



## REVIEW ARTICLE

### PRACTICAL VIEW OF GENERAL SHODHANA PROCEDURES OF POISONS

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#### ABSTRACT

*Ayurveda*, an ancient science of life deals with the study of not only treatment but also prevention of diseases. *Acharyas* of *Ayurveda* are much vigilant for drug- right from the collection, manufacturing, and its proper administration. Specific indications with proper doses, adjuvants (*Anupanam and Sahapaanam*).standard procedures for multidrug formulation had been described very well. Even while using poisons ( *Vishas*) and subpoisons( *Upavishas*) for medicinal use their individualized purification(*Shodhana*) is described to avoid any fatal effect. In the absence of specific methods and materials, they also explained the general processing of poison for accessibility and feasibility of the drug manufacturing. As there is a big boom about the toxicity of *Ayurvedic* drugs in international scenario, these easy procedures for purification can act as a universal antidotes. Even the instructions are given to patient can do it at home, for e.g.-*Swarnagairik* can be instructed for *Bharjana* at home before use. It will help to increase the faith about *Ayurveda* in a common man's belief system. Conclusion-general processes are easy guide for purification of poisons.

**Keywords-** poisons, subpoisons, purification processes.

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## INTRODUCTION

*Agadatantra* is one of the eight branches of *Ayurveda*. Which deals with the identification of *Visha* (poison), types of *Visha* (poison), signs, symptoms and their treatment. Poisons (*Visha*) have faster action due to its *Vyavayi*, *Vikasi*, and *Ashukari Guna*. In various *Ayurveda samhita* various *Agada Kalpas* are described which have faster action and potent ingredients. *Visha* means poison. *Visha Chikitsa* or *Agada Tantra* include the treatment of diseases caused by poisons and toxins<sup>[1]</sup>; such as spoilt food, animal, reptile and insect bites, poisonous minerals, metals and unsuitable food combinations. It may equivalent to toxicology in modern medicine. Concept of *Visha* is far ahead than the toxins in the sense of its chemical structure and uses. Careful dose dependent use of poisons acts like a nectar in the patients of death bed. From 2016 *Agadatantra* has been included in third professional of BAMS curriculum which is all clinical subject. So applied aspects about the use of *Visha* yogas and cautions during its preparation and use should be documented at a glance.

*Visha Chikitsa* describes the action of harmful elements on body functions and how it can destroy the body tissues. Specific antidotes for poisons were prescribed for nullifying its effects. Ancient texts such as *Charaka Samhitha*, *Susrutha Samhitha* and *Ashtanga*

*Sangraha* offer exhaustive information on this branch of *Ayurveda*.

Several drugs of plant origin have been used to treat various disorders, e.g. reserpine, atropine, etc. by modern system of medicine. However, many of them were withdrawn or are obsolete due to their toxicity. But ancient science of medicine is using all such substances since ages in their crude form or after proper process of refinement and detoxification called *Shodhana*<sup>[2]</sup>. In addition, science of *Ayurveda* classify many herbal drugs as *Visha* (poison) or *upa-visha* (moderately poisonous) and also uses them after *Shodhana*. According to *Ayurveda*, *shodhana* is not only the process of detoxification, but also a process of *Samaskara* (potentiating the therapeutic efficacy) of such drugs<sup>[3]</sup>. It also reduces the side effects. In modern literature, there is not much information regarding the scientific validity and rationale in adopting specific *shodhana* process for herbal drugs. There is some information regarding the ancient Chinese method of detoxification of some of the herbs like *nux-vomica*. According to literature, Chinese method of detoxification reduced the toxicity and enhanced the potency of seeds of *nux-vomica*. Further they attributed this to the qualitative and quantitative changes in the phytochemical profile of the seeds due to detoxification process<sup>[4]</sup>.

In addition to this, the *Shodhana* (detoxification procedures) in case of poisonous plants, minerals and metals has also been quoted in *Ayurveda* in the texts related to *Rasashastra*<sup>[5]</sup> (Ilanchezhian R *et al.*, 2010). There are works wherein validation of these purificatory methods have been done in case of plants from *Upavisha* (semi-poisonous) category viz. *Langali* (*Gloriosa superba* L.), *Kupilu* (*Strychnos nux vomica*) etc<sup>[6]</sup> (Acharya RN, 2014).

