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Pharmaceutico-Analytical study of Bhringaraja oil and its Conversion into Lotion

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Abstract:

Rasashastra and *bhaishajya kalpana* is one of the branch of *Ayurveda* in which all methods of *ayurvedic* medicine purification, formation, dose, indication are available. The concept of beauty and cosmetics is an ancient as mankind and civilization. Indian herbs and its significance are popular worldwide. In present scenario, it seems improbable that herbal lotion, although better in performance and safer than the synthetic ones, will be popular with the consumers. So, oil can get converted into lotion, that will increase the easiness to use the medicine with increase in shelf life. *Ayurvedic* literature name *sharangdhar Samhita* had explained *bhringaraja* oil used in dandruff (*darunak*), itching of scalp, alopecia *rogadhikara*. The present study is about the preparation of *Bhringaraja* lotion and its comparative Physico- chemical study with *Bhringaraja* oil. In this study conversion of oil into lotion is done as it is easily acquired by society.

Introduction:

Rasashastra and *bhaishajya kalpana* is one of the branch of *Ayurveda* in which all methods of *ayurvedic* medicine purification, formation, dose, indication are available. The concept of beauty and cosmetics is an ancient as mankind and civilization. Indian herbs and its significance are popular worldwide. Lotion word derived from lotic which means pertaining to or living in flowing water. Lotion is a liquid preparation having a soothing, cleansing or antiseptic action applied to skin. Lotion acts as a replenish extra dry or rough spots on the skin. A lotion is a low- viscosity topical preparation intended for application to the skin.¹ By the contrast, cream and gels have higher viscosity, typically due to lower water content. Compounds Evaluation of lotion comprises the quality control tests including visual assessment and physico chemical controls such as P^H, density, spreadability, Thermal stability². Ayurvedic literature name *sharangdhar Samhita* had explained *bhringaraja* oil used in dandruff (*darunak*), itching of scalp, alopecia roga dhikara.³ The present study is about the preparation of *Bhringaraja* lotion and its comparative Physico- chemical study with *Bhringaraja* oil. In this study conversion of oil into lotion is done as it is easily acquired by society.

Material And Methods³:

Bhringaraja, *Lohakitta*, *Triphala*, *Sariva* and *Til Tail* were procured from market required for the study.

Preparation⁴:

Decoction was prepared by using *Bhringaraja*, *Lohakitta*, *Triphala*, *Sariva* by adding 16 Part of Water and heated on

low flame till 1/8 part of it remains; Decoction was divided equally for both Lotion and Oil preparation. Lotion preparation was done by Lotion base materials, all materials are given in table below. Oil was prepared by the reference of *Tail pak vidhi* mentioned in *Sharangdhar Samhita Madhyam khanda*⁴.

Evaluation:

To evaluate the formulations prepared, quality control tests including *organoleptic* assessment and physicochemical controls such as pH, density and viscosity were performed. Also, to assure the quality of products, specific tests for Lotion formulations including the Uniformity of contents, Spreadability Particle size, LOD, Thermal stability test were carried out.

Physical appearance inspection:

The formulations prepared (Oil and Lotion) were evaluated in terms of their Appearance, Color, Odor, Taste, clarity, Uniformity and *Spreadability*.

Importance of pH:

A pH of 7.0 is considered neutral. The pH of the skin is slightly more acidic and should sit at around (4.5 - 5.5). Acidity plays a key role in your skin by inhibiting the growth of harmful bacteria and activating certain enzymes in your stratum corneum.

Importance of Spreadability:

Spreadability of semisolid formulations, that is, the ability of a cream or gel to evenly spread on the skin, plays an important role in the administration of a standard dose of a medicated formulation to the skin and the efficacy of a topical therapy.

Importance of Density:

Density is important because it affects whether objects will float or sink.

Importance of Particle size:

The particle size and particle size distribution (PSD) of these materials are of great importance to the end user because they affect key colloid properties such as rheology, film gloss, surface area and packing density.

Importance of LOD: The moisture content is crucial in the shelf life of many raw materials and products. A method commonly used for moisture content determination is the loss-on-drying method. The final weight loss is calculated, and represents the moisture content of the sample.

