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COMPARATIVE PHARMACEUTICAL STUDY OF NIRAGNI AND SAGNI VRANARAKSHASA TAILA

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ABSTRACT

Samskara is the process in which inherent properties of substance are transformed. Sneha Kalpana is one of the important dosage form among the secondary preparations which is prepared by niragni and sagni paka methods. Aditya paka is also known as bhanupaka or surya paka. It is a method of preparation where taila is subjected to heat by exposure to sunlight for a specific time period. This method is practiced to prepare taila paka from the drugs which are having volatile property and are heat sensitive in nature.

Vranarakshasa taila is an oil based herbo-mineral formulation which has been explained as aditya paka taila which is indicated in vrana, where the source of heat used is sunlight. Thus the preparation requires more time for paka and summer season is preferred, there arises the disadvantages of contamination due to exposure to open atmosphere. To overcome this, here the source of heat was changed to agni paka method. The oil was prepared by both niragni and sagni paka and comparison was done and differences were studied.

Keywords: Sneha, adityapaka, Vranarakshasa taila, niragni

INTRODUCTION:

Samskara is the process in which qualitative changes are seen because different procedures are carried. It is the process in which inherent properties of substance are transformed. This is done by dilution, application of heat, cleansing, churning, storing in a specific place, flavouring, preservation, through container, etc. all the samskara are not applicable for all the dravya; specific samskara is used for specific substance. Sneha kalpana is a secondary kalpana where the fat soluble active constituents of the drugs are transferred into sneha by sneha paka vidhi. Vranarakshasa taila is an oil based herbo-mineral formulation indicated in vrana as topical agent **[1]**. It comprises of shuddha parada, shuddha gandhaka, shuddha haratala, shuddha manahashila, naga sindhoora, tamra bhasma, shuddha vatsanabha, rasona and sarshapa taila.

In this study, the Vranarakshasa taila was prepared according to classical method as per reference of Bhaishajya Ratnavali and modified method by niragni siddha and sagnisiddha paka method.

Aim and objectives

Preparation of Vranarakshasa taila, as per the standard operative procedure by two different methods.

a) By using sun light as source of heat[1].

b) By using fire as source of heat **[2]**.

MATERIALS AND METHODS:

Materials

- Raw drugs required for the preparation of vranarakshasa taila were collected from SDM Ayurveda pharmacy, Udupi.
- Purification of raw drugs and processing of vranarakshas taila was done in Rasashastra and Bhaishajya Kalpana Practical lab, SDM Ayurveda College, Udupi.

Preparation of Nirgni vranarakshasa taila [3] (NVT)

Table 1: Ingredients of Niragni vranarakshasa taila

Sl. No.	Ingredients	Quantity
1	Shuddha Parada [4] (Purified Mercury)	78.12gm
2	Shuddha Gandhaka [5] (Purified Sulphur)	78.12gm
	Kajjali [6] (Combination of Parada and Gandhaka)	154.28 gms
3	Shuddha Haratala [7] (Purified Orpiment)	78.12gm
4	Girisindhoora (Purified Mercuric oxide)	78.12gm
5	Shuddha Manahashila [8] (Purified Realgar)	78.12gm
6	Tamra bhasma (Calyx of Copper)	78.12gm
7	Shuddha Vatsanabha [9] (Purified *Aconitum ferox*)	78.12gm
8	Nistusha Lashuna (*Allium sativum*)	78.12gm
9	Moorchita Sarshapa taila [10] (Processed Mustard oil)	1250ml
10	Water	5000ml

Method of preparation:

Vranarakshasa taila was prepared in two batches. First batch was prepared using fire as heating source as per standard references of sneha paka vidhi (SVT). Second batch was prepared using sunlight as source of heat (NVT). The differences in organoleptic characters were analyzed.

