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# Standarad operational procedure of *Keshanjana* – An Ayurvedic formulation

**Research Article**

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**Abstract**

*Masi Kalpana* is one of the pharmaceutical formulations in Ayurvedic pharmacy used in variety of pathological conditions mainly in external/local applications. *Keshamasi* has been propounded in *Anjana* (collyrium) dosage form mixed with *Goghrita* as *Keshanjana* in the treatment of *Sukshakshipaka* (Dry Eye Syndrome) by *Acharya Vagabhatta*. This preparation is not in practice; & owing to the sensitivity of ocular therapeutics issue as the method of preparation and quantity of its ingredients is in obscure manner in the literature, this formulation – *Keshanjana* was taken up for developing Standard Operative Procedure / standardization and clinical evaluation in Dry Eye Syndrome in an EMR project after a pilot study in a PG thesis work.

**Key words:** *Keshamasi, Keshanjana, Shuskakshipaka,* Dry Eye Syndrome

## Introduction:

*Keshanjana* is an *Ayurvedic* formulation prepared out of *Kesha Masi* - scalp hair ash prepared by burning it by a special pharmaceutical method mixed with clarified *Goghrita*. This particular preparation is indicated for treating *Shushkashipaka* (dry eye syndrome*) in both *Vagbhatta Samhitas* - classical *Ayurvedic* treatises. A very brief method of preparation of this medicine is given in these classics which as per the knowledge of the author have not been practiced by any one so far.

This topical Ayurvedic formulation in *Raskriya Anjana* (ointment) dosage form was tried by Prabhakar Vardhan , Dhiman KS (1) and was found to be a cost effective, better and comparable with available tear substitutes in the market having no adverse effects. Consequent upon this an EMR project on the Standardization and clinical evaluation of *Keshanjana* has been granted by CCRAS, Dept. Of AYUSH, GOI, New Delhi wherein the main author is the principal Investigator.

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## Classical Method of preparation of *Keshanjana*:

Cut and washed Scalp hairs are to be mixed with *Goghrita* and rubbed over the mirror a placed in *Samputa* and subjected for incineration in a *Gajputa*. The obtained black mass- *Keshmasi* thus obtained is to be mixed with *Goghrita*, thus obtained final product is termed as *Keshanjana*. In this classical method of

preparation of *Keshanjana* amount of ghee to be added in *Masi* preparation as well as to *Keshanjana* preparation is not specified. Also the duration of rubbing the *Kesha-Ghrita* mass on the mirror is not indicated. To complete these gaps observed in the pharmaceutical process of *Keshanjana* all operational procedures were recorded and presented as SOPs of *Keshanjana* which are presented in this article.

**Materials and methods:**

**Procurement of raw material:**

Male and Female scalp hairs (*Kesha*) were collected from various saloons in village Paprola and Palampur. Total quantity of raw material was 7 kg.

**Pre-treatment of raw materials:**

Foreign materials were removed from the hairs; thereafter hairs (Female & Male Hairs) were washed with medispirit (Spirit used in medical, surgical and laboratory purpose). Washed hairs were spread over enamel tray and subjected for drying under sun light for 2 days.

**Preparation of *Masi*:**

The *Masi* was prepared by using *Gajaputa*. Hairs were smeared with *Goghrita* on glass slab. After proper mixing, mixture was equally divided in four parts & kept in four earthen saucers, these saucers were covered by another earthen saucer and junction was sealed by 3 alternate layer of mud smeared cloth and again allowed for complete drying. Then this was subjected for *Putapaka* in the conventional *Puta* (30 *Angulas* = 57 cm in length, breadth & height). After placing ignited cow dung cakes & filling 2/3rd part of the pit with cow dung cakes the *Sharava Samputa* was kept and remaining 1/3rd part, was filled with cow dung cakes to cover the *Sharava Samputa*. After complete burning it was allowed for self cooling. *Masi* was collected from the inner surface of earthen saucers recovered from *Puta* after self cooling, and then collected *Masi* was packed in air tight bags and kept for further processing. Same method was adopted for the preparation of female *Keshamasi*.

**Preparation of *Keshanjana* and ointments (Male and Female):**

The *Keshanjana* prepared by using male and female *Keshamasi* by adopting same method. During this process, *Masi* was transferred into a mixer grinder and sieved through 400 # to secure least particle size of *Masi*. Afterward, initially *Keshamasi* and *Goghrita* was taken in the ratio of 1:2 and triturated for 6 hrs. Then gradually 100 g of *Goghrita* was added and triturated again upto the formation of uniform mixture. After complete attrition, the *Keshanjana* was weighed and filled in to ointment tubes of 3 g. The same process was repeated by using Petrolatum as an ointment base instead of *Goghrita*.

**Table 1:** Results and observation during preparation of *Keshamasi*:

| Sr. No. | Observation | Male | Female |
|---|---|---|---|
| 1. | Scalp hairs | 3 kg | 3 kg |
| 2. | *Goghrita* | 2 kg | 2 kg |
| 3. | Yield of *Masi* | 630 gm | 630 gm |

**Table 2:** Results and observation during sieving:

| Observation | ***Keshmasi* (Male)** | ***Keshmasi* (Female)** |
|---|---|---|
| Weight of *Keshmasi* | 400 | 300 |
| Final weight of *Keshmasi* | 381.9 | 285.6 |
| Loss | 18.1 | 14.40 |

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**Table 3:** Results and observation during preparation of various formulations:

| **Observations** | **Male *Keshnjana*** | **Female *Keshnjana*** | **Male *Keshmasi* Ointment** | **Female *Keshmasi* Ointment** |
|---|---|---|---|---|
| Weight of *Keshmashi* (g) | 50 | 50 | 25 | 25 |
| Weight of *Goghrita* / Petrolatum (g) | 1000 | 1000 | 500 | 500 |
| Duration of trituration (hrs) | 8 | 8 | 8 | 8 |
| Weight of *Keshnjana* (g) | 1037 | 1032 | 512 | 516 |
| Loss (g) | 13 | 18 | 13 | 9 |