### AIMS AND OBJECTIVES

To study the common general processing of *Vishopvishas* (poisons and subpoisons) and its significance in medicinal use and in one's day to day life.

### MATERIALS AND METHODS

All the relevant lexicons and texts of *Ayurveda*.

### LITERARY REVIEW

Etymologically, '*Visha*' is that which causes '*Vishannatva*' (distress) or *Vishada* (sadness) in the body<sup>[7]</sup>. Thus '*Visha*' has been defined as a substance which is destructive to life and possess properties like *Vyavayi*, *Vikasi*, *Ushna*, *Tikshna*, *Ruksha*, *Sukshma*, *Ashukara*, *Anirdeshya rasa* or *Apaki* etc<sup>[8]</sup>. And the drugs which possess these properties are called '*Vishas*' and those which are less in virulence than '*Vishas*' are called '*Upavishas*'<sup>[9]</sup> (sub-poisons).

Vedic literature explained the mode of drug action due to inherent power or potency (*Veerya*)<sup>[10]</sup>.

It was long ago when Ayurvedic fundamentals and its eight clinical features were documented in the Ayurvedic literatures<sup>[11]</sup>.

Initially *Dravyaguna shastra* was not mentioned as a separate branch of *Ayurveda*. But all the treatises contain elaborate descriptions about the herbs, their properties and indications. *Charaka* identified the necessity of complete knowledge of herbs and their utility in therapeutics. *Charaka* opined that a deadly poison can become a very good medicine if it is administered properly<sup>[12]</sup>.

### Classification of Poison

The classification of poison is based on certain basic criteria like origin, base, properties, potency etc. Some of the *Ayurvedic* classics and texts in medieval period have classified all the poisons into two categories as *Mahavisha* and *Upavisha* basing on their toxicity and potency<sup>[13]</sup>.

*Upavisha* are the group of drugs, which are less toxic in nature and not so lethal but produce certain toxic symptoms on consumption or administration. The symptoms produced in the body due to *Upavisha* are less toxic, less severe, usually not life threatening and their toxicity can be controlled by therapeutic measures<sup>[14]</sup>.

Broadly '*Vishas*' are classified into three types viz. *Sthavara*, *Jangam* and *Kritrima*<sup>[15]</sup>. '*Sthavara Vishas*' are those which belong to minerals or to group of poisonous herbs<sup>[16]</sup>,

while '*Jangama Vishas*' are obtained from the animal kingdom<sup>[17]</sup>.

The '*Kritrima Vishas*' are formed as a result of undesired compounding of drugs<sup>[18]</sup>. Among the poisonous herbs- tuberous and / or root poisons are more toxic.

In literature, '*Rasarnava*' appears to be the first text to mention about '*Visha*' '*Upavisha*' classification<sup>[19]</sup>.

. After '*Rasarnava*', '*Rasa Ratnakara*', '*Rasendra Chudamani*' and '*Rasa Ratna Samucchaya*' have mentioned about five '*Vishas*' while other texts like '*Rasendra Chintamani*', '*Sarngadhara Samhita*', '*Bhava Prakasha*' and '*Ayurveda Prakasha*' have enumerated nine dravyas as '*Vishas*'<sup>[20]</sup>. The Author of '*Rasatarangini*' (20th A D) described only '*Vatsanabha*' in '*Visha*' group considering its medicinal importance, common availability and frequent use in therapeutics. The other drugs of poisonous nature have been included in '*Upavisha*' group by this text<sup>[21]</sup>.

Poisons in Ayurvedic literature While reviewing the Ayurvedic literature for visha, it is found that there is a difference of opinion amongst the authors regarding the inclusion of drugs in '*Upavisha*' group. '*Rasarnava*' mentioned five drugs in '*upavisha*' group<sup>[22]</sup>, while '*Rasaratna Samucchaya*' and '*Rasendra Chintamani*' enumerated seven drugs<sup>[23]</sup>; in later texts like '*Ayurveda Prakasha*' and

*'Yogaratanakara*' it is increased to nine<sup>[24]</sup>. while in '*Rasa Tarangini*' it has gone up to eleven<sup>[25]</sup>.

