



IMPORTANCE OF SHODHAN IN CONTEXT WITH VISHADRAYA IN RASASHASTRA

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ABSTRACT

Shodhan (Purification) is the foremost important procedure to be performed of the Rasadravyas before they are to be used as a medicine. Various rasakalpa contain vishadravya (Poisonous plant drugs) like Vatsanabh, kuchala, Bhallatak, Ahiphen, Gunja, Jayapal, etc. Before using these vishadravya in Rasakalpa, it is necessary to perform shodhan procedure of these dravyas. In Rasagranthas, various procedures have been described for shodhan of these vishadravyas. In present study, a review has been taken regarding the importance of shodhan of the viashadravyas. On studying the research work on vishadravya, it is found that, percentage of the toxic element in vishadravya decreases after shodhana which makes it free from being harmful and also makes it capable to treat many diseases.

KEY WORDS: shodhana, vishadravya, Rasakalpa, toxic element.

INTRODUCTION

Rasashastra is a science which deals with the study of Mritaloha (incinerated metals), Kandavisha (Poisonous plant drugs) and Parad (Mercury).^[1] In Rasashastra, detailed description of these dravya along with their shodhan, maran and preparation of various kalpa (medicines) is found. Among various procedures, shodhana is the first and most important procedure to be performed before using them as a medicine.

Shodhana is well defined in the classical text Rasatarangini as processing the substance along with the specific indicated shodhan dravya through the procedures like peshan/ mardan (grinding), etc. so as to remove the impurities from the substance.^[2] Acharya Charaka has described shodhana as a sanskara.^[3] It shows that ancient acharyas were well alert regarding the importance of shodhana.

Vishadravya are the drugs whose vision can induce dukkha i. e. sadness and whose ingestion can lead to death of the human being.^[4] As per the use of vishadravya in medicine is concerned, it is found that these vishadravya are found to be very useful in the treatment of various diseases. According to Charaka, even an acute vishadravya (poison) can become an excellent drug if it is properly administered, and similarly even a drug, if not properly administered, becomes an acute poison.^[5] In Rasaratnasamucchya, it is said that visha dravya plays an important role in Parad bandhana and it gives more benefits to human being when used in their proper dose in a proper way.^[6] While stating the importance of shodhana of visha dravya it has been said that the harmful properties which are present in ashuddha visha are destroyed after its shodhana.^[7] Vishadravya when properly administered is having properties like Rasayana, yogvahi, tridoshaghna, bruhana and veerya vardhak.^[8] It clears that if vishadravya are used after their shodhan process and administered in proper dose, they are very useful in the field of Ayurvedic treatment.

MATERIALS AND METHODS

Vishadravya are found to be classified as visha and upavisha, where Vatsanabha has been described as visha while Vishatinduka, etc, are included in the upavisha category.^[9]

In present study, a review of importance of shodhan of different vishadravya has been done. The findings are described below.

1. Vatsanabh (*Aconitum Ferox*) shodhan

For shodhan of Vatsanabh, various shodhan dravya and various procedures are found to be used as.

- a) Swedan (Boiling) of Vatsanabh in Godugdha (cow urine) or in chaghi ksheera (sheep milk) for 1 or 2 yama (3 or 6 hours) makes it shuddha.^[10]
- b) Dipping the pieces of vatsanabh in Gomutra (Cow urine) for 3 days, provided the cow urine should be changed every day, makes it shuddha.^[11]

c) Swedan (Boiling) of Vatsanabh in Ajadugdha (Goat urine) for 1 yama (3hours) makes it shuddha.^[12]

The review regarding the effect of shodhana on Vatsanabha has been done which shows following results.

i) In a study, Vatsanabh shodhan was done for first batch using Gomutra. For another batch of Vatsanabha, a modified method of shodhan using laboratory prepared cow urine was used. The results of this study suggest that the modified method of Shodhana using laboratory prepared cow urine is less efficient as compared to traditional Ayurvedic Shodhana process. TLC studies have shown that pseudoaconitine and aconitine were converted into far less toxic substances veratroyl pseudoaconine and benzoylaconine respectively only in traditional Ayurvedic Shodhana. TLC studies also revealed that chemical purification failed to convert toxic alkaloids to less toxic alkaloids. Chemical Shodhana process shows toxic effects on organs like liver, heart, and kidney. Thus, it is confirmed that the Ayurvedic Shodhana process is one of the powerful methods of detoxification and purification.^[13]

ii) In another study, Vatsanabh shodhan was done using Gomutra. The total Alkaloid in Ashuddha Vatsanabha was 0.45% w/w and after Shodhana it was reduced to 0.08% w/w which was 5½ times less than that of Ashuddha Vatsanabha. It justifies the Vishaghna prabhava of Gomutra. It means that Gomutra contains some enzymes which reduce the toxic alkaloids of Vatsanabha.^[14]

iii) It has been reported that Gomutra converts Aconite to a compound with cardiac stimulant property, whereas, raw Aconite showed cardiac depressant properties. Shodhana by both Gomutra and Godugdha makes Aconite devoid of cardiac and neuro– muscular toxic effects without affecting its antipyretic activity. Soaking and boiling during processing or decoction preparation will hydrolyse aconite alkaloids into less toxic and non-toxic derivatives. The results of the toxicity study suggested that after Ayurvedic Shodhana process, TLC studies have shown that pseudoaconitine and aconitine were converted into far less toxic substances veratroyl pseudoaconine and benzoylaconine respectively.^[15]

iv) In one another study also it is reported that aconite (*Vatsanabha*) purified by cow's urine is converted to a cardiac stimulant, whereas, raw aconite is a cardiac depressant.^[16]