Principle: Aaditya paka

Procedure: Niragni snehapaka

Shuddha haratala, shuddha manahshila and shuddha vatasanabha were made into fine powder individually. Nistusha lashuna was made into kalka form by pounding in a khalvayantra. Kajjali was taken in khalva yantra, fine powder of shuddha haratala, shuddha manahshila, naga sindhoora, tamra bhasma and shuddha vatsanabha were added in chronological order and mardana was done. Lashuna kalka was added to the above mentioned homogeneous mixture of all the drugs and mardana was done. Moorchita sarshapa taila, kalka and water were taken in an iron vessel and stirred then iron vessel was covered with thin cotton cloth to avoid contamination with dust and kept daily from morning to evening (9am-5pm) under sun light in a clean, dry and isolated place where better exposure to sunlight was present. Daily the oil was stirred and temperature of both atmosphere and oil was noted three times a day i.e., 9am, 12pm and 5pm. Average temperature difference was observed in both climate and oil during the procedure and the process was carried out till evaporation of water content. Oil was tested repeatedly for the assessment of completion of the procedure.

Table 2: Average temperature difference observed in both climate and oil

Timings	Average temperature in degree Celsius	
	Climate	Oil
9 am	30	31
12pm	37.5	48.7
5pm	32.1	40.8

Table 3: Changes observed in oil during the procedure

Day	Appearance in oil
1st day	Brownish in colour with shining particles floating on the surface of oil
10th day	Same appearance was maintained
After 15-20 days	Brownish in colour with reduced shinning particles floating on the surface of oil
After 40-50 days	Colour was black and thick in consistency Absence of shinning particles with strong odour of lashuna
After 60-70 days	Colour and odour persists the same, there was appearance of water drops on surface of oil. Morning hour's oil was thicker in consistency as day progresses oil attained less viscous till noon.
91st day	Consistency was semisolid and no sound was heard when dropped on fire. Oil was devoid of moisture content

Temperature difference observed up to 45 days (During March and April)

Morning temperature of oil was same as climatic temperature. Afternoon with the rise in temperature taila got heated quickly oil temperature was more than climatic temperature and also observed temperature difference was more. Towards evening there was gradual fall of oil temperature and oil temperature was more than that of climatic temperature.

Temperature difference observed after 45 days (During April and May):

Even though climatic temperature was high, oil took more time to get heated, gradual rise of temperature was observed and oil temperature was sustained for longer period. Not much temperature difference was observed between oil and climate throughout the procedure.

Procedure: Sagni vranarakshasa taila (SVT)

Shuddha haratala, shuddha manahshila and shuddha vatasanabha were made into fine powder individually. Nistusha lashuna was made into kalka form by pounding in a khalva yantra. Kajjali was taken in khalva yantra. Shuddha haratala, shuddha manahshila, naga sindhoora, tamra bhasma and shuddha vatsanabha were added in chronological order and mardana was done. After homogeneous mixture of all the drugs lashuna kalka was added and mardana was done. In an iron vessel moorchita sarshapa taila was taken, kalka and water were added to it and the vessel was subjected for heating on gas stove over mild temperature, daily from morning till evening (9am-5pm). Daily the oil temperature of both flame and oil was noted when it attained taila siddhi lakshana (test of perfectness), then the oil was filtered, cooled and stored in closed container. Sneha siddhi lakshanas were tested repeatedly when oil was nearing completion. Filtration was done immediately with care to avoid the spillage of it after filtration, residue (Kalka) was squeezed properly to get the oil retained in it.

Table 4: Average temperature observed in both flame and oil

Timings	Average temperature in degrees Celsius	
	Temperature of flame	Temperature of Oil
9 am	467	27
12pm	467	85
5pm	467	85

Observation:

Table 5: Changes observed in taila during procedure

Day	Change in oil
1st day	Brownish colour Shiny particles were present on surface of oil
3rd day	Oil was bit thicker in consistency Kalka turned to dark brown
After 6 days	Colour of oil turned to black Shiny particles reduced
After 11 days	Oil attained thicker consistency Attained ugragandha No sound was heard when kalka and taila was dropped on fire Not much foam was observed When kalka was rolled between the fingers it attained wick shape

RESULTS:

Table 6: Results in both the Taila

Sl. No.	Parameters	Nirgi vranarakshasa taila (NVT)	Sagni vranarakshasa taila (SVT)	
1	Colour	Jet black	Brownish –black	
2	Consistency	Thick paste like	Viscous oily	
3	Gandha	Mild odour of garlic	Strong odour of garlic	
4	Duration	91 days	11days	
5	Maximum temperature	Oil -56^{0}C Climate -46^{0}C	Oil -85^0 C Flame-467^0 C	
6	Initial quantity	Oil 1250ml (1375g)+ Wt. of Kalka dravya= 1998gm Water =5000ml	Oil= 1250 ml Water= 5000 ml	Kalka= 623gm
7	Final quantity	1440 gm	1000 ml	Kalka= 680gm
8	Loss	558gm	250ml oil loss	57g Kalka gain
9	% Loss	27.92%	Oil= 20% loss	Kalka= 9.1% gain

DISCUSSION:

The two samples of vranarakshasa taila were prepared by both classical and modified method. In both the preparation, iron vessels were taken of same size and shape. Niragni Vranarakshasa Taila was prepared under sunlight and Sagni Vranarakshasa Taila prepared by using fire. The colour of NVT was jet black due to presence of kalka dravya along with the oil and was thick paste in consistency. In SVT it was brownish black, this is due to the chemical reactions that might have taken place between the oil and kalka dravya due to constant temperature throughout the procedure; and the consistency was less viscous in comparison to NVT.

Strong garlic odour was appreciated in SVT as compared to NVT because of short duration of process. Long duration of process is responsible for more and more evaporation of volatile contents of lashuna which are responsible for smell. Hence SVT might have emitted strong garlic smell as compared to

NVT preparation. The duration for NVT was longer i.e., 91 days as it was prepared under sunlight. The time taken for the preparation of SVT was 11 days. In both the preparations oil was subjected to heat was 8 hours per day. In NVT morning and evening temperature was less and mid-day there was peak temperature i.e., there was temperature variation according to diurnal variation. In case of SVT same temperature was maintained from morning to evening hence it was possible to complete the procedure within a short period.

The maximum climatic temperature observed in NVT was 46^0C and oil was 56^0C. As preparation was done in summer season (March-May) the temperature difference between oil and climate was of only 10^0C. In SVT flame and oil temperature was 467^0 C and 85^0C respectively, even though the flame temperature was more, oil temperature was maintained to 85^0 C- 90^0 C by increasing the distance between flame and oil containing vessel with the help of stand and also there was temperature difference. In NVT separation of oil from kalka was found difficult as both are compactly mixed with each other. In case of SVT separation of oil from kalka was found easy. In SVT loss of oil was 20% but in NVT separation of oil from kalka was tough.

CONCLUSION:

Vranarakshasa taila is a herbo mineral oil preparation that has a combination of two metals namely mercury and calyx of copper, minerals like realgar, orpiment, mercuric oxide, with garlic and purified aconite as herbs. Aditya paka or processing through the medium of sunlight is the method mentioned in the treatise of Ayurveda. But the time duration for it to attain the test of perfectness is prolonged. Hence, the preparation through medium of heat was adopted where the same ingredients were taken and heated till it attained the test of perfectness.

The duration for the preparation for NVT was 91 days and for SVT was 11 days. In NVT separation of oil from kalka was difficult, colour was jet black, was thick in consistency and strong garlic odour was appreciated whereas the SVT sample was viscous, with mild garlic odour and the loss of oil was 20%. Thus, pharmaceutically it can be said that sagni paka or preparation employing heat as a medium will result in quicker preparation of the oil.

More research work to evaluate the effect on wounds needs to be carried out to know the efficacy of the samples.

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Photograph of Pharmaceutical study

Ingredients and preparation of kalka

Kajjali

Shuddha haratala

Girisindhoora

Shuddha manashila

Tamra bhasma

Lashuna kalka

Method of preparation

Niragni vranarakshasa taila

Sagnipaka vranarakshasa taila

Moorchita Sarshapa taila

Addition of water

Addition of kalka

Preparation under sunlight

Preparation by using fire

Two Samples of Vranarakshasa taila