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STUDY ON THE CONCEPT ON SODHANA WITH SPECIAL REFERENCE TO VISOPAVISAS

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ABSTRACT: *The authors attempts to present in this paper different treatments employed for Sodhana with different and its toxicity reduction level.*

INTRODUCTION

'Sodhana' is one of the important pharmaceutical processes described in Ayurvedic literature. It is employed partly to purify / detoxicate and partly to potentiate the effect of various kinds of drugs used in Ayurvedic Medicine with a view to reduce their toxic contents / effects and to enhance their pharmacotherapeutic properties. Historically 'Sodhana' is found described from the time to 'Caraka Samhita', though, in that period no details about this process are available. It is the time of 'Rasa Shastra' when it is developed and a number of procedures have been found mentioned for this purpose.

'Caraka' while elaborating the term 'Samskara' mentions certain fundamental Pharmaceutical procedures to detoxicate / alter or enhance the properties of the drugs. 'Sauca' is one such term mentioned by Caraka for 'Sodhana process' and also considered it necessary for 'Gunantaradhana'. According to apte's Dictionary 'Sauca' means cleansing or purifying of the drugs.

In pharmaceutical operations it is one of the most important procedures and claimed to be applicable for all kinds of drugs. In some cases it may be external cleaning while in others it may be internal purification. It means the drugs which contain external and / or internal impurities need their removal before these are subjected for internal use. The removal of external impurities does not involve much processing, while the removal of internal impurities require much more complex treatments / processing's. This is evident from the descriptions of 'Rasa literature' where number of procedures have been described for the purification of different types of drugs; such as 'Swedana, Bhavana, Mardana, Patana, Nirvapa, Avapa, Bharjana' etc.

There are three kinds of drugs from the point of view of sources of origin. Though, the 'Sodhana' is necessary for all the types of drugs in general, but in case of the drugs of 'visopavisa' groups and for a few parthiva type of drugs it is very necessary as these may contain more toxic materials than the other types. Present study is limited to various procedures required for the 'Sodhana' or 'Visopa-visa group of drugs.

The objective of the present study is to explain the concept of 'Sodhana' in terms of its effectiveness, in minimizing the toxicity

of the above type of drugs and in explaining alteration / potentiation of their therapeutic properties.

Singh, L. B. et. al (1979); Candrakant et. al. (1982) and Sharma, V. N. et. al (1983) have reported some of their findings about the effect of 'Sodhana treatment' on the toxicity and the efficacy of 'Vatsanabha', kupilu and 'Datura' respectively in their M. D. (Ay.) and Ph.D theses. According to their findings, 'Sodhana treament' reduces toxicity, modifies and / or potentiates some of the important therapeutic properties of these drugs.

Definition of Visa and Upavisa

Etymologically 'Visa' is that which causes 'Visannatva' (distress) and / or visada (Sadness) in the body. Thus 'Visa' has been defined as a substance which prove destructive to life and which possess Vyavayi, Vikasi, Usna, Tiksna, Ruka, Suksma, Asukar, Anirdesya rasa / Apaki etc. properties. And the drugs which possess these properties are called 'Visas' and those which are less in virulence than 'Visas' are called 'Upvisas' (sub-poisons).

Classification

Broadly 'Visas' are classified in Sthavara, Jangam and Krtrima types, of these 'Sthavara Visas' are those which belong to minerals or to poisonous herbs group while 'Jangama Visas' are obtained from the animals kingdom. The 'Krtrima Visas' are formed as a result of undesired compounding of drugs. Among the poisonous herbs-tuberous and / or root poisons are more sharp and virulent in their action.

In literature 'Rasarnava' appears to be the first text to mention about 'Visa' 'Upavisa' classification. After 'Rasarnava', 'Rasa Ratnakara', 'Rasendra Cudamani' and 'Rasa Ratna Samucchaya' have mentioned about five 'Visas' while other texts like 'Rasendra Cintamani', 'Sarngadhara Samhita', Bhava Prakasa & Ayurveda Prakasa have enumerated nine dravyas as 'Visas'. The Author of 'Rasatarangini' (20^{th} A D) described only 'Vatsanabha' in 'Visa' group considering its medicinal importance, common availability and frequent use in therapeutics. The other drugs of poisonous nature have been included in 'Upavisa' group by this text.

The literary review on the subject revealed that there is a difference of opinion amongst the authors regarding the drugs of 'UPAVISA' group. 'Rasarnava Kara' mentioned five dravyas in 'upavisa; group, while 'Rasaratna Samucchaya Kara' and 'Rasendra Cintamani Kara' enumerated seven drugs.

In later texts like 'Ayurveda Prakasa' and 'Yogaratnakara' it is raised upto nine while in 'Rasa Tarangini it has gone upto eleven. 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 as the time passed. The different poisonous herbs included in 'Upavisa' group by various texts are shown in Table No. I.