2. Gunja (*Abrus Precatorious*) shodhan

Following references of Gunja shodhan are found

a) Swedan (boiling) of the seeds of Gunja in Godugdha in a dolayantra for 2yama (6 hours)^[17] or in Kanji (Fermented Rice) for 1 prahar (3 hours)^[18] makes it shuddha.

The research work on Gunja shodhan shows following results-

- i) Effect of shodhana on Gunja seeds with cow's milk and kanji reveals that the process of shodhana resulted in depletion of more toxic alkaloid hypaphorine and protein abrin.^[19]
- ii) It is also reported that Gunja seeds after shodhana with Godugdha shows more significant antimicrobial activity than the raw Gunja seeds.^[20]
- iii) Shodhan of Gunja seed was done in Godugdha for 6 hours. In this study, Preliminary phytochemical screening reveals the presence of alkaloids, saponin glycoside, flavonoids, reducing sugar, etc. and protein estimation shows the minimization of protein contents in most of the sample after shodhana.^[21]

3. Kuchala (*Strychnos nux vomica*) shodhan

Kuchala shodhan is described in following methods

- a) swedan of Kuchala beej is done in Godugdha in Dolayantra for 1 yama(3 hours) for its shodhan.^[22]
- b) Kuchala beej (Seeds) are fried with little amount of Ghrita in a pan till the colour of the outer covering of beej becomes kapish varna (Red-greyish colour). This procedure makes Kuchala beej shuddha.^[23]
- c) Kuchala beej is kept dipped in Kanji for 3 days. After 3 days, the outer covering of beej is removed and these are dried. After drying, its powder is made.^[24]

Following is the review of Research work on Kuchla shodhan

- i) In a study Kuchala shodhan was done using Kanji and another batch using Ardrak swaras. In this study, reduction in the alkaloid content like strychnine and brucine was only observed when the samples were processed in *Ardraka swarasa*. Therefore, a hypothesis can be drawn that as far as reduction in concentrations of toxic alkaloids are concerned either by extraction or by transformation into another form *Ardraka swarasa* may be a better media than *Kanji*.^[25]
- ii) Shodhan of kuchala was done in Kanji, Goghrita and in Gogugdha. Decrease in Strychnine content was found in all the Shodhita samples as compared to the raw drug.^[26]
- iii) A previous study also reported that boiling in milk converted the strychnine into less toxic isostrychnine (Cai et al., 1990).^[27]

iv) Water (Jala) is used as an intermediate media for Kupeelu Shodhana in Unani System of Medicine.^[28] The main aim of Shodhana of Kupeelu seeds is to remove the toxic alkaloids Strychnine & Brucine. It is reported that these two alkaloids are slightly soluble in cold water as well as boiling water.^[29, 30]

4. Jayapal (Croton Tiglium) Shodhan

Jayapal shodhan is done in following ways

- a) Firstly, Jayapala beej is broken and the tongue like part (radicle) between the two cotyledons is removed. Then swedan of these beej is done in dolayantra having Godugdha for 1 yama (3 hours). The procedure is done for total 3 times.^[31]
- b) 1 part of Jayapal and 1/8th part of Tankan are taken in a pottali and it is subjected to swedana in Godugdha for 2 yama (6 hours).^[32]

Effect of Gunja shodhan are studied as follows

- i) In a study, Jayapal beej shodhan was done by its swedan in Godugdha. In the first batch, shodhan was done by removing the radicles in the Jayapala beej and in another batch without removing the radicles. No marked difference was found in the percentage of Croton oil in the samples with and without radicle. But in comparison with the raw drugs, slight increase in the percentage of Croton oil was observed after shodhan may be because of the loss in moisture content in the drug which results in increase in the concentration of the oil. In comparison with the milk, drug after shodhana with and without radicle, more peaks of milk were common in the Jayapala after shodhan without radicle. This indicates that the shodhan process may get hindered in the presence of radicle as mentioned in the classics. The crotonolic acid, main chemical constituent of the drug Jayapal, occurs in free state and in combination as a glyceride. The glyceride does not possess poisonous properties, but the free acid acts as a purgative in the intestines.^[33] Milk may also help in reducing the teekshna and ushna guna of Jayapala seeds.^[34]

5. Dhattura (Dhatura Stramonium) shodhan

Classical References of Dhattura shodhan are found as follows-

- a) Swedan of Dhattura in Dolayantra containing Godugdha^[35] or Gomutra^[36] is done for 1 yama (3 hours) for its shodhan. The Shodhana process resulted in 70 to 90% reduction in hyosciamine content, where as scopolamine content reduced almost to zero. The Shodhana process resulted in 70 to 90% reduction in hyosciamine content, where as scopolamine content reduced almost to zero.

