

REVIEW OF VATSANABHA AND ITS TOXICITY

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ABSTRACT

Ayurveda is the science of life that is widely practiced in India. It used medicine prepared from plants, animals and mineral origin. All the three sources of drugs can be divided under poisonous and nonpoisonous category. Vatsnabha (*Aconitum ferox*) is categorized under the sthavara visha (plant origin). It is the only Mahavisha which still identified and available. Even a strong poison can become an excellent medicine if administered properly; on the other hand even the most useful medicine act as a poison if not handled correctly. Vatsnabha is highly toxic in nature even then it is used as a medicine after purification and in therapeutic dose. In therapeutic doses it has capacity to treat many diseases therefore; it is used as an ingredient of various Ayurvedic formulations. Ayurveda proposes a traditional technique of shodhana (purification) to reduce the harmful effects associated with vatsnabha. The present review gives us opportunity to understand the toxic effects, medicinal importance, methods of purification, therapeutic dose antidotes medicolegal aspect of vatsnabha.

KEYWORDS: Vatsnabha, Visha, Shodhana, Toxicity, Management, Medicolegal Aspects etc.**INTRODUCTION**

A deciduous perennial plant, two to six feet high, 50 cms wide, belonging to family Ranunculaceae and growing in eastern temperate and sub-alpine regions of the Himalayas, eastwards of Uttarakhand, Nepal, Kashmir and Sikkim. All the parts of the plant are poisonous, the root being most potent. The root is mostly used for medicinal purpose. The dry root is conical tapering in shape, usually shriveled, and has longitudinal wrinkles. It is 5-10 cms long, 1-2 cms thick at the upper end, and dark brown externally. Freshly cut root is starchy and white in colour internally which changes to pink when exposed to air. It is odorless and a bit sweetish in taste.

Classification**(A) According to Ayurved**

- (1) Brhatrayee- Sthaavara-Vansaptija (vegetative)
 - (2) Rasatarangini & Nighaṅtukaar- Mahaavisha
- (B) According to Modern Medicine Cardiac Poison.

Vernacular Names

English name- Monk's hood, aconite, wolfsbane, blue rocket

Hindi name- Bachnag, meetha vish, meetha teliya.

Sanskrit name- Amrut

Bihari name- Dakara

Gujrati name- Basnag, bachnag Kanada name- Vatsanabhi

Punjabi name- Mohari, shyam mohari Telugu name- Nabhi Marathi name- Bachnag

Chemical Constituents

The concentration of aconite in the fresh plant is between 0.3% and 2.0% in tubers and 0.2% and 1.2% in the leaves. The highest concentration of aconite is found in the winter. The major alkaloids are aconitin(acetylbenzoyl-aconine), pseudoaconitine, bishaconitine, diacetyl pseudoaconitine, aconine, picraconine (benzoyl-aconine), and other alkaloids combined with aconitic acid. *Aconitum chasmanthum* is the main source of aconite. The chief of these active principles is aconitine which forms transparent, colorless, rhombic crystals, readily soluble in chloroform and benzene, less in ether and absolute alcohol and almost insoluble in water

Rasa Panchaka

Guna- Ruksha, Laghu, Vyavayi, Vikashi, Tikсна

Rasa- Madhur

Vipaka- Madhur

Virya- Usna

Karma- Kapna – Vatahara

Mechanism of Toxicity

The cardiotoxicity and neurotoxicity of aconitine and related alkaloids are due to their actions on the voltage-sensitive sodium channels of the cell membranes of excitable tissues, including the myocardium, nerves, and muscles. Aconitine increases the permeability of excitable membrane for sodium ions and prolong the sodium influx during the action potential as a consequence sensible nerve ending and motor endplates are first activated but later blocked.

Sign and Symptoms

According to Sushrutacharya- (1)Greeva stambha (neck stiffness) is the specific feature of vatsnabha poisoning. According to modern- Aconite and relative alkaloids found Aconitum species causes cardio toxicity, GIT Toxic Neurotoxicity.

GIT Manifestation

- Burning & Tingling sensation in lips, throat, mouth.
- Nausea, vomiting, abdominal pain and feeling Anesthesia supervene in the Upper GIT

Cardio Manifestation

- Pulse is slow, feeble irregular, fall in BP, Hypothermia.
- Hypotension and Cardiac Arrhythmia.

Neurological Manifestation

- Vertigo along with sensory.
- Loss in vision, hearing and speech.
- In vatsanabha poisoning there is alternate contraction and dilation pupils which is known as hippus reaction in early stage hippus sign is seen but in later stage pupil gets dilated.

Fatal Dose

- 1 gram of the aconite root.
- 250 mg of the extract.
- 25 drops of the tincture or 4 mg of the alkaloid.

