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Analytical study of modified *Manashiladi Lepa* into Ointment

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ABSTRACT

Lepa Kalpana is one amongst the external application used in Ayurveda. *Manashiladi Lepa* is a formulation explained in 'Rasa Tantra Sara Va Siddha Prayoga Sangraha' for the prevention of scar in the skin surface. The formulation contains *Ghrita* and *Madhu* which is to be mixed with the powder of the herbs told in the formulation. In the present scenario, the *Lepa Kalpana* is not liked by the patients themselves as it leaves behind residual marks on the skin surface and stains the cloth if it comes in contact with it. Hence a modified *Lepa* in the form of ointment which contains reduced amount of oiliness and good packing is accepted by all. Literary review done through various sources like books, journals and internet revealed that, no modification studies have been carried out on this formulation yet. The *Lepa* is modified into an ointment for its easy acceptability and usage. The formulation is tested for its analytical values and discussed in the article.

Key words: *Manashiladi Lepa*, *Ointment*, *Analytical study*.

INTRODUCTION

Acharya Sharangadhara in his book *Sharangadhara Samhita* has explained different types of formulations for usage out of which '*Bahya Kalpana*' is one.^[1] *Lepa Kalpana* forms an important sub type of *Bahya Kalpana* which is widely used due to its action on the localized area of application. *Manashiladi Lepa* is explained in 'Rasa Tantra Sara Va Siddha Prayoga Sangraha' for the prevention of scar in the skin surface.^[2] But due to the presence of *Ghrita* in *Manashiladi Lepa*, it becomes difficult for the patients

in carrying the formulation, difficult for large scale manufacturing and has a short shelf life. The modified ointment will enable for easy usage by the patients. Since the formulation is in ointment form, it can be packed easily. The patients will be able to carry the pack easily and the applicability of the ointment will be easy. The modification into ointment was done using necessary base and other emulsificants.

MATERIALS AND METHODS

Collection of raw drugs

The following raw drugs were purchased from shop in Mangalore which deals with purchase and sale of genuine herbs. All the raw drugs were later certified as genuine samples by the Department of Dravya Guna, Alva's Ayurveda Medical College, Moodbidri, Karnataka.

- *Ela* (*Elataria cardamomum*)
- *Manjistha* (*Rubia cordifolia*)
- *Laksha* (*Laccifer lacca*)
- *Haridra* (*Curcuma longa*)

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- *Daruharidra* (*Berberis aristata*)
- Honey

The other ingredient *Manashila* was also purchased from the same shop and *Manashila* was subjected for *Shodhana*.

Pharmaceutical study

The modified form of *Manashiladi Lepa* in ointment form was prepared under standardized condition in trial batch initially and later in 6 batches for standardization.

Method of preparation

- All the drugs listed in table no. 1 were taken in equal quantity.
- *Manashila* is purified by subjecting it to *Bhavana* with *Ardraka Swarasa* for 7 times.^[3]
- The fine powder of purified *Manashila* is kept ready by powdering it in a pestle.
- The coarse powder of the herbal drugs of *Manjishta*, *Ela*, *Haridra* and *Daruharidra* is kept ready.
- The coarse powders of the herbs are subjected to extraction using Soxhlet apparatus.
- The powder of *Laksha* is melted and added to the extract of the herbs along with other ingredients. Honey is also added at this stage.
- Weighed quantity of carbopol (4%) was soaked in water and kept aside.
- Preservative (0.1% Methylparaben & Propylparaben) was dissolved in a mixture of water and propylene glycol.
- Above mixtures was dispersed in carbopol base.
- It is then subjected to proper mixture by continuous stirring and made into ointment.
- The prepared ointment is packed into the containers.

OBSERVATIONS

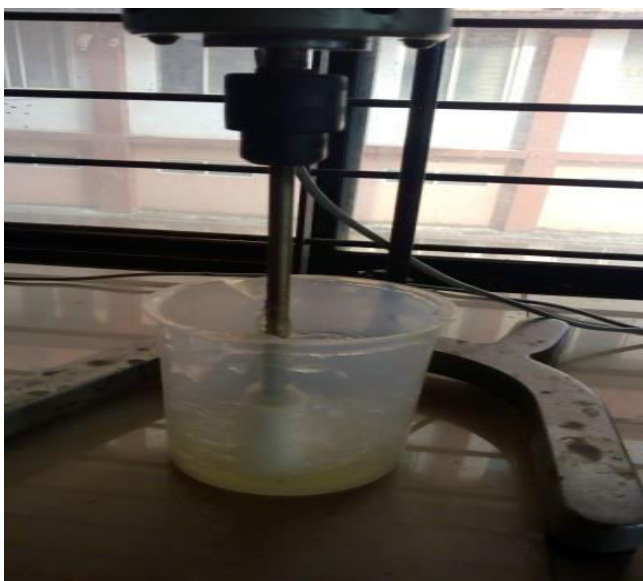
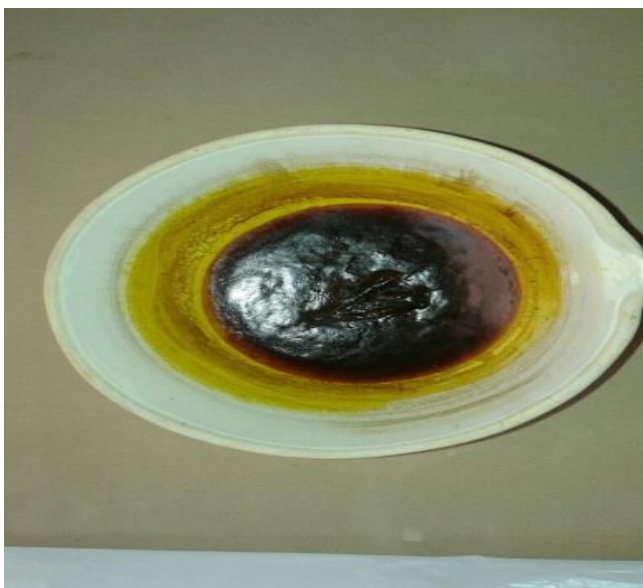
The organoleptic study after the preparation of the formulation is mentioned below.

