



ROLE OF NIRVAPANA PROCESSING TECHNIQUE IN SHODHANA WITH SPECIAL REFERENCE TO TAMRA SAMANY SHODHANA

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ABSTRACT

Shodhana is the essential & primary step to be followed for rasadravyas before subjecting to further procedures. In short shodhana means not only purification to reduce or remove Physical & chemical impurities of the drug but it minimize or eradicate toxic effect and potentiate the therapeutical activity of the drug, because of which the drug will act in a predictable manner. Samanya shodhana of tamra with Nirvapana processing technique was carried out according to Rasaratna samuchaya. After completion of samanya shodhana of tamra patra was converted in to powder form and change in quantity & quality of liquid media was noted. Nirvapana contributes to reduce the particle size, Change in physical & chemical impurities and improving the therapeutical efficacy.

Keywords: nirvapana, tamra patras, samanya shodhana.

INTRODUCTION

The concept of shodhana has been defined by Ayurvedic pioneer acharya charaka in charaka samhita. saucha karana (shudhi karana) is a process in which removal of unwanted or toxic properties ¹

The same concept of shodhana was adopted by rasa acharyas in rasashastra 8th AD onwards for shodhana of herbal, Animal, metal or mineral origin drugs. Thus shodhana is a process in which toxic, unwanted properties are eliminated out & alteration, additional, properties are observed. Various physical, chemical or biological changes in the drug are observed.

According to rasa acharyas shodhana process is carried out by subjecting drug in to various processing techniques like bhavana, nirvapana, dalana, swedana etc.²

The shodhana process for individual rasadravya has been also explained, apart from shodhana process for group of dravyas. Ex: In common samanya shodhana process for dhatu group³ & sadharana rasa group⁴ have been explained.

Nirvapana is one among the procedure adopted for shodhana of metals⁵ etc. in which the thin metal sheets are heated to red hot and quenching in the prescribed liquid Medias like swarasa, kwatha, dugda, kanji^{6,7} etc.

MATERIALS AND METHODS

Raw copper flakes, Tila taila (*Sesamum indicum* oil), Takra⁸ (butter milk), Gomutra (Cow's urine), kanji, Kulatha (*Dotichos biflorus*) kwatha

Equipment: Steel vessels, Gas cylinder, stove, and Big spatula etc.

Raw copper flakes having mean thickness of 0.0329 mm and size of 2 X 3 inch flakes were heated up to red hot on gas stove then immediately immersed in tila taila. After cooling washed with hot water & dried. This process was repeated for seven times. Each time fresh tila taila was used for nirvapana procedure. Same method of nirvapana was followed with Takra, Gomutra, Kanji and Kulatha kwatha media.

OBSERVATION & RESULTS

NIRVAPANA IN TILA TAILA

Raw copper Flakes were gradually changed to soft after each nirvapana process in tila taila. Deep color of tail was observed after nirvapana. Darkness of oil was more after 7th nirvapana process compared to 1st. Stickiness of oil was reduced after the nirvapana & Oil lost its stickiness after 7th nirvapana compared to after 1st nirvapana procedure.

NIRVAPANA IN TAKRA

After Nirvapana process in tila taila Sample was subjected to nirvapana in takra for 7 times. Tamra patra were started peeling layer by layer from 3rd nirvapana. At the end of 7th nirvapana copper flakes & powder remained at the bottom of the vessel was collected. During the heating the flakes green and blue color flames were observed from 2nd nirvapana onwards. Color of takra which was white gradually appears like suspension having black colour suspended copper particles from 3rd nirvapana onwards. After completion of the every procedure Takra was filtered and copper particles were collected washed with hot water & dried, reused for next nirvapana procedure. Color of takra turned to green color after the process.

NIRVAPANA IN GOMUTRA

After nirvapana process in takra sample was subjected to nirvapana in gomutra for 7 times. Tamra patra were started peeling layer by layer, thus collected powder was Black in color. Deep color of gomutra was observed after nirvapana and Gomutra smell was observed in vapours. 3 liters of gomutra used for each nirvepana finally 1.6 – 1.8 liters remained after completion of nirvapana.

