	-	-
6.	Bhangura	-	-	-	-	+	+	+	+	-	+	-
7.	Chandri	-	-	-	-	-	-	-	+	-	-	-
8.	Ghuna	-	-	-	-	-	-	-	-	-	-	-
9.	Ghuneshta	-	-	+	-	-	-	-	-	-	-	-
10.	Ghunpriya	-	-	+	-	+	+	-	-	-	-	-
11.	Ghunvallabha	-	-	+	+	-	-	+	-	-	+	-

12.	Kashaya	-	-	-	-	-	-	-	-	-	-	-
13.	Kashmira	-	-	-	-	-	-	-	-	-	-	-
14.	Krishna	-	-	-	-	-	-	-	-	-	-	-
15.	Madhyadeshaa	-	-	-	-	-	-	-	-	-	-	-
16.	Madri	-	-	+	-	+	-	-	-	-	-	-
17.	Mahoushadha	-	-	+	-	-	-	-	-	-	-	-
18.	Mrudvi	-	-	-	-	-	-	-	-	-	-	-
19.	Pittavallabha	-	-	-	-	-	+	-	-	-	-	-
20.	Prativisha	-	-	-	-	+	+	+	+	-	+	+
21.	Shishubhaisha	-	-	-	-	-	-	-	-	-	-	-
22.	Shita	-	-	-	-	-	-	-	-	-	-	-
23.	Shophapaha	-	-	-	-	-	-	-	-	-	-	-
24.	Shrungi	-	-	-	-	-	+	+	+	-	+	-
25.	Shrungika	-	-	-	+	-	-	-	-	-	-	-
26.	Shuklakanda	-	-	-	-	+	+	+	-	-	+	+
27.	Shveta	-	-	-	-	+	+	-	-	-	-	-
28.	Shvetakanda	-	-	-	-	-	-	-	+	-	-	-
29.	Shvetraktavisa	-	-	-	-	+	-	-	-	-	-	-
30.	Shvetavacha	-	-	-	-	-	-	-	+	-	-	-
31.	Shvetavisha	-	-	-	-	-	-	-	-	-	-	-
32.	Shyamakanda	-	-	-	-	-	+	-	+	-	-	-
33.	Sugandha	-	-	-	-	-	-	-	-	-	-	-
34.	Upvisha	-	-	-	+	-	+	+	+	-	+	-
35.	Upvishanika	-	-	-	-	-	-	-	-	-	-	-
36.	Upavishhvya	-	-	-	-	-	-	-	-	-	-	-
37.	Vira	-	-	-	-	-	-	-	+	-	-	-
38.	Virupa	-	-	-	-	-	+	-	+	-	-	-
39.	Visha	-	-	+	-	-	+	+	+	-	+	-
40.	Vishada	-	-	-	-	-	+	-	-	-	-	-

Chemical constituents :

Aconitum heterophyllum is rich in a variety of bioactive compounds, including alkaloids such as atisine, atidine, histisine, and aconitine, as well as others like mesaconitine, jesaconitine, and hypaconitine found in its roots. The plant also contains β-sitosterol, β-carotene, and isoatisine in its rhizome. Additionally, its leaves, roots, and stems contain a range of phytochemicals, including carbohydrates, proteins, amino acids, saponins, glycosides, quinones, flavonoids, and terpenoids.[3]

Morphological characters :

Ativisha is a perennial herb that can grow up to 0.5-1 meters tall. It features biennial roots that are paired and possess tubers. These tubers are cylindrical or conical, measuring approximately 3-6 cm in length, and have few root fibers and a thin bark. The stems

Fig. 1. Ativisha (Aconitum heterophyllum Wall.)

are erect, simple, and branched, reaching heights of 15-20 cm. They are glabrous at the base but finely pubescent in the upper portion. The leaves measure 5-10 cm, are ovate with acute, sharply toothed edges, and have long petioles; the upper leaves are amplexic. The flowers, which bloom in panicles, range in color from azure to aqua, often with purplish veins. The flowering and fruiting period for Ativisha spans from May to October.[4]

Pharmacodynamics of Ativisha :[5]

Rasa- Tikta (bitter) and Katu (pungent) taste
Guna- Laghu (light) and Ruksha (dry)
Virya- Ushna Veerya (hot potency)
Vipak- Katu Vipaka (attains pungency after digestion).