Odor - Predominantly of Manjishta and Haridra

Color - Reddish brown color

Consistency - Soft, smooth in consistency and semi-solid in nature.





Analytical study

Ointments are semi-solid preparations meant for external application to the skin or mucous membrane.^[4] The prepared sample was subjected for analytical study and the readings were found as shown in table no. 2.

Table 1: List of raw drugs^[6] with proportion

SN	Drug	Part
1.	<i>Manjishta (Rubia cordifolia Linn.)</i>	1
2.	<i>Haridra (Curuma longa Linn.)</i>	1
3.	<i>Daruharidra (Berberis aristata DC)</i>	1
4.	<i>Ela (Elettaria cardamomum Linn.)</i>	1
5.	<i>Laksha (Laccifer lacca)</i>	1
6.	Honey	1



Table 2: Analytical report

SN	Test
1.	Loss on drying - 0.085%
2.	Refractive index - 1.733
3.	Saponification value - 189.68

4.	Acid Value - 3.877
5.	Spreadability test - 23.07 gm-cm/sec
6.	Viscosity - 73810
7.	Specific gravity (at 30°C) - 0.7538
8.	Unsaponification value - 75.8
9.	Ester value - 107.330
10.	Free fatty acid - 56.6
11.	pH - 7.25
12.	TLC Rf value at 0.328, 0.556, 0.713

DISCUSSION

Preparation of Manashiladi ointment

Manashiladi Lepa is a formulation mentioned in 'Rasa Tantra Sara Va Siddha Prayoga Sangraha', which is to be used for external application to prevent the formation of scars. The formulation contains ghee as an additive to other ingredients, which is to be added just before the application over the skin. Since this cause practical difficulty to patients who are going to work and leave a greasy skin after application, the formulation needed to be modified. Hence it was modified into ointment so that it is easy for packing, improve shelf life and convenience of usage by patients.

The formulation contains Purified *Manashila*, *Haridra*, *Daruharidra*, *Manjishta*, *Ela*, *Laksha* and *Madhu* which help in the healing of the wound and prevention of the formation of the scar. All the ingredients were taken in equal quantity as told in the reference. The extract of the herbs were obtained and later mixed with the fine powder of purified *Manashila*. Then it was mixed with 4% carbopol. 0.1% Methylparaben & Propylparaben were added as preservative to improve the shelf life of the formulation.

Analytical study

There are no readings set by the government agencies for the formulation of this study to be compared with.

The readings of the analytical study mentioned are the average readings of the modified ointment after 6 samples were tested.

Since the loss on drying is only 0.085%, it indicates that the moisture content is minimal which is needed for the ointment to stick to the skin surface properly but it will help in maintaining the shelf life of the product.

The refractive index is measured to see the density of the solution before making it into ointment. The reading of 1.733 is indicative of fewer impurities and less density of the solution during the preparation and thus reducing the density of the ointment.

Saponification value number represents the number of milligrams of potassium hydroxide required to saponify 1g of fat under the conditions specified. The value of 189.68 is an indicator of good shelf life of the prepared sample.^[5]

The lesser the acid value of a formulation, the better is its shelf life. The lesser acid value of 3.877 indicates less chances of rancidity in short term and better shelf life. The smell and the texture of the ointment will be better preserved.

The spreadability value of 23.07gm-cm/sec is a good indicator of its thickness and indicates that it will hold to the skin surface during application and run off from the surface. The formulation has desirable viscosity value of 73810 and spreadability so that it is retained over the skin and absorbed quickly.

Specific gravity less than 1 indicates that the formulation is lighter than water and it will not leave a residue or oiliness in the skin after application, which is desirable in the present day cosmetic value. The tested formulation had a specific gravity of 0.7538.

Unsaponifiable constituents are an important consideration when selecting oil mixtures for the manufacture of soaps. Unsaponifiables can be beneficial to an ointment formula because they have properties such as moisturization, conditioning, vitamins, texture, etc. The unsaponification value of 75.8 is a good indicator of the ointment being good for moisturizing to the skin after application.

Esters can be extremely beneficial to skin. They are emollients, meaning they hydrate, soften and smooth the surface of skin. Lotions and creams intended to improve the texture of skin rely on emollients as their active ingredients. Unlike other types of emollients, esters don't leave an oily residue on the skin, which gives them a special advantage. The ester value of 107.330 in the formulation is an indicator that it helps in improving the texture of the skin, which is needed as per the study and the ointment don't leave a residue on the skin surface.

The low free fatty acid value of 56.6 indicates that the prepared sample is having good shelf life and less chances of rancidity in short term of 6 months to 1 year.

The pH value of 7.25 indicates that the prepared sample is close to neutral in nature and will not harm the skin on application.

The TLC value denotes the significance presence of the herbal content in the formulation.

CONCLUSION

With respect to the preparation of *Manashiladi Lepa* into modified ointment form, it is seen that the modification is needed in the present times to improve the shelf life of the product, easy packing and better acceptability by the patients. The ointment has undergone various analytical tests to justify its modification and show that it can replace the original *Lepa* form in the present era. The modified *Manashiladi Lepa* in ointment form can be manufactured by the pharmacies in large scale and brought into the open market for the benefit of the mankind.

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