

A review on need of *Vatsanabha* (*Aconitum ferox*) *Shodhana* and its Pharmacovigilance concern

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ABSTRACT

Introduction: Practice of Indian system of medicine is considered to be the safest form of therapy, however incidence of ADR owing to the consumption of traditional drug necessitates the introduction of Pharmacovigilance of ASU drugs. *Vatsanabha* is one such drug mentioned in various Ayurvedic formulation, on which many reports have been publishing regarding its ADR.

Methodology: A thorough literary review was carried out through various classical text books like *Bhaishajyaratnavali*, *Bhavapraksha*, *Rasatarangini* etc and various databases like Pubmed, science direct, Google scholar, Dhara using the key word *Vatsanabha*, ADR, *Aconitum ferox*. A total of 6 papers was found to be relevant and selected for the literary review.

Result: Reports are published regarding the ADR, like Hypotension, Bradycardia due to consumption of aconite based Ayurvedic medicine. Studies proved that the impact of *Shodhana* process in the classic method using cow's urine is found to be more safe than any other purification methods. TLC studies shown that pseudoaconitine and aconitine were converted into less toxic substance like veratroyl pseudoaconine benzoyleaconine respectively only through traditional Ayurvedic *Shodhana*.

Discussion: *Vatsanabha* is a toxic plant with Gunas like vikasi, vyavayi, sookshma etc in prominence. Purification method should be proper and in suitable medium so as to modify these Gunas and mitigate its noxious effect.

Key words: ADR, *Shodhana*, *Vatsanabha*, *Aconitum ferox*

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INTRODUCTION

Pharmacovigilance is the science developed as an attempt to reduce the risk of drug related harms, which ultimately focusing on patient safety. In ASU system herbs are the primary source of medicine. The concept of these herbs devoid of any ill effects is a fallacy. Any drug in its natural form is a compendium of chemical constituents, which has positive and negative effects on human body. Without proper purification and neutralization of harmful constituents, development of dosage form is not possible. In Ayurvedic classics several poisonous drugs are enumerated and explained with its mandatory purification methods. Drugs are rendered with maximum therapeutic effect and safety through these procedures. The concept of *Shodhana* in *Ayurveda* not only covers the process of purification or detoxification of physical as well as chemical impurities, but also the minimization of side effects. *Vatsanabha* is one such toxic plant, which is used in several formulation after proper purification. When comes to large scale production, it is a matter of whether or not the correct purification has taken place. Here a literary search was

carried out to find out any reported ADR with *Vatsanabha* and to evaluate the impact of *Shodhana* and its pharmacovigilance concern

***Vatsanabha*:** *Aconitum ferox* Wall. Family: Ranunculaceae

Useful part -Root

Phytoconstituents- Root contains Indaconitine, Chasmaconitine, Chasmanine, Lycotonine, Aconitine, Delphinine, Bikhacontine, Pseudoaconitine.

Rasapancaka

Rasa: madhura

Guna: Ruksa, Tikсна, Lag hu, Tikсна, Vikasi, Suksma, Vyavayi

Vipaka: Madhura

Virya: Usna

Dosa karma: Tridosasamaka, Swedajanaka, jwaraghna, Dipana, Vedanahara

Fatal dose - 1gm (Root); 250mg (extract)

Fatal period - 20minutes to 24 hrs

Formulations

1. *Mrtyunjaya rasa*

2. *Anandhabhairava rasa*
3. *Jwarankusa rasa*
4. *Praneswara rasa*
5. *Jwaramurari rasa*
6. *Agnikumara rasa*
7. *Agnitundi bati*
8. *Hinguleswara rasa*
9. *Kasthuribhairava rasa*
10. *Tribhuvan kirti rasa*

Shodhana (Rasatarangini)

1. Mature tubers of *Vatsanabha* are cut into small pieces and put into a vessel made of mud or stone filled with *Gomutra*. This vessel is kept under hot sun. Fresh *Gomutra* is used every morning and process is repeated for 3 days. Later tubers are removed, deskined and dried.
2. *Vatsanabha* is cut into small pieces and placed in a *pottali* formed out of cloth. This *pottali* containing *Vatsanabha* is immersed in a vessel containing milk and boiled for 3-6hrs.

Concept of Sodhana

In Ayurveda, since the time of *caraka samhitha*, *sodhana* is in practice but its use expanded with the development of *Rasasasthra*. The detoxification or purification process of any toxic material used for medicinal purposes is termed as *sodhana*

METHODS

SEARCH STRATEGY

Classic text book-*Rasatarangini*, *Bhaishajya ratnavali*, *Bhavaprakasha*; Databases- Pubmed, Science direct, Ayush portal, DHARA, Google scholar using the keywords like *Vatsanabha*, *Aconitum ferox*, purification, *Shodhana*, ADR. A total of 15 papers were searched and 6 were selected for the paper

RESULTS

ADR Reported on *Vatsanabha* presented with clinical symptoms like burning and tingling sensation in mouth, oesophagus and stomach, sweating, hypotension, respiratory failure, cardiac depression

Organoleptic changes before and after Shodhana

Sr. no.	Features	Before Shodhana	After Shodhana
1	Colour	Brown	Light brown
2	Odour	Typical	Odourless
3	Touch	Hard	Slightly soft
4	Taste	Bitter	Salty bitter
5	Appearance	Smooth	Dull

Change in physico chemical parameter

According to Bodhakar Kishor, Total alkaloid content in unpurified *Vatsanabha* was 0.45%w/w and after *Shodhana* in *Gomutra*, it was reduced to 0.08%w/w.

According to S L Deore et al, Samples of crude drug specifically purified using ayurvedic method, chemically treated cows urine and without any treatments respectively were analysed for TLC studies. Results shown better purification effect with Ayurvedic method. Pseudoaconitine and Aconitine were converted into far less toxic substances Veratroyl Pseudoaconitine and Benzoylaconine respectively only through traditional method of *Shodhana*.

Result of toxicology studies – invivo experiment done on wistar albino rats

Without Shodhana	Lab Scale Method	Ayurvedic Shodhana Method
↓ 300mg/kg	↓ 300mg/kg	↓ 300mg/kg
28min death occurred	9:45min death occurred	no death till 14 th day
↓ 100mg/kg	↓ 100mg/kg	↓ 2000mg/kg
35min death	21.05min death	No death till 10 th day with
↓ 5mg/kg	↓ 5mg/kg	
No death but uneasy, colour of eye	No death but uneasy,	hiccup hiccups and whitish

DISCUSSION

Vatsanabha is a toxic plant with *Gunas* like *vikasi*, *vyavayi*, *sookshma* etc in prominence. Purification method should be proper and in suitable medium so as to modify these *Gunas* and mitigate its noxious effect. *Godugdha* and *Gomutra* are recommended in texts owing to its *vishaghna prabhava* and availability. Both these drugs are potent enough to change organoleptic, physicochemical character of the drug and hence reduce its toxicity.

CONCLUSION

It is confirmed from the results that the *Shodhana* process has immense effect in reducing toxicity. And the textual *Shodhana* process is by far the most effective method compared to the conventional large scale purification technique. Cases are found to be reported regarding the ADR of *Vatsanabha*. So the physician should emphasize more on safety of a drug rather than its efficacy. National pharamcovigilance centre of ASU system should emphasize some policies regarding strict scrutiny of such formulations containing toxic ingredients. So that we can avoid adverse drug reaction due to improper *Shodhana*.

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