Thus, historically, there seems to be a gradual increase in the number of poisonous herbs which means more and more drugs have been recognized for their poisonous nature with time. '*Charaka*' in the 23rd chapter of *cikitsasthana* has mentioned following ten properties of *Vishas*, viz – *Laghu*, *Ruksha*, *Ashu*, *Vishada*, *Vyavayi*, *Tikshna*, *Vikasi*, *Sukshma*, *Ushna* and *Anirdeshya rasa*<sup>[26]</sup>. '*Susruta*' in *Kalpasthan* also reported similar ten properties, but included *Avipaki* in place of *Aniredesya rasav*<sup>[27]</sup>.

*Acharya Sharangdhar* listed eight properties of *Vishas* they are *Vyavayi*, *Vikasi*, *Sukshma*, *Chhedi*, *Madavaha*, *Agneya*, *Prananashaka* and *Yogavah*<sup>[28]</sup>.

***Visha Dravya and its Action***--On the basis of the action on various components of body, the probable mode of action of a *visha dravya* has been described in Ayurveda. It produces distress of the body constituents, burning sensation and putrefaction<sup>[29]</sup>. *Vishada guna*, does not have any mucous property and doesn't stop anywhere in the body, passes through all the *Doshas*, resulting in their vitiation. In this way, *Visha* leads to vitiation of all the three *Doshas* and becomes complicated to treat<sup>[30]</sup>. *Vikasi guna* breaks the bonding between various *Dhatus* and thereby causes looseness in *Dhatus* (*Dhatushaithilya*),

resulting in their improper function<sup>[31]</sup>. Activity of a *Visha dravya* depends on the dominance of *Guna* possessed by it. For instance, domination of *Ruksha guna* will lead to the vitiation of *Vata*<sup>[32]</sup>, domination of *Sukshma guna* lead to vitiation of *Rakta dhatu*<sup>[33]</sup>, as compared to others, while domination of *Tikshna guna* will lead to impairment of three *Marmas* of the body i.e. *Shira, Hridaya* and *Basti* and may lead to *Murchha, Sanyasa* and other symptoms of *Marmaghata*<sup>[34]</sup>.

### Importance of Purification of poison

The poisonous plants reported in ancient scriptures of Ayurveda are still being used widely in a number of diseases after processing with proper *Shodhana*. Ayurvedic physicians successfully employed these drugs after proper *Shodhana*<sup>[35]</sup>. The concept of *Shodhana* was mentioned for the first time in *Charaka Samhita* in the context of *Danti Dravanti Kalpadhyaya*. To reduce the '*Vikasi*' property of Danti root, *Charaka* mentioned it as '*Samaskara*'<sup>[36]</sup>. *Acharya Vagbhata* also mentioned *Shodhana* of drugs of plant origin in detail, in the context of *Bhallataka Rasayana* for '*Bhallataka*' (*Semicarpus anacardium*). It is reported that Aconite (*Vatsanabha*) purified by cow urine is converted to cardiac stimulant, whereas raw Aconite is cardiac depressant<sup>[37]</sup>. It is clearly mentioned in '*Bhava Prakasha*' that the bad/toxic effects attributed to '*Ashodhita Vishas*' (unpurified poisonous substances) are

minimized when these are used after being subjected to *Shodhana*<sup>[38]</sup>. Hence '*Vishas*' should be essentially subjected for *Shodhana* before being used in therapeutics<sup>[39]</sup>.

On Review of Ayurvedic literature it is observed that Various *Shodhana* procedures are mentioned for *Visha* and *Upavisha* group of drugs<sup>[40]</sup>. Out of these, following procedures are common for different '*Vishopavisha*' drugs.

**1. Achushana** (absorption) Oily content of certain toxic materials are minimized through different absorption means, e.g. *Bhallataka* *Shodhanawith* brick powder. Many methods are in practice for the *shodhana* of *Bhallataka* fruits like, cut pieces of fruits were mixed with brick powder and rubbed thoroughly by covering it with thick cloth till the outer covering is removed. Then it was allowed to be in brick powder for 3 days till the oily part was absorbed. Then washed with hot water, dried and preserved (Gyanendra, 2005); under goes *Swedana* in *Dolayantra* for 3 hrs in coconut water (Sadananda, 2004); after removal of the thalamus portion the fruit should be soaked in cow's urine for seven days followed by cow's milk for seven days. Then the seeds should be put into bag containing coarse brick powder with which they are rubbed carefully, to reduce the oil content. Then the fruits should be washed with water and dried in air<sup>[41]</sup>.