Importance of Thermal Stability test:

The purpose of stability testing cosmetic products is to ensure that a new or modified product meets the intended physical, chemical and microbiological quality standards as well as functionality and aesthetics when stored under appropriate conditions.

Importance of Moisture content of oil⁵:

Moisture in inappropriate amounts and places is very damaging to the useful life of food.

Importance of refractive index of oil:

The refractive index of any medium gives the ratio of the speed of light in vacuum to the speed of light in that medium.

Importance of acid value of oil⁵:

The acid value (AV) is a common parameter in the specification of fats and oils. It is defined as the weight of

KOH in mg needed to neutralize the organic acids present in 1g of fat and it is a measure of the free fatty acids (FFA) present in the fat or oil.

Importance of iodine value of oil: The most important application of the iodine value is to determine the amount of unsaturation contained in fatty acids. This unsaturation is in the form of double bonds which react with iodine compounds. The higher the iodine value, the more unsaturated fatty acid bonds are present in a fat.

Importance of Saponification of oil:

Saponification is the hydrolysis of fats or oils under basic conditions to afford glycerol and the salt of the corresponding fatty acid. It is important to the industrial user to know the amount of free fatty acid present, since this determines in large measure the refining loss.

Importance of Viscosity of oil:

Viscosity is a measure of an oil's resistance to flow. It decreases (thins) with increasing temperature and increases (or thickens) with decreased temperature. The benefits of oils with a higher VI are: A general increase in viscosity at higher temperatures, which results in lower oil consumption and less wear.

Results:

Table No: 01 Formula of prepared *Bhringaraja* Lotion and *Bhringaraja* Oil

Sr. no.	Ingradiant	Parts
1	Bhringaraja	Leaf
2	Lohakitta	Powder
3	Triphala	Bharad
4	Sariva	Powder

Table No: 02 Evaluations of *Bhringaraja* Lotion

Test	Result
Appearance	Soft Creamy lotion, Free flowing
Colour	Buff colour
Odor	Characteristic
Taste	Bitter
Density	0.9787 gm/ml
PH	3.5
Uniformity of Contents	Complies
Spreadibility	Uniformly Spreading
Particle Size	300 #
Thermal Stability	Melts at 51°C
Loss on Drying	8.55%

Table No: 03 Evaluations of *Bhringaraja* Oil

Test	Result
Appearance	Clear Oil
Color	Dark Yellow
Odor	Characteristic
Taste	Characteristic
Refractive Index	1.4662
Specific gravity	0.9179
Saponification Value	192
Unsaponified Matter	1.21 %
Iodine Value	109
Moisture content	6.8 %
Acid value	1.5
Viscosity	0.94

Discussion:

Ayurvedic literature name *sharangdhar Samhita* had explained bhringaraja oil used in dandruff (darunak) , itching of scalp, alopecia *rogadhikara*. *Bhringaraja* is *katu, tikta rasatmak, ushna viryatamak* used as *keshya* mentioned in samhita. In this oil preparation *bhriungaraja* is a main content of oil, it has good penetrating power, as well as *ranjan* properties. other contents is *triphala*, which act as *rasayan* i.e. good for nourishing the hair. *Sariva* is *sheet viryatmak* i. e. act as *pitta shaman* properties. Til tail used as a base for preparation of oil i.e also good for nourishing the hair.⁶ In this modern era application of oil is not easy, so to ease the use of medicine in day today life we convert oil into lotion. Lotion also shows similar properties as of oil from analytical testing , so we can also use lotion if application of oil is not possible.

CONCLUSION:

The formulated Lotion has the entire expected efficacy which was mentioned in literature of *Bhringaraja* oil. As the *Bhringaraja* oil is working against *Kandoo* (scalp itching) *darunaka* , *Indra lupta* and other *shiro roga*³. So the aim of Lotion preparation is to provide alternative to oil is successful here as it is best fitted in all analytical parameters. The physicochemical approach used for preservation of formulation, to avoid the risk proposed by chemical preservatives.

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End of article