Therapeutic Ayurvedic Applications of Ativisha According to Acharya Charaka, Acharya Sushruta & Lexicons (Nighantu):

In classical texts like Charak Samhita, the root of Ativisha is recommended for Shirovirechana (C.S. Vi. 8/151)[13]. It is classified among the foremost drugs (Agrya Dravyas) for its properties as Deepana, Pachana, Sangrahaka, and Sarvadoshahara dravya (C.S.Su.25/39)[14]. Acharya Sushruta has also cited Ativisha as a vital ingredient in the formulation of strong alkali preparations (Pakya or Teekshna kshara)[16]. The effectiveness of *Aconitum heterophyllum* Wall ex. Royle has been validated by various experimental and clinical investigations. This article aims to shed light on the Ayurvedic pharmacological properties and diverse therapeutic uses of Ativisha as documented in key Ayurvedic texts and lexicons, detailing both its individual and compound formulations along with their relevance to various health issues. Ativisha is widely recognized in various lexicons for its therapeutic applications, particularly in managing diarrhea and cough, as noted by almost all Nighantus, with the exception of Sodhala, Madhava Dravyaguna, and Madanpala Nighantu. It is also indicated for pediatric conditions in texts like Dhanvantri, Sodhala, and Priya Nighantu, as well as for fever management in Dhanvantri, Raja, and Priya Nighantu. Furthermore, it is acknowledged for its effectiveness in mitigating the effects of poisons, as referenced in Dhanvantri, Kaiyedeva,

Bhav Prakash, and Raja Nighantu. Various lexicons describe Ativisha's qualities as an appetizer and a rejuvenating agent. The roots are characterized by their acrid, bitter, thermogenic, expectorant, stomachic, digestive, anti-periodic, tonic, analgesic, anti- inflammatory, aphrodisiac, and astringent properties. The dried root acts as a febrifuge and tonic, making it useful for treating conditions such as diarrhea, dysentery, malarial fever, vomiting, helminthiasis, hemorrhoids, hemorrhages, and general weakness. Its therapeutic efficacy, especially for children, is well-established; however, many additional uses of this significant medicinal plant are noted in major Ayurvedic texts, yet there is a lack of experimental and clinical studies. This highlights the need for a comprehensive exploration of this herb in ancient Ayurvedic literature to uncover its broader pharmacological potential.[2,6,8-11]

Table-2. Therapeutic Ayurvedic Yoga of Ativisha as per Acharya Charaka

Sr. no.	Reference in Charak Samhita	Indication	Yoga / Formulation
1.	C.S.Su. 2/22	Amatisara	Peya (Gruel)
2.	C.S.Su. 23/19	Ati santarpana janya roga	Vyoshadi Saktu
3.	C.S.Chi.3/204	Jwara	Murvadi Kwath
4.	C.S.Chi.3/219	Jeerna jwara	Pipplyadi Ghrita
5.	C.S.Chi. 6/38 C.S	Kaphaj Prameha	Trikantakadi Ghrita
6.	C.S.Chi. 6/42	Kaphaj and Pittaj Prameha	Madhvasava
7.	C.S.Chi. 7/68	Supti lakshana in Kushtha	Triphaladi Churna
8.	C.S.Chi.7/132	Pittaj Kushtha	Priyangwadi Aalepa
9.	C.S.Chi.11/16	Bhinna vitta (Diarrhoea) due to Uro shatta	no. Lakshadi Yoga
10.	C.S.Chi.12/44	Shvyathu	Kshar gutika
11.	C.S.Chi. 13/159	Udara roga	Pipplyadi Kshara
12.	C.S.Chi. 14/187	Raktarsha	Ativishadi Yoga
13.	C.S.Chi. 14/230	Arsha and Arsha janya shula	Hriberadi ghrita
14.	C.S.Chi. 14/236	Arsha	Sunisannaka Changeri Ghrita
15.	C.S.Chi.15/98	Aama pachana in Grahani	Naagaradi Kwath
16.	C.S.Chi.15/99	Varchasya aama and Shula in Grahani	Devdarvadi Yoga
17.	C.S.Chi. 15/101	Chhardi, Arshogranthi and Shula	Kalingadi Churna
18.	C.S.Chi. 15/105	Grahani associated with Aama	Ativishadi Kwatha or Churna
19.	C.S.Chi. 15/129	Pittaj Grahani	Nagaradhya Churna
20.	C.S.Chi. 15/138	Hridroga, Pandu, Grahani, Gulma	Kiratadhya Churna
21.	C.S.Chi. 15/165	Hridaroga, Pandu, Grahani, Kushtha, Arsha	Madhvarishta
22.	C.S.Chi. 15/173	Visha, Gara visha (Grahani Chikitsa)	Pipplyadi Leha