Research shows that *shodhana* with soaking in cow's urine followed by cow's milk and rubbed

with brick powder increases the anacardol level in shodhita bhallataka fruit samples. More percentage of the anacardol maybe due to the conversion of toxic urushiol into anacardol<sup>[42]</sup>. Recent researches show that there is change in Rf values before and after shodhana of Bhallataka fruits. Biological activity of Semecarpus nuts were tested against lipopolysaccharides-induced nitric oxide production in rat peritoneal macrophages. It showed minimum activity in the extract from unpurified nut (8.06%), which gradually enhanced when treated with brick (10.61)<sup>[43]</sup>.

**2.Nimajjana** (dipping) The drug is kept immersed in the prescribed liquid media for specific time period e.g. Vatsanabha shodhana cow's urine. *Gomutra Nimajjana*<sup>[44]</sup>: soaking in cow urine for a prescribed period. A recent research study shows that, the percentage of aconitine in raw Vatsanabha(0.113)was <sup>[45]</sup> reduced to 0.089 after being processed with Gomutra(Cow's urine)as a media<sup>[46]</sup>.

Langalishodhana is done by immersion of its roots in cow's urine for 1 day<sup>[47][48]</sup>. In another practice the cut pieces of gloriosa are kept in takra (buttermilk) for seven days, in an earthen pot and washed and dried under sunlight<sup>[49]</sup>. In another method langali roots are mixed with saindhava lavana (rock salt). Langalishodhana also done through another method wheretakra(butter milk) and saindhava lavana are made into solution and pieces of langali are

immersed in it for 3 or 7 days<sup>[50]</sup>. Pharmacological study on rats, revealed that there were no significant behavioural changes during acute oral toxicity study implicating that both raw and shodhita langali (with gomutra) are relatively safe at 2000mg/kg. However, in chronic toxicity study for 90 days, Raw langali, at ten times dose level showed decreased spermatogenesis whereas gomutra shodhihta langali showed moderate to good spermatogenesis. Antimicrobial study shows that Gomutra shodhita langali showed better antimicrobial and antifungal activity as compared to raw langali tuber<sup>[51]</sup>.

**3.Swedana**<sup>[52]</sup>: boiling in different liquids such as cow milk, goat milk, cow urine, vegetable extracts and *Kanjika* etc. e.g. nux-vomica *Shodhana* with cow's milk. In an another study it was observed that the removal of toxic alkaloids aconite is more by swedana with the cow's urine method in comparison to others media like cow's milk, goat's milk, Triphala Kwatha, etc and the study concluded that Gomutra( Cow's urine) should be considered as the best media for Shodhana of Vatsanabha<sup>[53]</sup>.

Different methods of Shodhana of kupiluseeds are in practice like soaking in cow's urine for 7 days; soaking in cow's urine for 7 days followed by swedana with cow's milk for 3 hrs<sup>[54]</sup>; Recent study reveals that after processing in kanji(sour gruel) and ardraka swarasa (fresh ginger juice)

the strychnine content was reduced by 39.25% and 67.82% respectively and the brucine content reduced by 17.60% and 40.06% respectively, in comparison to the raw seeds<sup>[55]</sup>. A study was conducted by administration of the powder of raw and processed kupeelu seeds (processed with kanji, i.e. sour gruel) as test drugs for anti-inflammatory activity by employing Carrageenan and Formaldehyde induced hind paw oedema in Wistar strain albino rats at a dose of 22.5 mg/kg body weight orally. The result showed that the processed kupeelu provided highly significant anti-inflammatory activity against formaldehyde induced hind paw oedema, but did not have similar activity against Carrageenan induced hind paw oedema<sup>[56]</sup>.