b) Dhatura seed are kept dipping in Gomutra for 12 hours and then the seed are subjected to swedan in Godugdha for 3 hours.^[37]

Research study shows following result

i) Dhatura seeds were subjected to Shodhana as per classical method mentioned in the text Rasamruta. About 100 grams of Datura seeds were soaked in 400ml of freshly collected Gomutra and kept aside for twelve hours. Then the Gomutra was decanted and the seeds were washed in water. It was then subjected to swedana in Godugdha for three hours using dolayantra. The shodhana process resulted in 70-90 % reduction in hyosciamine content of Dhatura seeds, whereas the scopolamine content reduced almost to zero.^[38]

6. Bhallatak (*Semicarpus anacardium*) shodhan

Shodhan of Bhallatak can be done in following ways-

a) Bhallatak is rubbed with Ishtika churna (powder of brick) till its external covering and oily contents are removed. Then it is washed with water.^[39]

b) Swedan of Bhallatak is done in dolayantra containing Narikel jala (coconut water) for 1 yama (3 hours).^[40]

Following is the review of Research work on Bhallatak shodhan

i) Bhallatak were taken in an iron pan and heated by charcoal. Smoke started coming from the nuts after 5 minutes of heating. Then burning charcoal was put on the pan containing Bhallataka nuts. Immediately the hot nuts caught fire. After 2 minutes the fire was extinguished by removing the burning nuts from the pan and spreading it to extinguish fire. Then the nuts were allowed to cool. The process was repeated for 3 times. The Methanol soluble extractive of shodhit Bhallatak was reducing as compared to raw Bhallatak.^[41]

The Shodhana process resulted in 70 to 90% reduction in hyosciamine content, where as scopolamine content reduced almost to zero.

The Shodhana process resulted in 70 to 90% reduction in hyosciamine content, where as scopolamine content reduced almost to zero.

ii) In a study, Bhallatak shodhan was done by rubbing it with brick powder. It was found that oil in Bhallataka is reduced in Shodhana process. It shows that Shodhana process leads to the reduction in the toxic constituents of the Bhallataka.^[42]

iii) In another study, Bhallatak shodhan was done as per API, in which Bhallatak was kept dipping in Gomutra for 7 days and then in Gogudha for 7 days. Each day Bhallatak were washed with water and then new Godugdha was added. After this, Bhallatak are mixed with brick powder and rubbed and then kept in a pottali for 3 days. After 3 days, Bhallataka are thoroughly washed with water and then dried. Shodhana (purificatory procedure) increases the anacardol level in shodhita bhallataka fruit samples. More percentage of the anacardol was due to the conversion of toxic urushiol into Anacardol.^[43]

DISCUSSION

Shodhan is a sanskara done for the purification of dravya as well as to make it qualify for the administration in the body. Shodhan also makes dravya capable to cure diseases. As per the vishadravya described in Rasashastra are concerned, shodhan is the foremost important step to be done before using it for consumption as a medicine. Shodhan is found to be helpful to minimise the percentage of poisonous ingredients of vishadravya. Media used for shodhan may also provide some new organic or inorganic principles to the drug which may be responsible for enhancing their therapeutic efficacy.

While observing the toxic ingredients in various vishadravya and the role of shodhana to minimize it, the role of media used for shodhan is found to be very important. For shodhan of vishadravya, Godugdha (cow urine), Goghrita (cow ghee) and Gomutra (cow urine) are mostly found to be used. The probable action of these media can be elaborated as follows.

Gomutra is having lekhan property which may be leading to expel out the poisonous content from the vishadravya. As Gomutra is an alkali media, it may be also hydrolysing the toxic alkaloids in the vishadravya to their less toxic derivatives.

Godugdha possess properties like Madhur, Snigdha, Guru, Sheeta, etc., which are opposite to that of any vishadravya. Various properties of Godugdha like Preenana, Jeevana, Vajikarana, Vayasthapana etc., may be preparing vishadravya to be therapeutically active.

When vishadravya is fried with Goghrita, it may be altering the toxic properties of vishadravya due to its 'Samaskarasya Anuvarta' property. Goghrita, being a good sneha dravya, also provides a soothing and cooling effect, helping to minimize the irritant effects of vishadravya.

Kanji is having the property of Vata & Kapha shaman (To pacify) and it is also used as Shoolaghna.^[44] Hence, Shodhana in Kanji may be enhancing the same properties of the vishadravya.

Ardra swarasa is Madhura in Vipaka and it is having property of Vata & Kapha shaman which may be influencing on the vishadravya during shodhan.

The media employed in the Shodhana process has very significant role for eradicating the toxic chemical components partially or by transforming them to nontoxic substances. Sometimes media act like solvent to dissolve the material thereby separating them from the insoluble impurities. Media may also provide some new organic or inorganic principles to the drug which may be responsible for enhancing their therapeutic efficacy.

This review clears that shodhan of Vishadravya is very important as it prepares Vishadravya for being used as a medicine.

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