NIRVAPANA IN KANJI

Color of kanji was turned to dark color after nirvapana process may be due to the powdering of copper flakes. Kanji smell was observed in vapor. Conversion of copper flakes in to powder form was

continued & the powder was black in color. After nirvapana with kanji was kept in jar to sediment the copper pieces, thus sedimented copper powder was used for next nirvapana process

NIRVAPANA IN KULATHA KWATHA

Color of Kulatha kwatha turned to dark color after nirvapana process may be due to presence of powder of copper flakes. Kulatha kwatha kept in measuring jar to sediment copper particles then sedimented part collected & used for next process. After this process supernant surface of kwatha was green in color. Conversion of copper flakes to powder form continued & the powder was black in color.

Table 1: Change in quantity of liquid media, pH before & after nirvapana process

Sl No	Liquid media	Nirvapana procedure No	Change in quantity in liter		Change in pH	
			Before	After	Before	After
1	Tila Taila	1	2	1.725	4.3	1.4
		2	2	1.850	4.1	1.4
		3	2	1.800	4.2	2.8
		4	2	1.800	4.3	3.3
		5	2	1.800	4.1	4
		6	2	1.800	4.2	5.9
		7	2	1.800	4.3	10
2	Takra	1	3	2	4.2	4.5
		2	2.5	1.4	4.0	5.5
		3	2.5	1.3	4.0	4.9
		4	2.5	1.2	4.3	5.4
		5	2.5	1.5	4.3	4.3
		6	2.5	0.8	4.2	5.4
		7	2.5	0.8	4.2	5.5
3	Gomutra	1	3	1.8	7.9	8.3
		2	3	1.7	7.3	8.6
		3	3	1.6	6.9	8.6
		4	3	1.6	7.3	8.8
		5	3	1.62	7.1	8.7
		6	3	1.6	7.4	8.2
		7	3	1.6	7.6	8.6
4	Kanji	1	3	1.8	3.4	4.9
		2	3	1.7	3.3	5.0
		3	3	1.6	2.9	4.8
		4	3	1.6	3.3	4.9
		5	3	1.62	3.2	4.8
		6	3	1.6	3.3	4.8
		7	3	1.6	3.4	4.9
5	Kulatha kwatha	1	6.7	8.4	6.7	8.4
		2	6.9	8.0	6.9	8.0
		3	6.7	7.8	6.7	7.8
		4	4.8*	6.5	4.8*	6.5
		5	4.7*	6.3	4.7*	6.3
		6	4.7*	6.2	4.7*	6.2
		7	4.5*	6.1	4.5*	6.1

Note: after 16 hour of kwatha preparation

DISCUSSION

Copper flakes were collected for the pharmaceutical study of samanya shodhana. Thickness of the copper flakes was measured by digital screw guage and the mean thickness of copper flake was 0.329 mm.

SAMANYA SHODHANA IN TILA TAILA

Initially the copper flakes were hard in nature gradually turned to soft. The color of oil turned to dark at the end of the procedure.

Color of tila taila after nirvapana turned to dark color & Stickiness of oil was lost during the procedure.

SAMANYA SHODHANA IN TAKRA

Conversion in to small particles of copper flakes was observed. It may be due to larger surface area exposed to heat & takra. After nirvapana suspended copper particles were observed in Takra. Takra was kept in stationery then it was filtered, residue was re used for the next nirvapana procedure. This minimized the wastage particles of tamra patra. During this period color of takra was changed to green.

SAMANYA SHODHANA IN GOMUTRA

Conversion of flake form of copper in to small particles was continued during gomutra nirvapana procedure. Color of gomutra was changed to dark color after nirvapana procedure due to presence of tamr patra particles.

SAMANYA SHODHANA IN KANJI & KULATHA KWATHA

Conversion of flake form of copper in to particles was continued in kanji & kulatha kwatha too. After nirvapana suspended particles of tamra patra were collected by filtration & also by keeping the liquid in container stationary (without moment) thus allowing to sediment at the bottom. Color of both liquid media were changed after nirvapana. After completion samany shodhana out of 950 gm of raw tamra flake 910 gm of shodhita tamra flake powder was obtained.

CONCLUSION


Samanya shodhana process of copper flakes was carried out by adopting nirvapana process with Tila taila, Takra, gomutra, kanji & Kulatha kwatha according to Rasaratna Samuchaya. Copper flakes were converted in to powder form & the color was changed to black. During the process of nirvapana pH of all liquid media were recorded before & after the procedure. Significant change in pH was noted in liquids after nirvapana process in shodhana. After samany

shodhana of tamra patra powder became suitable for further process to get better therapeutic properties.

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