**Dhatu** seeds are processed through swedana using cow's milk for 1 yama (3 hour) and then it should be washed with hot water and dry properly (Sadananda, 2004). Dhatu seeds to be kept in Dola yantra & allowed for swedana using cow's urine for 1 yama (3 hrs) afterwards to be triturated in Khalvayantra & filtered through cloth (Sadananda, 2004). Datura metel Linn. and Datura innoxia Mill. when undergone shodhana by soaking in gomutra and followed by swedana in godugdha, showed 70-90% reduction in hyosamine content and total removal of scopolamine (GC-MS analysis) after shodhana. Total alkaloid estimation showed almost 70% reduction in total alkaloid content

of both D. metel and D. innoxia seeds after shodhana. After shodhana D. metel sample showed 70% increase in total protein content whereas D. innoxia sample showed an increase of about 42%. (Patel et al., 2010). The percentage of water soluble extractive, alcohol soluble extractive, and total alkaloid were found reduced in the shodhita Datura metel seeds such as 21.56% water soluble extractive value was found in ashodhita sample whereas 5.56%, 7.50% and 3.37% were found in Datura metel shodhita with cow's milk, shodhita with cow's urine and shodhita with cow's urine and cow's milk respectively. HPLC analysis also showed the depletion of toxic alkaloid like atropine and hyoscyne in the shodhita Datura metel seeds as compared to ashodhita Datura metel seeds<sup>[57]</sup>.

**Shodhana of Gunja seeds;** It is to be kept in Dolayantra and swedana should be done using Godugdha (cow's milk) for 6 hours; using kanji for 3 hours<sup>[58]</sup>; nimbu swarasa for 3 hours (Garga, 2004). HPLC studies revealed that the process of shodhana with godugdha (cow's milk) and kanji (sour gruel), resulted in depletion of more toxic alkaloid hypaphorine and protein abrin, which is the chief poisonous constituent of *A. precatorius* Linn. Study showed that the percentage of abrin were 18%, 14% and 6.4% in case of ashodhita, shodhita with cow's milk and shodhita with kanji respectively and hypaphorine were 11.789%

and 5.040% in ashodhita and shodhita with cow's milk sample respectively (Gautam, et al., 1998). A study to assess antimicrobial activities revealed that chloroform extract of Kanji sodhita Gunjaseed is more effective against *Bacillus subtilis* where the zone of inhibition were found 9 mm and 13 mm in case of ashodhita and kanji shodhita gunja seeds respectively. Chloroform extract of Nimbu swarasa shodhita Gunja seed is more effective against the fungal activity of *Helminthosporium oryzae* where the zone of inhibition was found 17 mm in nimbu swarasa shodhita gunjaseeds, which is the maximum value in comparison to the other samples<sup>[59]</sup> <sup>[60]</sup>.

**Karaveera roots**, thoroughly cleaned, should be processed through swedana with cow's milk for 3 hours. Then roots should be washed with water and dried. (Sarngadhara, Parasurama, 2008). The total cardenolide content of pre- and postshodhana of *Nerium* root extract was estimated and the cardenolide present in pre-shodhana sample (31.61 %w/w) was found to be more than that of post shodhana (24 % w/w) sample. Preparative TLC and LC-MS showed the reduction of oleandrin peak in the postshodhana sample. In pharmaceutical study prominent features of cardio toxicity including tachycardia were noted in the pre-shodhana *Nerium* treated animals along with mortality. However, no such toxicity was

encountered in the postshodhana *Nerium* treated animals<sup>[61]</sup>.

**The rhizomes of vacha** should be boiled successively in Gomutra (Cow's urine), Alambusha (Mundi) and Panchapallava kwatha followed by bashpa swedana (fomentation) using Surabhitoya (Gandhodaka)<sup>[62]</sup>. Vacha rhizomes should be soaked in appropriate amount of cow's milk for overnight, then washed in warm water and dried in sun. A similar method is followed in Ottappalam (Kottayam) of Palakkad district, Kerala state where Vacha was soaked in Dadhi mastu for overnight, then washed in warm water and dried in sun. Acute toxicity test of raw vacha and shodhita (swedana with gomutra, mundi kwatha, panchapallava kwatha and gandhodaka one after another) was evaluated as per OECD 425 guidelines with 2000mg/kg as limit test. Test drugs were administered orally to overnight fasted female rats and detailed behavioral profiles were recorded throughout the study. Change in body weight, hematological and biochemical parameters were carried out on 14th day. At 2000 mg/kg dose both raw and classically processed Vacha did not produce any observable toxic effects and all animals survived 14 days of observation. Pharmacognostical study of shodhita vacha showed marked changes in comparison to its raw counterpart in terms of starch grains, oil cells and other microscopical as well as