TABLE – I
The drugs of Upavisa group Enumeratd in different Texts

Sl. No.	Name of the drug (Upavisa)	Rasar nava	R. R. S.	R. Ci.	B. P.	R. Sam. Ka.	R. K. D	Ay. P.	Y. R.	Suta Pradi	R. Tar
1	Snuhiksira	+	-	+	+	+	+	-	+	-	+
2	Arkaksira	+	+	+	+	+	+	+	+	-	+
3	Datura	+	+	+	+	+	+	+	+	+	+
4	Karavira	+	+	+	+	+	+	+	+	+	+
5	Iangali	+	+	+	+	Halini	+	+	+	+	+
6	Visa Musti	-	+	-	-	+	-	+	+	+	+
7	Vijaya	-	+	-	-	-	-	+	-	+	+
8	Nilaka	-	+	-	-	-	-	-	-	+	+
9	Gunja	-	-	+	+	-	+	+	+	-	+
10	Ahiphena	-	-	+	+	-	+	+	+	-	+
11	Jayapala	-	-	-	-	-	-	-	+	-	+

Properties of Visas and their Pharmacological actions

'Caraka' in the 23rd chapter of cikitsastana has mentioned following ten properties of Visas, viz – Laghu, Ruksa, Asu, Visada, Vyavayi, Tiksna, Vikasi, Suksma, Usna and Anirdesyarasa.

Ruksa, Usna, Tiksna, Suksma, Asu, Vyavayi, Vikasi, Visada, Laghu, and Apaki are the 10 properties of 'Visas' mentioned by 'Susruta' in Kalpasthana, 'Susruta' mentions avipaki in place of aniredesyarasa. According to 'Caraka' and 'Susruta' following pharmacological actions are expected to be exerted by different properties attributed to the drugs of 'Visa' group.

Poisonous effects of Sthavara Visas

'Caraka' described the following poisonous effects of 'Sthavara Visa' such as Jwara, Hikka, Danta harsa, Galagraha, Phena Vamana, Aruci, Svasa and Murecha. Hence 'Sthavara Visas' should be used with care and after proper Sodhana.

Need for Sodhana

It is clearly mentioned in 'Bhava Prakasa' that the bad/toxic effects attributed to 'Asodhita Visas' are minimsed when these are used after being subjected to 'Sodhana' process. Hence 'Visas' should be subjected for 'Sodhana' before being used in therapeutics.

Various Sodhana Procedures mentioned for Visopa – Visas

Review of Ayurvedic literature reveals that the following 'Sodhana procedures' have been mentioned for different 'Visopavisa' drugs.

(i) Gomutra Nimajjana (soaking in cow's urine) for a prescribed period.

(ii) Swedana (boiling) in different liquids such as cow's milk, Goat's milk, cow's urine, vegetable extractives and Kanjika etc.

(iii) Bharjana (frying) with ghee or with out ghee.

(iv) Bhavana (Maceration / trituration), with vegetable extractives.

(v) Nishshehana (reducing of oily content)

(vi) Ksalana (washing) with hot water.

(vii) Nistvacikarana (Decortication).

Among the above procedures the treatment with cow's urine and boiling in cow's milk are the most common procedures applied for almost all the 'Visopavisa' drugs.

The details of the Sodhana procedures of each 'Visopavisa' drugs are shown in the table no. 3.

TABLE – II

Table Showing the properties and their Pharmacological actions according to different texts

Properties	Pharmacological Actions	
	Caraka	**Susruta**
Ruksa	Vata Kopana	Vata Kopana
Usna / Asaitya	Pitta Kopana	Pitta & Rakta Kopana
Suksma	Rakta Kopana	Penetrates all parts of the body and disturb their healthy state
Avyakta Rasa	Kapha Kopana Always follows Annarasa	---
Vyayayi	Spreads all over the body	Spreads all over the body and manifests its own effects
Tiksna	Destructive to Marma	Causes Mati moha and destruction to

		Marma bandhas.
Vikasi	Pranaghna	Destroys Dosa, Dhatu, Mala
Laghu	Durupakrama (Untreatable)	Difficult to be treated
Vaisadya	Allow Unobstructed movement of Dosas	Causes seven purging
Asu	Spreads Quickly	Causes sudden death
Avipaki	--	Difficult to be digested hence may cause distress in the body for a long time

Recent Researchers

Effect of Sodhana on Vatsanabha

Singh, L. B. et al (1979) conducted experimental study on Vatsanabha Sodhana and reported that '*Godugdha treated sample'* is much less toxic than the *crude* and *Gomutra treated samples* –

1. Its LD_{50} is 2.1 gm/kg in contrast to 130 mg/kg of crude and 1.7 gm/kg of Gomutra treated sample.

2. Cardiac Toxicity of 'Godugdha treated sample' is much less that that of 'Gomutra treated' and the 'crude' samples.

3. *Anti-inflammatory* property of 'Godudha treated sample' is found much more enhanced than that of 'gomutra treated' and the 'crude' samples.