Fatal Period

The shortest period is three-quarter of an hour, the longest is twenty four hours, and the average is about six hours.

Shodhan of Vatsanabha

One among the following methods can be used for shodhana of Vatsanabha.

1. Aconitum ferox roots are made into pieces, tied into piece of cotton cloth, suspended in dola yantra and heated in goat milk or cow milk for three hours.
2. Vatsnabha roots are boiled by suspending in triphala decoction in dola yantra for three hours gets purified.
- 3 Aconitum root is tied in a piece of cotton cloth, kept dipped in cow urine. It is exposed to sunlight for three days. Each day, urine of cow is replaced with fresh one. After third day, it is dried and preserved.

Treatment of Poisoning**According to Ayurved**

- i. Takan (Borax) is supposed to be antidote of Aconite due to its Hradya (Cardiac) effect. For this Takan laahi should be given along with Goghrita (Cow's clarified butter).
- ii. Use of Goatmilk (Ajaadugdh)—According to Ayurved Prakash. In this therapy in the beginning use the emetics to induce and vomiting and then use goatmilk until the vomiting stops. when the goat milk is retained in the stomach it indicates that the toxic effect of aconite is abolished.
- iii. Use of Arjun Twak, Churna along with Honey & cow's clarified butter.
- iv. Use of Juice of Tanduleeyak (Tandulja).

Treatment According to Modern Science-**(A) Use any of the following for gastric lavage**

- (1) Tannic acid (10gm in 2 liters of waters).
- (2) Strong tea.
- (3) KMnO₄(1:1000)
- (4) 0.2% KI (Potassium iodide) salutation.

(B) Cardiac monitoring in ICC unit**(C) Symptomatic Treatment**

- (1) For syncope give Injection Digitalin in 0.25 mg doses
- (2) Due to vagal inhibition, there is heart failure. To overcome this, give Injection Atropine 1mg.
- (3) For cardiac arrhythmia give 50ml of 0.1% Novacaine slow I/V.
- (4) For collapse give I/V fluids.

Contra-Indication of Vatsnabha

All the food substance which aggravate pitta like usna (hot), pungent, sour, salty eatables should be avoided. It is contraindicated in pregnancy, lactation and in early childhood, patient of cardiac, liver, kidney and brain disease. It should be avoided in person with pitta symptoms like excessive thirst, hunger, anger, sun exposure. It should be avoided during summer and rainy season when there is chance of pitta aggravation. Vatsanabha can be absorbed through skin and it should be handled carefully. While consuming vatsanabha preparation one should follow abstinence and should consume cow milk, ghee, honey, sugar and rice.

Important Formulations

Mahashankha vati, Sanjivani vati, Tamra parpati, Kaphketu ras, Tribhuvankirti ras, Saubhagya vati, Rambana ras, Anand bhairava, Hinguleshvara rase, Pancharitra rasa, Vatavidhvamsani rasa etc.

Post Mortem Appearance: No Specific signs are found.

Traces of aconite can be found in stomach. Aconite is highly decomposed in human metabolism it is also destroyed by alkali. So acidified spirit, which is combination of acetic acid & rectified spirit in the proportion of 1:2 ratio is used instead of charcoal ash for the preservation of vomitus.

Medicolegal Importance

(A) **Accidental** – It is used by quack Doctors in their remedies OR, It is also used to mixed with alcohol to increase intoxication. In such cases, accidental poisoning can cause.

(B) **Homicidal**- It is mostly used for homicidal purpose of unwanted relatives. the following factors are important for its homicidal use.

- i. Low fatal dose & short fatal time.
- ii. Cheap & easily available.
- iii. Can be given very easily with pink colored drinks.
- iv. The tingling taste can be disguised with sweets or betal leaves.
- v. It readily decomposes in human metabolism, so can not be detected in chemicals analysis.
- vi. The symptoms mimic heart disease.
- vii. No specific antidote is available.

(C) Arrow poison

It is used as a arro poison by tribes of Nepal, Sikkim Assam.

(D) Cattle poison- It can be given with food of cattle's or it is introduced in rectum & or vagina of cattle.

(E) Abortive – Occasionally used for the purpose of criminal abortion.

CONCLUSION

Formulations having aconitum roots as an ingredient are highly effective in various diseases. Practioners while prescribing such medicines should be aware of the quantity of vatsnabha in a formulation and prescribe such drugs only in recommended dose and follow-up the patient for any toxic symptom. The dose of vatsnabha should not exceed 30 mg per day above this dose it may be toxic. If any toxic symptom appears, the formulation containing vatsnabha should be immediately stopped and medicine to counteract the toxic symptoms should be started immediately without any delay. The patient should also aware and not to purchase Ayuvedic medicine over the counter and start self medication.

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