macroscopical features. Phytochemical analysis revealed that certain active principles like cardiac glycoside are imbibed into the drugs after classical shodhana. Hence, shodhita vachamay be useful in the intervention of cardiac failure cases and gas chromatography revealed the little impact of reduction of  $\beta$ -asarone. Pharmacological study revealed that classical shodhitavacha showed enhanced sedative, anti-anxiety, anti-depressant and anti-convulsant activities than the raw Vacha. Classically shodhita vacha also showed relatively better effect in case of acute as well as chronic administration compare to the raw vacha [63].

**4. Bharjan**<sup>[64]</sup> : frying with or without ghee. e.g. Hingu shodhana, kupilu shodhana with cow's ghee.

**5. Bhavana**<sup>[65]</sup> : maceration and/ or trituration with vegetable juices. It is the process in which the material is completely submerged in prescribed liquid and triturated till its dryness. (RT 2/49). e.g. Ahiphena Shodhana with ginger juice.

**6. Nihsnehana**<sup>[66]</sup> : reduction of oily content .

**7. Prakshalana**<sup>[67]</sup> : Washing with hot water. e.g. tuber of *Vidarikanda* after collection Shodhana with water.

**8. Nistvachikarana**<sup>[68]</sup>: is the process of decortications (removal of covering) . **Jayapala seeds** are thoroughly cleaned and shade dried. Seed coat is to be removed and cotelydone

should be separated carefully to remove the radicle, afterward Jayapala seeds should processed through swedanausing cow's milk as media for 3 hrs., then seeds are to be grinded and dried properly (Sadananda, 2004, Sujatha, 2013). A study was conducted to assess the role of shodhana (with cow's milk as media) on Jayapala seeds with removal of radicle in one group and without removing radicle in another. Result showed that the percentage of croton oil was increased after shodhana with cow's milk i.e. 32.187%, 32.2% and 41.08 in case of raw Jayapala, Jayapala with radicle after swedana and Jayapala without radicle after swedana respectively. The result showed that some of the peaks present in milk and after shodhanasample were common indicating the addition of component of milk to Jayapala [69].

**9. Parishravana** (straining) The solid drug is dissolved in suitable liquid media and separated from insoluble impurities through straining, e.g. Gugguluwith triphala decoction.

**10. Prithakikarana** (separation) Physical impurities are removed e.g. Kampillaka Shodhana

Out of the procedures described above, cow urine and boiling with cow milk are the most common procedures applied for almost all the '*Vishopavisha*' drugs<sup>[70]</sup>.

## DISCUSSION

From the above descriptions , it is clear that the science of *Ayurveda* is careful about the fatality

of any drug hence they already mentioned the precautions, do's and don't about the use of medicinal use of drugs . It is matter of discussion and research that after purification how many dreadful qualities of poison are diminished to make it useful therapeutically. Poisons are highly potent and fast acting drugs , they can be used as an catalyst the enhance the drug with which it is used. But before using poison they should be purified to reduce it fatality and safety concerns. The general processes described here are very easy and can be done in situ of any situations, no big budget instruments, flasks and electricity is needed. At the OPD level or if the patient is unable to come to physician on and off, doctor is able to teach this simple methods to do at his place and get the maximum benefits of the treatment. If one is able to spread the messege of *Ayurveda* in a simple and loud language will definitely help in strengthening the roots of *Ayurveda* in masses. It is the need of time to aware people about the simple and easy *Ayurveda* in there own language and in there own setup. These purification processes are effective in removing the impurirties as well as enhances the quality which the doctor is intended to .for e.g.*Bhavana* with cows urine increases the *Tikshna guna* and can be used as *Lekhaniya* or in the diseases of *kaphavikara, medoroga*. This shows the broader view and vision of the then scholars of *Ayurveda* that if all the complicated