**Table 4:** Organoleptic Characters of various formulations:

| **Parameters** | **Male *Keshnjana*** | **Female *Keshnjana*** | **Male *Keshmasi* Ointment** | **Female *Keshmasi* Ointment** |
|---|---|---|---|---|
| Colour | Jet Black | Jet Black | Jet Black | Jet Black |
| Consistency | Thick & Semi solid | Thick & Semi solid | Thick & Semi solid | Thick & Semi solid |
| Touch | Smooth | Smooth | Smooth | Smooth |

**Discussion**:

For the preparation of the *Keshamasi*, male scalp hair and female scalp hair were selected as per the reference of *Ashtang Hridaya Uttara Khanda* 16/30. Although no directed indication regarding the gender based nature of raw drug is indicated, however here an attempt was made to prepare *Keshanjana* from male and female scalp hair as well as compare the same clinically.

Preliminary *Shodhana* of hairs was done to ensure it absolutely free from hair dye dead tissues, scales and other pathognomic conditions. These were subjected to *Putapaka* (2) by smearing in a fixed quantity of *Goghrita*. During Paka, characteristic smell was felt similar to burning of proteins. Hair is chiefly composed of keratin (3), a type of dead protein. During *Putapaka*, it led to the noxious smell. Smearing in *Goghrita* was done to ensure uniform heating and avoid the charring of hairs.

Slight variation was observed in the yield of *Masi* from hairs in both the groups. Average loss encountered was not more than 22 % (Table 1). Loss is due to combustion of proteinaceous material and only carbon particles remains as residue. This can be confirmed only after subjection to analytical techniques.

*Masi* procured from *Putapaka* was sieved through 400 # mesh to ensure uniform and least particle size. Because, eye is sensitive to particle size larger than 25 microns (4). Thus sieving through aforesaid method has ensured this purpose. Loss observed has been shown in (Table 2**).** Thus, obtained *Masi* was divided into 2 groups for preparation of *Anjana*/ointment. *Anjana* was prepared by adding *Goghrita* to *Masi* and divided into 4 batches each for male and female hairs. Similar pattern was followed for preparing ointment. Ointment was selected to ensure elegant and pleasant dosage form as well as for metering the dose administered in form of *Anjana*. For preparation of ointment, petrolatum (5) as a base was used. Generally it the most widely used base for preparation of ophthalmic ointments with minimum interference in base material. Base for preparation of *Anjana*/ointment was affixed at 20 times the base material in both the groups for all the batches. This was achieved after numerous trial and error methods in pilot study.

Trituration of base with *Masi* was carried out for 8 hrs. Trituration ensures

homogenous mixture of the two components and proper mixing of the drugs. Studies related to trituration process have proved that it leads to further reduction in particle size (6). Attrition causes reduction in particle size and thus ensures minimal irritation to eyes during application of ointment.

Average loss observed in *Goghrita* as a base was 1.24 % and 1.74 % in male and female *Keshanjana* respectively (Table 3). Similarly, Average loss observed in petrolatum as a base was 2.48 % and 1.71 % in male and female *Keshanjana* ointment respectively. Relatively more loss in ointment group may be due to greasy and super sublime nature of petrolatum and some adherence to vessel during processing.

*Goghrita* has its own therapeutic properties related to ocular diseases. Presence of Vitamin A (Retinol) is also reported in *Goghrita* (7), specifically. Further, its indication on a *Vata* predominant disorder like dry eye syndrome can be relieved to a greater extent by using *Goghrita* as a base. However, its unctuousness makes its less suitable for preparing formulations. Moreover, bacterial overgrowth in unsterilized formulations is also a matter of concern. Rigid guidelines are followed while preparation of ocular formulations as instillation of medicines is directly into the eyes. *Goghrita* may fail to quality on these fronts.

On physical parameters, no significant changes were observed in both the groups (Table 4). However, from the point of view of elegance and quality of finished product, *Keshanjana* ointment can be considered as more standard and refined dosage form in comparison to *Keshanjana*.

**Conclusion:**

Overall review of pharmaceutical process ensures that preparation of *Anjana* dosage form can be modified into ointment form by selecting suitable base and abiding to the procedure mentioned in this paper. As far as *Keshanjana* is concerned, *Anjana* prepared from *Goghrita* and petrolatum was similar in physical characters. However, preparation is more feasible with later for pharmacy scale as well as far as modishness of finished produced is concerned. However, *Goghrita* has its own therapeutic properties. Therefore, final word can be given only after subjecting both the formulations for clinical trials on dry eye syndrome.

**References:**

1. Vardhana Prabhakar, Dhiman K S *et al.*, Managment of Sukshakshipaka (Dry Eye Syndrome) with Parisheka and Keshanjana 2005, HPU, Shimla.
2. Ashtanga Hridaya, Uttara Khanda 16/30, Shrimad Vagbhatta, Ashtanga Hridayam, Shrikantha Murthy K. R. Chaukhamba Krishna Das Academy, Varanasi, 2003.
3. Remington, The Science and Practice of Pharmacy, 21st edition, Volume I, Chapter 44, Page 871.
4. E book, Modern Pharmaceutics, Chapter 13.
5. Remington, The Science and Practice of Pharmacy, 21st edition, Volume I, Chapter 55, Page 1077.
6. Remington, The Science and Practice of Pharmacy, 21st edition, Volume I, Chapter 37, Page 719.
7. http://en.wikipedia.org/wiki/Ghee

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