



PHARMACEUTICAL AND PRELIMINARY ANALYTICAL STUDY OF AGNIDAGDHA VRANAHARA MALAHARA

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Abstract: Ayurveda, the science of life has holistic approach towards treatment of diseases. It describes both internal and external remedial measures. Malahara Kalpana is a semisolid dosage form for external application in Ayurveda pharmaceuticals. It is similar to ointment in contemporary pharmaceuticals. Usually, it is prepared with bases like taila, sikta, gandha biroja, ghrita etc. Agnidagdha vranahara malahara is herbo-mineral formulation falling under the category of Malahara Kalpana. It consists of Narikela taila, Sikta and Sudha as ingredients. It is indicated in Agnidagdha vrana, yoni daha, yoni kandu and yoni kshata. It is a less explored formulation. Hence an attempt was made to prepare this formulation as per the reference. Organoleptic characteristics like colour, odour, touch, consistency and physico-chemical parameters like pH, loss on drying, spreadability and rancidity were assessed and the results were recorded.

Key words: Malahara, Agnidagdha vranahara malahara, dagdha vrana, Narikela taila, Sikta, Sudha churna

INTRODUCTION:

Ayurveda, an ancient system of medicine deals with 'Ayu' in entirety and hence it is known as science of life. Aiming at maintenance of health in healthy individuals and treating the ailments of diseased¹, the science follows holistic approach for the treatment of diseases. It includes both internal and external therapies. Different types of external therapy are described in Ayurveda including lepa, upanaha and malahara.

Malahara kalpana, a semisolid dosage form for external application in Ayurveda pharmaceuticals. It is usually prepared with bases like taila, sikta, gandha biroja, ghrita etc., by adding fine powder of specified drugs². Though this kind of formulations are mentioned in brihat trayi and other classical books of Ayurveda, the term malahara was first mentioned in Yogaratnakara. 'Malahara' word is derived from 'maraham or

malaham', originated from Unani system of medicine³. It is called so because it does harana (removal) of mala from vrana, vidradi and other twak vikara. Malahara is similar to ointments in contemporary pharmaceuticals.

Agnidagdha vranahara malahara is a herbo-mineral formulation falling under the category of Malahara Kalpana. It is explained in Rasatantrasara evam siddha prayoga sangraha. It consists of Narikela taila, Sikta and Sudha as ingredients and indicated in Agnidagdha vrana, yoni daha, yoni kandu and yoni kshata⁴.

MATERIALS AND METHODS:

I. Collection of raw drugs:

All the raw drugs (Fig.1-3) were procured from Department of Rasashastra and Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan.

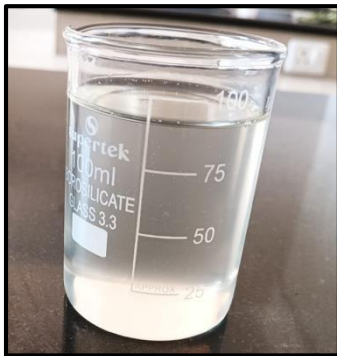


Figure-1: Narikela taila



Figure-2: Sikta



Figure-3: Sudha

II. Pharmaceutical study:

Medicine was prepared in practical laboratory of Rasashastra and Bhaishajya Kalpana department, SDMCAH, Hassan.

To prepare Agnidagdha vranahara malahara, initially Sudha was pounded in a clean khalwa yantra and obtained fine powder was kept aside. Then, Narikela taila was taken in a stainless-steel vessel, heated over mild fire until fumes were observed. To this, sikta was added and heated till it melted completely. Liquified mixture was filtered through clean cotton cloth. Sudha churna prepared earlier was added to the filtrate and mixed well. The mixture was then taken in a porcelain khalwa and triturated to get homogenous product. After attaining semisolid consistency at room temperature, Agnidagdha vranahara malahara was weighed and stored in an air-tight container (Fig.4-9).



Figure-4: Powdering Sudha



Figure-5: Melting sikta in narikela taila



Figure-6: Filtration



Figure-7: Addition of Sudha churna



Figure-8: Trituration in khalwa



Figure-9: Final product

III. Analytical study:

Analytical study was carried out in Quality control laboratory of Rasashastra and Bhaishajya Kalpana department, SDMCAH, Hassan.

3.1. Organoleptic characters :

Organoleptic characters of agnidagdha vranahara malahara like colour, odour, touch and consistency were assessed using sensory organs.

3.2. Homogeneity⁵:

Homogeneity of agnidagdha vranahara malahara was tested by visual inspection after the malahara had been set in the container. It was tested for appearance and presence of any aggregates.

3.3. Determination of pH⁶:

To calibrate the pH meter, tablets of pH 4, 7, and 9.2 were dissolved in 100 ml of distilled water. The meter was warmed for 30 minutes. The probe was dipped in the pH 4 buffer to set the reading, then washed before repeating for pH 7. The pH 9.2 was measured without adjustment, followed by washing the probe again.