23.	C.S.Chi. 15/186	Grahani dosha, Shotha, Arsha, Pandu	Vatsakadi Kshara
24.	C.S.Chi. 16/61	Kasa, Shwasa, Jwara, Daha, Pandu, Arochak, Gulma, Aanaha, Aamvata, Raktapitta	Vishaladi Phanta
25.	C.S.Chi. 16/122	Dvesha for Mritika in Mrid bakshana janya Pandu	Vidangadi bhavita Mritika
26.	C.S.Chi. 18/115	Kaphaj kasa, Kantha roga, Shwasa, Hikka, Jwara, Mukha shotha	Nagaradi Kalka
27.	C.S.Chi.19/51	Paittik Atisara	Ativishadi Kalka
28.	C.S.Chi. 19/105	Kaphaj Atisara	Kushthadi Kwatha
29.	C.S.Chi. 19/108	Kaphaj Atisara	Rasanjanadi Leha
30.	C.S.Chi. 23/197	Raajimaan sarpa visha	Vyoshadi Leha
31.	C.S.Chi.26/21	Aanaha, Vimudha vata	Vachadi Churna
32.	C.S.Chi.26/97	Kaphaj Hrid roga	Katphaladi Yoga
33.	C.S.Chi.27/35	Urustambha	Murvadi Churna
34.	C.S.Chi.27/36	Urustambha	Swarnakshiryadi Churna
35.	C.S.Chi. 28/151	Vata vyadhi	Bala Tailam
36.	C.S.Chi. 30/91	Arsha, Rakta atisara, Bala dosha, Yoni dosha,Rajo dosha associated with Shweta, neela, peeta, shyaav, aruna sraava.	Pushyanuga Churna

Table-3. Therapeutic Ayurvedic Yoga of Ativisha as per Acharya Sushruta

Sr. no.	Reference in Sushruta Samhita	Indication	Yoga / Formulation
1.	Su.S.Su. 11/13	As an ingredient used for prativapa and all kshara sadhya vyadhi	Pakya or Tikshna kshara
2.	Su.S.Su. 44/36	Virechana	Sauviraka Kalpana
3.	Su.S.Chi. 4/4	Aamashya gata Vata	Shaddharana Yoga
4.	Su.S.Chi. 9/8	Kushtha, Vishma jwara, Raktapitta, Hridroga, Unmaad, Apasmaara, Gulma, Pidika, Asrigdar, Galganda, Shleepada, Paandu, Visarpa, Arsha, Shandya, Kandu.	Mahatiktaka Ghrita
5.	Su.S.Chi. 10/15	Sarva Kushtha, Smriti enhancer and Shata ayu.	Mishraka Sneha
6.	Su.S.Chi. 14/10	Udara roga	Chavyadi Ghrita
7.	Su.S.Chi.15/21	Mudha garbha	Krishnadi Yoga
8.	Su.S.Chi. 17/44	Stanya dushti	Bharangyadi Ghee

9.	Su.S.Chi. 18/48	Kaphaja Galganda	Upnaha (Poultice)
10.	Su.S.Chi. 19/34	Kaphaja Updansha	Rajnyadi Pralaepa
11.	Su.S.Chi. 22/53	Galashundika	Marichadi Lepa
12.	Su.S.Chi. 22/54	Galashundika	Vachadi Kawal Yoga
13.	Su.S.Chi. 22/74	Kaphaja Sarvasara(Asyapaka)	Ativishadi Churna
14.	Su.S.Chi. 23/12	Shotha	Vidangadi Churna
15.	Su.S.Chi. 37/15	Gridhrasi, Khanja, Kubja, Mutra roga, Udavarta, Alpa bala, Alpa agni	Chitrakadi Taila
16.	Su.S.Chi. 37/23	Shukra, agni, Bala vardhanam, Brimhana, Vata pitta shaamak, Gulma aanaha nashaka	Jivantyadi Taila
17.	Su.S.Chi. 37/23	Urdhvajatrugata roga	Jivantyadi Taila
18.	Su.S.Chi. 37/27	Daha, Asrigdhara, Visarpa, Vata shonita, Vidradhi, Pitta rakta jwara	Madhukadi Taila
19.	Su.S.Chi. 37/33	Stholya, Aalasya, Kandu, Diseases of Kapha	Triphaladi Taila
20.	Su.S.Chi. 37/39	Pleeha, Udavarta, Vatarakta, Gulma, Aanaha, Prameha, Sharkara, Arsha	Vidangadi Taila
21.	Su.S.Ka. 1/64	Nasya Dhuma Visha	Ativishadi Ghrita
22.	Su.S.Ka. 1/83	Visha nashaka	Sharkaradi Yoga
23.	Su.S.Ka. 3/17	Vishajusta Dhumadi	Vishodhita Dhuma
24.	Su.S.Ka. 6/3	Sharkara, Ashmari, Arsha, Vataja Gulma, Kasa, Shula, Ajeerna, Grahani, Bhakta dvesha, Shofa, Shvasa, Sarva Visha, Even defeats pride of all snakes headed by Takshaka	Kshara Agada
25.	Su.S.Ka. 6/18	Bhagna skanda, Vivritaaksha, Destroys poison of King of Snakes and even of Vasuki sarpa, Worn by Kings whichbestows them with brilliance	Maha sugandhi Agada
26.	Su.S.Ka. 7/39	Mushaka visha	Ativisha Kalka
27.	Su.S.U 24/35	Pratishyaya produced by all doshas	Rasanjanadi Taila
28.	Su.S.U 39/188	Kaphaja jwara	Haridradi Kwatha
29.	Su.S.U 39/190	Kaphaja jwara	Saarivadi Kwatha
30.	Su.S.U 39/218	Vishma jwara, Jeerna jwara, Shiras hula, Gulma, Udara roga, Halimaka, Kshaya, Kasa, Santapa, Parshava shula	Pipplyadi Ghrita
31.	Su.S.U 39/241	Vishama jwara	Pancha gavya Ghrita
32.	Su.S.U. 40/94	Atisara with Shula and Rakta	Rasanjanadi Churna

