EXPLORING THE CONCEPT OF VACHA (ACORUS CALAMUS LINN.)

SHODHANA IN AYURVEDA

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ABSTRACT
Ayurveda advocates Shodhana (Purificatory procedures) for poisonous substances to render it safe and effective for therapeutics. But mentioning of Shodhana for a non poisonous plant like Vacha is a matter of great curiosity with regards to the purpose of Shodhana. In this review an attempt has been made to analyse the concept and relevance of Vacha Shodhana in view of both classical and modern thoughts.

Keywords: Shodhana, Vacha, Carcinogenic, Chakradatta, Purification.

INTRODUCTION
Vacha (Acorus calamus Linn.), an indigenous drug of India belongs to family Acoraceae. It is delineated under various therapeutic groups like ‘Lekhaneyea’, ‘Triptigyna’, ‘Ardshohna dashehmani’ etc., by Acharya Charaka1, ‘Pippalyadi’, ‘Vachadi’ etc., ganas by Acharya Sushruta2, and ‘Mustadi’, ‘Vatsakadi’ etc., gana by Vagbhata3. The pharmacognostical characters of Vacha are described through various synonyms like ‘Shadgrantha’ (Having six nodes), ‘Uigrangadha’ (Having strong aroma), ‘Lomasha’ (Having small hairs), ‘Golomi’ (Having small hairs like cow) etc. It has important pharmacological properties like Deepana (Appetizer), Pachana (Digestive), Vamaka (Emetic), Medhya (brain tonic), Kanthya (Good for throat), Sanjnasatapana (Restores lost consciousness), Vedanasthapana (Anodyne) etc., and hence used extensively in therapeutics45. Classics like Chakradatta and Bhaishajya Ratnavali have given emphasis on Shodana (purification process) of Vacha using different media like Gomutra (Cow’s urine), Mundhi Katha (Decotion of Sphaeranthus indicus Linn), Gandhodaka (Decotion of six aromatic herbs) etc.5. Some folklore traditions of Karnataka and Kerala also practise Vacha Shodhana through Goksheera (Cow’s milk) and Mastu (Curd whey) respectively. The concept of Shodhana for Vacha is further supported by the references from Ayurvedic Pharmacopoeia of India and Herb directory of Indian System of Medicine and Homeopathy, that it should be used after Shodhana for therapeutics58.  

Concept of Shodhana
The Shodhana concept is prevalent in two contexts, be it the human body or a dravya, it literally refers to ‘Purification’ or ‘to purify’11. Shodhana for the body refers to removal of excess and vitiated doshas through different routes of the body. Similarly Shodhana of a dravya refers to removal of unwanted properties or impurities from a substance through different pharmaceutical procedures12. There are references in Charaka Samhita where Shuddhi (purification) of Dhatu and Ratnas are carried out using hairbrush, washing with water and cloth which indicate that procedures involving cleaning and processing also mean Shodhana13. Shodhana procedures have been advocated for both herbal as well as mineral drugs based on their toxic nature. Poisonous plants like Vatsanabha (Aconitum ferox Wall.), Kupilu (Strychnos nux-vomica Linn.) etc are effectively used for medicinal purpose after passing through a series of purification (Shodhana)14. The classical quotes also reveal that Shodhana not only refers to purification procedures but also to different samskaras through which there is ‘gunaantardhana’ (transformation in properties) in the primary substance rendering it safe as well as many desired qualities are imbied in it15. For example, Shodhita Guggulu (Commiphora mukul Engl.) was found to be more effective than Ashodhita Guggulu in inhibiting the spasms induced by acetylcholine in experimental models16. Studies have shown that Shodhana can reverse the pharmacological actions of a drug by altering its phytoconstituents. The raw Kupilu seeds showed convulsions in experimental animals while convulsions were absent in animals administered with Ksheera Shodhita Kupilu17. It is true in case of Vatsanabha also where Shodhita Vatsanabha (aconite detoxified in cow’s urine) is converted into cardiac stimulant, whereas crude Vatsanabha is claimed to be cardiac depressant18. Hence the ultimate objective of the Shodhana process is to increase the biological availability of the drug further potentiating the biological efficacy.

Shodhana in Modern Perspective
Though there is no clear concept of Shodhana found in modern pharmacy, certain procedures are adapted to detoxify or to modify the quality as well as the quantity of the phyto constituent. Various methods like sifting, elutriation, lixiviation, acidification, precipitation, alkalinization etc are adopted. With column chromatography the required percentage of phyto constituent could be achieved and thereafter, the drug can be used as medicine. Recent advances in analytical techniques such as spectroscopy, electron microscopy, crystallography etc. can provide useful information about structural as well as compositional change in the raw
material during the different steps of Shodhana and its end product. 

**Importance of Media in Shodhana**

It is an amazing fact that even in olden days; classical texts have advocated particular media for each herb to be converted into a potent therapeutic agent without the aid of analytical or spectroscopic methods. Most of the toxic constituents are said to be transferred when the drug is processed in a particular media. It is also evident in recent researches that toxic alkaloids like Scopalamine and Hyoscyamine in Dattura (Datura metel Linn.) were transferred to the milk (taken as a media) thereby rendering it safe. Similarly Triphala katha Shodhita Guggulu showed better antispasmodic activity than distilled water Shodhita Guggulu. In another experimental study, better antimicrobial activity was observed in Kanji Shodhita Gunja seeds than other media. For drugs like Vatsanabha, Kupil and Bhallataka (Semecarpus anacardium Linn.) a number of media have been used for purification indicating that particular media were selected so as to obtain a desired pharmacological action.