10% aqueous solution of sample was taken in a beaker and pH probe was dipped in the solution, reading was recorded. This test was repeated for three times and the average value was taken as result.

3.4. Loss on drying at 105°C⁷:

A 10 g sample was placed in a pre-weighed evaporating dish and dried in a hot air oven at 105°C for 5 hours. After cooling in a desiccator, it was weighed. This drying and weighing process continued hourly until the weight difference was no more than 0.25%. The percentage loss was calculated based on the sample's initial weight.

3.5. Spreadability⁸:

Spreadability was assessed using a wooden block with a pulley. About 2 g of the sample was placed between two glass slides, with 250 g weight applied for 5 minutes to create a uniform gel film. Excess gel was removed, and a force of 150 g was applied to the top slide. The time taken to move 7.5 cm was recorded.

Spreadability was calculated using the formula: $S = M \times L / T$.

3.6. Rancidity⁹:

To test for rancidity, 1 ml of melted sample was mixed with 1 ml of concentrated hydrochloric acid and 1 ml of 1% phloroglucinol in diethyl ether. After 10 minutes, a color change to pink or red indicated oxidation levels: pink for slight oxidation and red for definite oxidation.

OBSERVATION AND RESULTS:

Sudha was white non-lustrous solid, easy to powder. Sudha churna was white amorphous powder, narikela taila was translucent liquid and sikta was yellowish smooth solid. Characteristic aromatic odour was observed while heating narikela taila. On melting of sikta, the liquid mixture had acquired brownish tinge. Colour turned to milky white on addition of Sudha churna to the mixture. On cooling, the mixture attained semisolid consistency and creamy white colour. It took about 1 hour 15 minutes for completion of procedure.

Pharmaceutical observations, organoleptic characteristics, physico-chemical parameters of Agnidagdha vranahara malahara are tabulated (Tables 1-3).

Table-1: Ingredients of agnidagdha vranahara malahara

Sl. No.	Ingredient	Common name	Properties ^{10,11,12}	Quantity
1	Narikela taila	Coconut oil	Brimhana, madhura, pitta-vata shamaka	80g
2	Sikta	Bee wax	Mridu, snigdha, bhutaghna, vrana ropana, sandhanakara.	10g
3	Sudha churna	Lime	Krimihara, pitta prashamana, vrna ropana.	20g
Total quantity obtained				107g
Percentage of yield				97.2%

Table-2: Organoleptic characteristics

Sl. No.	Organoleptic character	Agnidagdha vranahara malahara
1	Colour	Creamy white
2	Odour	Characteristic
3	Touch	Soft
4	Consistency	Semisolid

Table-3: Physicochemical parameters

Sl. No.	Physicochemical characters	Agnidagdha vranahara malahara
1	Homogeneity	Homogenous
2	pH	10.97
3	Loss on drying	0.7%
4	Spreadability	398.93 g.cm/s
5	Rancidity	-ve

DISCUSSION:

Agnidagdha vranahara malahara, a semisolid dosage form was prepared using Narikela taila, Sikta and Sudha churna. The formulation is useful in treating conditions like agnidagdha vrana, yoni daha as the ingredients possess pitta shamaka, vrana ropana and krimihara properties (Table-1). Coconut oil was found to fasten wound healing process in a study conducted on rabbits. It acts as a moisturizer and provides an optimal environment for wound healing. Phytosterols present help to reduce inflammation¹³. Another study has demonstrated that a bandage impregnated with beeswax olive oil and butter increased TGF-b1 and VEGF-a expressions, augmented the regeneration of epidermis and dermis, increased fibroblast activity and keratinization, showed better wound contraction levels¹⁴. Also, calcium has been identified to influence wound healing process¹⁵.

According to the reference of the formulation, drugs were taken in the ratio of 8:1:2. It is slightly different from the general method of preparation of Sikta taila¹⁶. This might have influenced soft semisolid consistency of the final product making it easy to apply. Liquified mixture was filtered through cloth to separate physical impurities. The product was homogenous because of finely powdered Sudha and thorough trituration. Yield of final product was 97.2%, loss may be in the form of impurities filtered, malahara sticking to the vessel while transferring.

On analysis, pH of sample was found to be 10.97 which is alkaline, owing to alkaline pH of Sudha churna. Loss on drying was 0.7% which signifies less quantity of moisture in the product which has an influence on stability of product. During spreadability test of Agnidagdha vranahara malahara, it took 2.82 seconds to cover 7.5cm slide length by applying 150g of weight. Shorter time indicates better spreadability and hence the product has good spreadability. Rancidity test was negative for the product after three months of preparation whereas slight oxidation was observed after one and half years of preparation.

CONCLUSION:

Agnidagdha vranahara malahara is a herbo-mineral semisolid dosage form. It is used for external application in dagdha vrana, yoni daha, yoni kshata and yoni kandu. Pharmaceutical study demonstrated ease of preparation and analytical study provided preliminary standard for future reference. In-vivo and clinical researches on Agnidagdha vranahara malahara can aid in exploring therapeutic potential of the formulation.

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