4. *Analgestic* and *antipyretic* activity of *'Gomutra treated* sample' is much more *pronounced* that that of 'godugdha treated' and the 'crude' samples.

TABLE – III

Various Sodhana procedures for individual 'Visopavisas' mentioned by different texts

Sl. No.	Name of the drug	Substance used for Sodhana by different authors alongwith processes, Duration		
		Ayurveda Prakasa	**Yogaratnakara**	**Rasa Tarangini**
1	Vatsanabha	Cow's Urine (Immersion – 3 days) Cow's milk (boiling – 3 hours) Goat's milk (Boiling – 3 hours)	Gomutra (keep & dry in sunshine – 3 days)	Cow's urine (Immersion for 3 days) Goat's milk (boil – 3 hours)
2	Snuhi Ksira	-	-	Add ¼ Cinca drava and dry in sun-shine
3	Arka Ksira	-	-	-
4	Datura	Gomutra (Keep – 12 hrs & decoerticate seeds)	Gomutra (keep – 12 hrs)	Gomutra Godugdha – Boil – 3 hrs
5	Karavira	-	Godugdha (boil)	-
6	Langali	Gomutra (Keep – 1 day)	Gomutra (Keep – 1 day)	-
7	Visamusti	Ghrta (frying)	Goghrta (frying)	Go Ghrta (Fry) Godugdha (boil – 3 hrs) Kanjika (keep – 3 days & decorticate)
8	Gunja	Kanjika (boil 3 hrs)	Kanjika (boiling)	Kanjika (boil – 3 hrs) Godughda (boil – 6 hrs)

9	Ahiphena	Juice of Ginger (Bhavana)	Juice of Ginger (Bhavana)	Juice of Ginger (Bhavana)
10	Bhanga	Babbula Tvak Kwatha (boiling) Cow's milk (Bhavana)	Babbula tvak kwatha Cow's milk (Bhavana)	Babbula Twak kwatha Cow's Ghee (fry)
11	Bhallatak	-	-	Istika Curna (adding & rubbing followed by washing with water Narikelodaka Boil)
12	Jayapala	-	Cow's milk (decorticate & boil)	-

Effect of Sodhana on Kupilu

Chandra Kant et al. (1982) observed that the *milk treated Kucala* (strychnus Nux vomica) seeds are much less toxic than those of only *ghee* treated, *Aloes & ginger* treated and the crude samples, as the $L.D._{50}$ of 'milk treated' sample is found to be 600 mg/kg while that of 'ghee treated', Aloe & ginger treated' and the 'crude' samples is 205, 70 & 53 mg/kg body wt. respectively.

They further observed that cent percent lethal dose of 'milk treated Kucala sample' is 12 times more than that of *crude* sample of Nux- vomica seeds in their experiments conducted on the effect of diazepam on the lathelity of crude & Sodhita Nux –vomica seeds.

'Milk treated Kucala sample appears to impart *maximal anti-convulsant effect* while the crude sample is known to induce convulsions.

Sodhita Nux-vomica samples exert an anti-cataleptic action on experimental rats which justify the clinical use of the drug in some of the forms of muscular paralysis.

The sample treated with *Ginger-Aloes* showed *initial stimulant action* on the *spontaneous motor activity* in experimental mice. The same sample *did not potentiate the pentabarbitone hypnosis,* while the samples treated with *ghee* and *milk* showed significant *pentabarbitone hypnosis potentiating effect.* In clinical study the Sodhita sample of Kucala is found highly effective in Trigeninal Nurelgia cases.

Effect of Sodhana on Datura

Sharma V. N. et. al (1983) observed that 'Gomutra (*cow's urine)* treated' sample of Datura seeds showed much less toxicity than *'cow's milk* treated' and the 'crude' samples as the LD_{50} of *cow's urine* treated sample is found to be more than 1 gm/kg. while that of *cow's milk treated* and of the *crude* samples is *750 mg / kg* and *500 mg / kg* respectively.

They also observed that crude Datura elicits *cardiac toxic effect* in a dose of *50 mg.* while the *Sodhita sample* showed the same effect in *200 mg.* dose.

They further noted that the milk treated Datura sample showed better *analgesic activity* while the sample treated with cow's urine showed better *antipyretic action* as compared to the other samples.

Conclusions

A) Thus it can be concluded that different treatments employed for the Sodhana of different drugs are found to lessen the toxicity of the drug by increasing their LD_{50} level.

B) Particular Sodhana treatment has proved to potentiate particular pharmacological actions.

C) Some Specific Sodhana treatments are found to alter the original effect of the particular drug in particular cases.

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