procedures are not possible such generalized guidelines helps to get breakthrough for further preparation and detoxifications of *Vishopvishas*. Although specific *Shodhana* karma for different poisons are described distinctly, this can help when the doctor is clueless about the drug or *Anukta dravya*. For time being manufacturing practices should be moulded according to the cutting edge technology. But for it one has to be well equipped with all the traditional knowledge and logics behind the basic principals of purifications. Present article is an attempt to throw light on the most practicle ways of purification procedures for poisons and subpoisons in the texts of *Ayurveda* which may lead to new thought processes to shape it in todays techno *Ayurveda* era. New scholars of *Ayurveda* should work on this topic by practically doing it and determining which one is comparatively more effective in context of reducing the toxins- main toxic ingredient of the poison. In future , further study on this topic can be proposed considering any single poison subjected to all this types of purification and evaluating the changes in the chemical composition of the drug after doing it. Whether this procedures are safe and effective in medicinal use. The choice of drugs for the procedures should sensibly chosen by the physician as per the result expected from it.

*Bhavana*: maceration and/ or trituration with vegetable juices. We marinate the food like meat with spices. *Nihsehana* : reduction of oily content, we keep the fried *Pakodas* and *Vada paav* on tissue paper. This procedures are so simple that one can do it in ones own kitchen. Indian food culture is full of this procedure. *Nimajjana*: soaking in water for sprouts for a prescribed period. In the kitchen *Swedana* –Boiling of daal baafale are prepared by this method, *Bharjana* : frying with or without ghee rawa for upama , *Kshalana* : washing with hot water.commanly all fruits and vegetables, *Nistvachikarana*: is the process of decortications (removal of covering) . some times remove the covering for potato chips and frying it. Indian food plate is full of highly scientific methods which we are unaware of. This can be a area of research of dietetics in Ayurveda of *krittannavarga*(food preparations) . In modern era the poison enters into kitchen in the form of insecticides and pesticides sprayed over the fruits and vegetables we consume daily. *Kshalana* and *Jalnimajjana* are the processes one normally apply to remove those toxins, some may add soda bicarb in it for more purification. Boilling process itself killing the bacterias at high temperature. But in *shodhana* of poisons are far more than just removing the impurities it also alters the chemical and biological composition of poison to make it palatable and wholesome. This

article may open the door to all the stakeholders to think about the purity and quality of poison in practical use of medicines after purified by classical method.

A series of pharmacological activities pertaining to raw and process *vatsanabha* was reported by LB Singh in his book *visa plants in Ayurveda*. It is reported that due to *shdhanatechnique*, the active principles of *vatsanabha* lose their depressant action on the heart and instead become stimulant having mild cardio-tonic property. A study conducted to assess the percentage of total alkaloid content in the root of *sweta chitarka*, *ashodhita rakta chitraka* and *shodhita rakta chitraka*(deeping in lime water for 12 hr) was found to be 0.005%, 0.106% and 2.3% respectively. HPTLC study showed that the percentage of active principles, *plumbagin* is maximum in *ashodhita rakta chitraka* which reduced after the process of *shodhana* with lime water. Pharmacological study conducted to evaluate the effect of *Shodhana* on *chitraka* root shows that LD of different sample were found 2700mg/kg, 50 10800mg/kg and 10800mg/kg in *ashodhita rakta chitraka*, *shodhita rakta chitraka* and *shodhita sweta chitraka* respectively. In chronic toxicity study, all the three samples *sweta chitrka* and *raktachitraka*( two and five time than normal dose) showed toxic producing potential. The potential is much less in *sweta chitraka* in comparision to *rakta chitraka*. Hence, the study

concluded that *Chitraka* should be used after *shodhana* only and more caution should be taken during internal administration of *rakta chitraka* <sup>[71]</sup> (Kalpesh, 2005).

## CONCLUSION

General processing of poisons are effective methods of removing impurities but also enhances the required quality results as per physician. Relevance of these processes are remained as it is from ancient times till date. Detoxification is also a technique to enhance the potency and efficacy of a drug in addition to the reduction of the toxic properties. Recent pharmacological researches, on different animal models, have proved that the drugs like Vatsanabha, Kupeelu, Bhallataka, Gunja, Dhatura, langali and Vacha etc. after Shodhna are less toxic and pharmacologically more effective than the raw drugs.

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