Table-4. Therapeutic utilization of Ativisha as per Lexicons (Nighantu)

Karma & Rogaghnata	Dhanwa-ntri Nighantu[18]	Sodhala Nighantu.[19]	Madanpala Nighantu.[20]	Bhavapra kash Nighantu.[21]	Raj Nighantu.[22]	Priya Nighantu.[23]
Aamatisara (Diarrhoea associated aama	+	-	-	-	+	-
Aama (Undigested food)	-	-	-	+	-	-
Atisara (Diarrhoea)	+	-	-	+	-	+
Bala roga (Paediatric complaints)	+	+	-	-	-	+
Chhardi (Vomiting)	+	-	-	-	+	+
Deepana (Digestive stimulant)	-	-	-	+	-	+
Graahi (Bowel binding)	-	+	-	-	-	-
Jwara (Fever)	+	-	-	-	+	+
Kasa (Cough)	+	-	-	+	+	+
Krimi (Worm infestation)	-	-	-	+	-	-
Pachana (Carminative)	-	+	-	+	-	+
Rasayana (Rejuvenator)	-	-	+	-	-	-
Shleshmaja Vikara	-	-	+	-	-	-
Shotha (Oedema)	-	+	+	-	-	-
Visha (Poisoning)	+	-	-	+	+	-

Ativisha (*Aconitum heterophyllum* Wall.) has been highly regarded in Ayurvedic medicine for its broad therapeutic applications, with references in classical texts like the *Charaka Samhita* and *Sushruta Samhita*. It is particularly effective in managing digestive disorders, fevers, and respiratory ailments, and its numerous synonyms in Ayurvedic literature highlight its medicinal importance.

Despite its historical prominence, modern research on *Ativisha* is limited, overshadowed by other well-studied herbs. Ancient texts describe its pharmacological profile—bitter and pungent tastes, hot potency (*ushna virya*)—suggesting a complex biochemical nature that warrants deeper investigation. The herb contains bioactive compounds, notably alkaloids and other phytochemicals, which likely contribute to its pharmacological actions, including anti-inflammatory, antipyretic, and digestive properties.

Notably, *Ativisha* has been used as an antidote for poisoning and in paediatric care, further emphasizing its therapeutic relevance. However, rigorous scientific validation is crucial to substantiate these traditional claims and ensure its safe and effective integration into modern healthcare practices. Future studies on its bioactive compounds and mechanisms of action could bridge the gap between Ayurvedic knowledge and contemporary medical research, unlocking the full potential of *Ativisha* in herbal medicine.[7]

This critical review underscores the multifaceted importance of Ativisha (*Aconitum heterophyllum*) within both classical Ayurvedic literature and contemporary health frameworks. Traditionally, *Ativisha* has been esteemed for its therapeutic versatility, effectively addressing a range of conditions, including digestive disorders, fevers, and respiratory ailments. Its cultural significance is particularly evident in high-altitude regions such as the Himalayas, where it serves as a cornerstone of traditional healing practices.

An examination of *Ativisha's* chemical constituents reveals a diverse profile of alkaloids and phytochemicals, which likely contribute to its pharmacological effects. This complexity necessitates further scientific investigation to substantiate its traditional applications and ensure safe usage. Although *Ativisha* is recognized for its potential antidotal properties against various poisons, concerns regarding its toxicity highlight the critical need for comprehensive safety assessments and the establishment of standardized dosages.

Moreover, *Ativisha's* efficacy in pediatric care signifies its relevance in family health practices. The integration of Ativisha into modern health paradigms could foster a holistic approach to wellness, merging time-honored Ayurvedic principles with contemporary therapeutic strategies. By revitalizing interest in *Ativisha,* we not only honor its Ayurvedic heritage but also pave the way for innovative applications in herbal medicine, ultimately enhancing overall health and well-being.

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