**Need of Vacha Shodhana**

Shodhana has also been advocated for certain plants and plant materials even though they do not come under the classical Visha varga (group of poisonous drugs). Some of them are Vacha, Hingu (Ferula narthex Linn.), Lashuna (Allium sativum Linn.) and Haridra (Curcuma longa Linn.)

**Methods of Vacha Shodhana**

Shodhana for Vacha has been mentioned in Chakradatta for the first time and later in Bhaishajya Ratnavali. As per the classical reference, the rhizomes are to be boiled successively in Gomutra (Cow’s urine), Alambusha and Panchapallava katha followed by bhashpa swedana (fomentation) using Surabhitoyaa. As per the views of commentator Shri Nischalakara of Ratnaprabha commentary for Chakradatta, Alambusha is considered as Mundi and Surabhitoyaa as Gandhodaka. A detail method for preparation of Gandhodaka is also described in the same chapter. Several herbs like Twakpatri (Cinnamomum zeylanicum Breym.), Patraka (Cinnamomum tamala N.), Ushira (Vetiveria zizanoides Linn.), Musta (Cyperus rotundus Linn.) and Balamula (Sidá cordifolia Linn.) are taken in the amount of 25 pala (1250g) each. Kushtha (Saussurea lappa C. B. Clarke.) is taken in the amount of ardhapala (612g). They are boiled for overnight, dried in sun. A similar method is followed in Ottappalam (Kottayam) of Palakkad district, Kerala state where Vacha is soaked in Madhu mastu for overnight, then washed in warm water and dried in sun.

DISCUSSION

Vacha was known to mankind before 3000 years and its growing popularity by the passing years is evident by the fact that there are numerous therapeutic utilities involving the drug. This popularity was tainted in European countries because of some carcinogenicity reports in experimental animals due to administration of an isolated compound called β-asarone and ban on Vacha henceforth. However, it was revised by several committees but none of them ruled out the possibility of carcinogenic and genotoxic potential of β-asarone. In India, the scenario is different; Vacha is frequently used in clinical practice without any reports of adverse effects or toxicity. It is commonly used in the form of powder and occasionally decoction. The herb is composed of several active principles with divergent pharmacological activities. There is possibility that these principles act in a synchronized fashion and exert a cumulative beneficiary effect on the human system. But the isolated constituents of the plant drug may not give the same clinical response as the crude preparation of that plant drug. Very often, they produce side effects. For example, ephedrine an isolated herbal constituent has the well-known side-effect of speeding up the heart rate, but the whole plant Ephedra sinica Staph. does not has this effect as, apart from ephedrine, it contains other alkaloids that slows down the heart rate. Also toxicity could largely be due to misidentification and overdosing of certain constituents.

In case of Apasmaras (Epilepsy), it is advised to take Vacha for a longer duration of time indicating that prolonged administration may not cause adverse effects.
Also, Vacha Shodhana has not been noted in Brihattrayees (1500BC-550AD) but was mentioned for the first time in Chakradatta (11th century), a text devoted to therapeutic formulations, whereas it is also observed that many texts or Nighantu (Material medica) concerned with the drug profile have not reported its contraindications or Shodhana. These facts make us to assume that intension of Acharyas behind explaining the Shodhana methods, probably were meant to reduce any toxicity observed when Vacha was given for a long time or some other plant having toxicity potential was being used in the name of Vacha during that period. It is also possible that Shodhana was intended to reduce the Teekshana (Sharp/irritant nature) of the drug so that it can be administered safely in children or was aimed to increase its potency without increasing the dose because increase in the dose of Vacha will cause emesis.38

Most of the ingredients used in Shodhana have similar properties that of Vacha. Gomutra has been proved to be anti cancerous and using it as one of the media might restrict the chances of carcinogenicity if any. Mundi and M.65, 54 may potentiate Vacha further. Panchapallava is used in the Khohana (washing/cleaning) of Gandhi dravya (aromatic herbs) which can be considered as a type of Shodhana. These Gandhi drayas have Vacha as ingredient and hence it’s cleaning or processing done by Panchapallava khwatha suggests that Panchapallava is capable of doing Shodhana of Vacha as a single entity. Gandhodaka contains most of the drugs which are aromatic and having essential oils. Bashpa swedana with Gandhodaka might be aimed to imbibe certain essential oil components into the drug which might have been lost after Shodhana. The Gandhodaka also contain herbs like Bala and Musta which are vatahara further potentiating vatahara karmas of Vacha.27

The reason to select milk as one of the media by the folklore practitioners might be that, Vacha is administered to children for improving speech and milk is compatible to most of the children since birth. Mastu, another media of Shodhana, has been used as an ingredient along with Vacha in several yogas indicating its compatible nature when mixed with Vacha.25 This also shows that folklore method of Shodhana which involves both Mastu and Vacha may not produce any adverse effects when combined. Also Mastu is Kaphavatathara which further potentiates the action of Vacha.33

CONCLUSION
Shodhana for Vacha seems to be an uncommon procedure in the Ayurvedic armamentarium because of its only indications in Chakradatta. Also lack of therapeutic indications particularly for Shodhita Vacha makes us to assume that Shodhana was not particularly intended to reduce the toxicity, but after its pharmacological activity desirably. Since there is lack of reported data suggesting the methods for Shodhana of Vacha or its outcome, it can be considered as one of the essential subject to be scientifically evaluated through modern parameters and clinical trials to establish these facts.

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